

Automould Extensions – Rev2

Tender No.
EB/AUT/EXT/10/19/Z1A



Tender

**EXTENSION TO THE AUTOMOULD
MANUFACTURING FACILITY IN ZONE 1A OF THE
ELIDZ**

AT THE

EAST LONDON INDUSTRIAL DEVELOPMENT ZONE

CONTRACT NO: EB/AUT/EXT/10/19/Z1A

**EXTENSION TO THE AUTOMOULD MANUFACTURING
FACILITY IN ZONE 1A OF THE ELIDZ**

ENVELOPE A: TECHNICAL PROPOSAL

VOLUME 1 OF 2

East London IDZ
Contact person: Ms. Anathi Mzantsi
Email: anathi@elidz.co.za

Latitude Quantity Surveyors
Office 2A, 123 Western Avenue
Vincent, East London

Contact Person: Ziyanda Manzana
Tel : 043 – 742 2884
E-Mail : zmanzana@latitudeqs.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/AUT/EXT/10/19/Z1A

**EXTENSION TO THE AUTOMOULD
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

T.1.1: TENDER NOTICE AND INVITATION TO TENDER

INVITATION: FOR THE EXTENSIONS TO AUTOMOULD 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 the PROVISION OF EXTENSIONS TO AUTOMOULD 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/AUT/EXT/10/19/Z1A	EXTENSION TO THE AUTOMOULD MANUFACTURING FACILITY IN ZONE 1A OF THE ELIDZ	09 September 2020 at 12h00

The scope of the works comprises extensions to an existing single story, steel framed Factory Building with under cover loading and receiving areas, as well as a utility building adjacent to the existing Factory Building with modifications to the existing Factory Building

Factory Building Extension

- Single-story steel-framed Factory Building with a free inside height of 8m to accommodate a 30t Crane with 12m span
- Two Covered Canopies (loading/receiving) at extended Factory Building
- 1 x Male & 1 x Female Staff Ablutions

Modifications to the Existing Factory

- Removal of sky-lights
- Improvement to lighting levels
- Installation of smoke extraction

Utility Building

- Storage Room
- Wash Bay

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

Paved areas

General

- Demolition, modification and extension of the hardstand
- Relocation of services
- Minor improvements to the existing main entrance
The new second entrance (northern corner of the site)

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 effected by sending an email to Anathi Mzantsi at the ELIDZ, confirming your interest in tendering, to be received by no later than **21 August 2020 at 09h00**.

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.

A Zoom meeting request (with link) will be emailed to all registered potential tenderers by no later than 21 August 2020 at 10h00.

A virtual **Tender Clarification Meeting** with representatives of the Employer will take place with the **registered potential tenderers** on the Zoom platform on **21 August 2020 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.
- ☐ Tenderers to provide 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.

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

- ❑ The Tenderer has 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.
- ❑ Registration with the CIDB in the category **7 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**. The actual sub-contracting agreements with SMME will only be required upon award of this contract
- ❑ 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.
 1. It is an objective of the ELIDZ, a public entity to utilize state resources to advance previously disadvantaged people as widely as possible. In pursuit of that objective, when the ELIDZ has more than one construction tender going out into the marketplace, it may use a rotation system on the following basis:First, a tenderer who is the preferred tenderer for more than one project will be approved for the tender with the highest monetary value – in respect of those tenders where it was the preferred bidder; and
 2. Second, existing contractors who have previously been awarded two or more construction projects in one year for the work undertaken within the boundaries of the East London Industrial Development Zone for an accumulative contract value of R300 million (incl VAT) will be excluded from tendering.

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

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 BBEE.

Score breakdown:

- ☐ 80 Points for Price
- ☐ 20 Points for BBEE

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 on **19 August 2020 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 09 September 2020**. 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.

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.

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

T1.2: TENDER DATA

EXTENSION TO THE AUTOMOULD MANUFACTURING FACILITY IN ZONE 1A OF THE ELIDZ -
EB/AUT/EXT/10/19/Z1A

Project title:	EXTENSION TO THE AUTOMOULD MANUFACTURING FACILITY IN ZONE 1A OF THE ELIDZ		
Contract No:	EB/AUT/EXT/10/19/Z1A		
Advertising date:	14 August 2020	Closing date:	09 September 2020
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 Particular Specifications: Construction Works</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>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> <p>Envelope "A"</p> <p>Volume 2 of 2: TECHNICAL PROPOSAL: RETURNABLE SCHEDULES</p>		

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

	<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 EC C1.2 JBCC 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	<table border="1"> <tr> <td colspan="2">The Employer's Principal Agent is</td> </tr> <tr> <td>Name:</td> <td>Jedd Webber</td> </tr> <tr> <td>Address:</td> <td>S and P Architects cc Physical address: 123 Western Avenue, Vincent East London Code 5247</td> </tr> <tr> <td>Tel:</td> <td>043 726 9327</td> </tr> <tr> <td>Fax:</td> <td>043 726 9329</td> </tr> <tr> <td>E-mail:</td> <td>jedw@smale.co.za</td> </tr> </table>	The Employer's Principal Agent is		Name:	Jedd Webber	Address:	S and P Architects cc Physical address: 123 Western Avenue, Vincent East London Code 5247	Tel:	043 726 9327	Fax:	043 726 9329	E-mail:	jedw@smale.co.za
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Tel:	043 726 9327												
Fax:	043 726 9329												
E-mail:	jedw@smale.co.za												
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 7 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.</p>												

EXTENSION TO THE AUTOMOULD MANUFACTURING FACILITY IN ZONE 1A OF THE ELIDZ -
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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 21 August 2020 at 09h00. Tenderers who did not registered by the due date and time will not be allowed to submit a tender.</p> <p>A virtual Briefing or Tender Clarification Meeting with representatives of the Employer will take place via the Zoom virtual platform on 21 August 2020 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: 21 August 2020 at 09h00</p> <p>Virtual briefing: Zoom virtual platform</p> <p>Zoom invitation: Email invitations with Zoom link will be forwarded by 21 August 2020 at 10h00 to all registered participants</p>
F.2.10.5	<p>Add the following Clause:</p> <p>Tenderers are to submit fully priced Bills of Quantities with their tender and 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</p>

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

	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.
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"> <input type="checkbox"/> Tenderers are required to submit a Valid SARS Tax Clearance Certificate with their tender or SARS PIN number. <input type="checkbox"/> 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. <input type="checkbox"/> Tenderers to provide certified copy of Company Registration Certificate <input type="checkbox"/> Tenderers to provide Letter of Good Standing from Compensation Commissioner. <input type="checkbox"/> 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. <input type="checkbox"/> Non- signed "Form of Offer" the financial proposal in "Envelope B" submission will result in the disqualification of the tender. <input type="checkbox"/> Inclusion of Price Offer and/ or any other price related details in "Envelope A -Technical Proposal "will result in the disqualification of the tender. <input type="checkbox"/> Proof of Registration with the <u>CIDB</u> in the category 7 GB. <input type="checkbox"/> Proof of registration on CSD – MAAA number. <input type="checkbox"/> The tenderer must submit a bank rating equal to and or better than a C. (Note letter from Bank to exclude tendered amount). <input type="checkbox"/> All returnable documents and schedules as listed in T2.1of Volume 2 of 2: List of Returnable Documents. <input type="checkbox"/> Submit signed declaration of 100% Local content and production, for Steel and Steel components. <input type="checkbox"/> The successful tenderer must sub-contract a minimum of 30% of the value of the contract to designated SMME from within the BCMM area.

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

	<p>SMME profile must meet 51% Black ownership. Database for selection provided by ELIDZ.</p> <ul style="list-style-type: none"> ❑ 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. The actual sub-contracting agreements with SMME will only be required upon award of this contract ❑ 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. <ol style="list-style-type: none"> 1. It is an objective of the ELIDZ, a public entity to utilize state resources to advance previously disadvantaged people as widely as possible. In pursuit of that objective, when the ELIDZ has more than one construction tender going out into the marketplace, it may use a rotation system on the following basis: First, a tenderer who is the preferred tenderer for more than one project will be approved for the tender with the highest monetary value – in respect of those tenders where it was the preferred bidder; and 2. Second, existing contractors who have previously been awarded two or more construction projects in one year for the work undertaken within the boundaries of the East London Industrial Development Zone for an accumulative contract value of R300 million (incl VAT) will be excluded from tendering.
F3.4	Tender submissions will be opened at the offices of the ELIDZ immediately after the closing time.
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> <ol style="list-style-type: none"> 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. <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 80/20 preference point system, where:</p> <ul style="list-style-type: none"> ▪ A maximum of 80 points are allocated for financial offer. ▪ A maximum of 20 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</p>	

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

follows:

$$\text{Points awarded} = 80 \left[1 - \frac{P - P_m}{P_m} \right]$$

Where P = the comparative offer of the tender offer under consideration
P_m = the comparative offer of the lowest responsive tender

Preference Evaluation Criteria

A maximum of twenty (20) 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	<p>Tender offers will only be considered if:</p> <ol style="list-style-type: none"> The tenderer has in his or her possession an original valid Tax Clearance Certificate issued by the South African Revenue Services. 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 complies with the legal requirements, stated in the Tender data, The tenderer has not: <ol style="list-style-type: none"> abused the Employer's Supply Chain Management System; or failed to perform on any previous contract and has been given a
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Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

EXTENSION TO THE AUTOMOULD MANUFACTURING FACILITY IN ZONE 1A OF THE ELIDZ -
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	<p>written notice to this effect.</p> <p>f) Proof of registration with the Compensation Commissioner is submitted with this tender.</p> <p>g) Proof of Company Registration is submitted with this tender.</p> <p>h) Proof of of Registration with the <u>CIDB</u> in the category 7 GB is submitted with this tender.</p> <p>i) The tenderer has a bank rating equal to and or better than a C. (Note letter from Bank to exclude tendered amount).</p> <p>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.</p> <p>k) Proof of registration on CSD – MAAA number.</p> <p>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.</p>
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	Item Max. Points
Criteria 1: Approach		20
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:		
Good (Submitted a construction programme acceptable for approval by the Principal Agent with innovative programming interventions to accelerate project objectives.)		10
Acceptable (Provided a detailed and convincing construction programme and demonstrated implementability to meet project objectives.)		7.5
Poor (Provided a construction programme but details are missing.)		2.5
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 optimisation of resources and activities.		
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.)		7.5

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

EXTENSION TO THE AUTOMOULD MANUFACTURING FACILITY IN ZONE 1A OF THE ELIDZ -
EB/AUT/EXT/10/19/Z1A

Poor (Provided a basic implementation strategy but lacks a clear understanding of the project scope and detailed deliverables (multi-disciplinary).)		2.5
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:		
Good (Submitted an 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 be registered with the required professional bodies (e.g. ECSA, SACPCMP, SACQSP, SACAP). Key team members are to have performed work of a similar nature.)		10
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 be registered with the required professional bodies (e.g. ECSA, SACPCMP, SACQSP, SACAP). Key team members are to have performed work of a similar nature.)		7.5
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.)		2.5
Unacceptable (Does not demonstrate that the project organogram and project team will be able to meet the project objectives.)		0
2.1.2 Contractor Project Manager (CPM) (10 years minimum post registration 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 (7 years minimum experience, professional project management registration required):		
If SA has ≥ 15 years' appropriate experience and has completed similar projects successfully in the last 5 years.		10

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

EXTENSION TO THE AUTOMOULD MANUFACTURING FACILITY IN ZONE 1A OF THE ELIDZ -
EB/AUT/EXT/10/19/Z1A

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
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 Schedule of Construction Plant</u>		
If Tenderer has the necessary Construction Plant available to execute the works:		
Good (Submitted a document pertaining to access to the required schedule of plant and equipment including condition of all plant and equipment.)		5
Acceptable (Submitted detailed information pertaining to access to the required schedule of plant and equipment.)		4
Poor (The Tenderer demonstrates that he has access to the required schedule of plant and equipment, but lacks detail.)		2
Unacceptable (Does not demonstrate that the Tenderer has access to required plant.)		0
<u>2.3 Relevant Experience</u>		
2 points to a maximum of 10 points can be scored for each confirmed similar (size, type and timeframes) project in progress or carried out in the last 5 years		10
If no similar successful projects in the last 5 years		0
Criteria 3: Health, Safety and Environment		15
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.)		15
Unacceptable (Does not demonstrate a basic OHS and CEMP implementation strategy linked with the construction programme and project objectives.)		0

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

Criteria 5: Local Operational Office		20
<u>5.1 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. The ELIDZ reserves the right to visit the premises prior to scoring.		
Proof of a local operational office within the confines of the BCM Municipal area		20
Proof of an operational office within the confines of the Eastern Cape area		10
No local office in operation		0
	Total Point Score	Maximum Points
<u>TOTAL EVALUATION SCORE FOR FUNCTIONALITY</u>		100
TENDERERS WITH A SCORE OF LESS THAN 75 OUT OF 100 WILL NOT BE CONSIDERED FURTHER		

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.

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

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:
 - 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 I 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 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.

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

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 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.

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

The tenderer is advised to seek qualified advice regarding insurance.

F.2.10 Pricing the tender offer

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

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

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

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

F.2.11 Alterations to documents

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.

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.

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

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.

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 BBEE 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.

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 BBEE 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.

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

- 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 BBBEE contribution
- c) Add the points scored for price and BBBEE.

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.
- 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
---	-------------------------

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

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
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.

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

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.

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:

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

- 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.

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

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 **Extention to the Automould Manufacturing Facility** in Zone 1A at the East London Industrial Development Zone.

1.2 Overview of the works

The proposed works comprises the extension of an existing manufacturing facility, a new utility building and modifications to the existing factory building.

1.3 Extent of the works

Factory Building Extension

- Single-story steel-framed Factory Building with a free inside height of 8m to accommodate a 30t Crane with 12m span
- Two Covered Canopies (loading/receiving) at extended Factory Building
- 1 x Male & 1 x Female Staff Ablutions

Modifications to the Existing Factory

- Removal of sky-lights
- Improvement to lighting levels
- Installation of smoke extraction

Utility Building

- Storage Room
- Wash Bay
- Paved areas

General

- Demolition, modification and extension of the hardstand
- Relocation of services
- Minor improvements to the existing main entrance
- The new second entrance (northern corner of the site)

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 re-instating the dedicated contractors site area.

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 following sketch highlighting the site establishment, offices and storage of materials demarcated area:




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

EXTENSION TO THE AUTOMOULD MANUFACTURING FACILITY IN ZONE 1A OF THE ELIDZ -
EB/AUT/EXT/10/19/Z1A



The temporary barriers and hoarding measured below are only for hoardings prescribed by the Employer, which is for the hoarding, scaffold and shutter board to under side of the roof. The extent of this work is depicted on the Section drawings attached.

Furthermore, the Contractor must allow for all necessary temporary hoardings, hoardings with gantries, fans, safety screens, barriers, access gates, covered gangways, walkways, overhead protection against falling objects and materials, security fences, etc. for the enclosure of the works and elements thereof for the protection of the public and others as required by the Construction Regulations 2014 issued in terms of Occupational Health and Safety Act 1993, any other Laws and Regulations and/or demanded by his own site requirements. Temporary works also include:

Description	Application
Security barrier 4.8m high formed of 19mm shutter board securely fixed to and including temporary scaffolding for support, all joints between boards and between boards and floor/roof to be taped with duct tape etc.	Applicable to: Section 1 Duration: Section 2 Description: 
Security barrier average 8m high with splayed top to follow slope of roof formed of 19mm shutter board securely fixed to and including temporary scaffolding for support, all joints between boards and between boards and floor/roof to be taped with duct tape etc.	Applicable to: Section 2 Description: 
Security barrier 2.40m high formed of IBR sheeting securely fixed to 50 x 75mm purlins/ girts at 1200mm c/c fixed to 200mm diameter gumpole posts at 1200mm c/c including concrete base, excavation, carting away etc.	Applicable to: Section 1 Duration: Section 2 Description: 

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

EXTENSION TO THE AUTOMOULD MANUFACTURING FACILITY IN ZONE 1A OF THE ELIDZ -
EB/AUT/EXT/10/19/Z1A

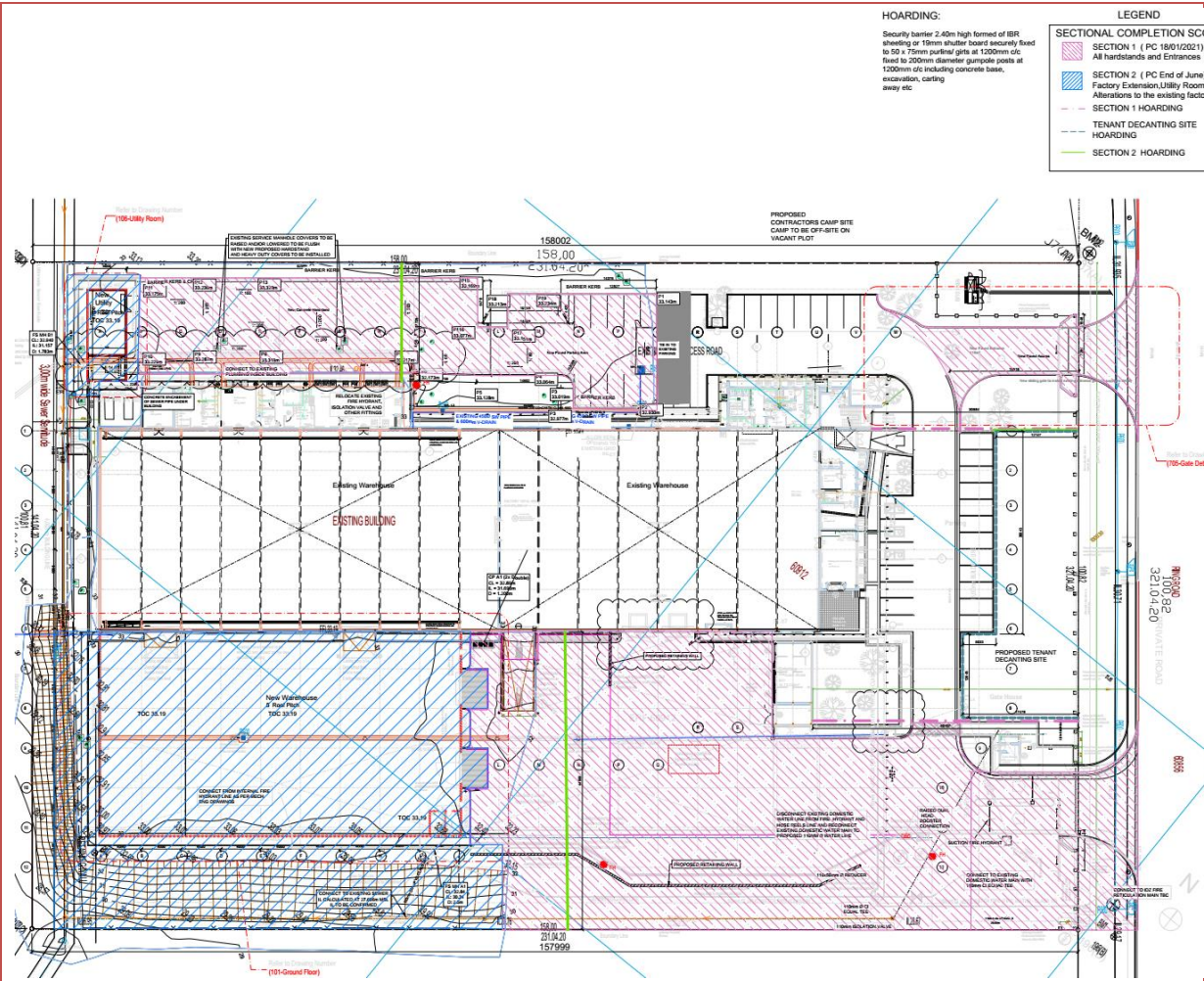
2 CONSTRUCTION PROGRAMME

2.1 Sectional Completion

In order to meet the tenant's programme, the works will be divided into two discrete sections, each with their own Sectional Completion date. The apportionment of these two sections is described below.

2.2 Sectional Completion Boundaries

Please refer to the following sketch highlighting the Sectional Completion Boundaries.



Sectional Completion Items	Section 1	Section 2	Balance
<u>Factory Building Extension (1703m²)</u>			
Single-story steel-framed Factory Building with a free inside height of 8m to accommodate a 30t Crane with 12m span		✓	
Two Covered Canopies (loading/receiving) at extended Factory Building		✓	

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

EXTENSION TO THE AUTOMOULD MANUFACTURING FACILITY IN ZONE 1A OF THE ELIDZ -
EB/AUT/EXT/10/19/Z1A

1 x Male & 1 x Female Staff Ablutions		✓	
<u>Modifications to the Existing Factory</u>			
Removal of sky-lights		✓	
Improvement to lighting levels		✓	
Installation of smoke extraction		✓	
<u>Utility Building (83m²)</u>			
Storage Room		✓	
Wash Bay		✓	
Paved areas	✓		

2.4 Sectional Completion Dates

- Refer to ENVELOPE B
- Part C1.1: CONTRACT DATA – EMPLOYER
- Item 4.2

C3.2: PARTICULAR SPECIFICATIONS: CONSTRUCTION WORKS

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

C3.2: Particular Specifications



CONTRACT NO: EB/AUT/EX/10/19/Z1A

**EXTENSION TO THE AUTOMOULD MANUFACTURING FACILITY IN
ZONE 1A OF THE ELIDZ**

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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.

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

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.
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

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

- 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.

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

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.

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

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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

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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.

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- 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.
- 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.

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- 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.
- 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.

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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.
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:

1. All structural steelwork shall be fabricated and erected in accordance with SANS 1200 H (Structural steelwork) and SANS 10162 (Structural use of Steel).
2. 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.
3. 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.
4. 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.
5. 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

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- be checked also with regard to design intent. Final dimensions and the correct fitting of members shall remain the responsibility of the contractor.
6. 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.
 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.

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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.
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.

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

- 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.
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.

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

- 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.
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	Plascon Plascotuff	Solvent based	5

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)
		plus hot dip galvanized structural steel going into the ground	Epoxy Coal Tar		
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
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.

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

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**

C3.3: Health and Safety Specification



**Issued in terms of the Occupational Health and Safety Act, 1993
Construction regulations 2014**

CONTRACT NO: EB/AUT/EXT/10/19/Z1A

**EXTENSION TO THE AUTOMOULD MANUFACTURING FACILITY IN
ZONE 1A OF THE ELIDZ**

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East London IDZ SOC Ltd Contact person: Nwabisa Boya Fax No: 086 605 0942 Email: nwabisab@elidz.co.za	
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Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____

1 DEFINITIONS

For the purpose of the General Health and Safety Specification, the abbreviations or definitions given hereunder shall apply:

“Agent” means any person who acts as a representative for a client in managing the overall construction work;

“angle of repose” means the steepest angle of a surface at which a mass of loose or fragmented material will remain stationary in a pile on a surface, rather than sliding or crumbling away;

“Batch plant” means machinery, appliances or other similar devices that are assembled in such a manner so as to be able to mix materials in bulk for the purposes of using the mixed product for construction work;

“Client” means any person for whom construction work is performed;

“competent person” in relation to construction work, means any person having the knowledge, training and experience specific to the work or task being performed: Provided that where appropriate qualifications and training are registered in terms of the provisions of the South African Qualifications Authority Act, 1995 (Act No. 58 of 1995), these qualifications and training shall be deemed to be the required qualifications and training;

“Construction work” means any work in connection with:

- a) The erection, maintenance, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure;
- b) The installation, erection, dismantling or maintenance of a fixed plant where such work includes the risk of a person falling;
- c) the construction, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system or any similar civil engineering structure; or
- d) the moving of earth, clearing of land, the making of an excavation, piling, or any similar type of work;

“construction vehicle” means a vehicle used for means of conveyance for transporting persons or material or both such persons and material, as the case may be, both on and off the construction site for the purposes of performing construction work;

“Contractor” means an employer, as defined in section 1 of the Act, who performs construction work and includes principal contractors;

“Design” in relation to any structure includes drawings, calculations, design details and specifications;

“Designer” means any person who:

- a) Prepares a design;
- b) Checks and approves a design;
- c) Arranges for any person at work under his control (including an employee of his, where he is the employer) to prepare a design, as well as;
- d) Architects and engineers contributing to, or having overall responsibility for the design;
- e) Build services engineers designing details for fixed plant;
- f) Surveyors specifying articles or drawing up specifications;
- g) Contractors carrying out design work as part of a design and build project;
- h) Temporary works engineer designing formwork and false work; and
- i) Interior designers, shop-fitters and landscape architects.

“ergonomics” means the application of scientific information concerning humans to the design of objects, systems and the environment for human use in order to optimise human well-being and overall system performance;

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

“Excavation work” means the making of any man-made cavity, trench, pit or depression formed by cutting, digging or scooping;

“explosive actuated tool” means a tool that is activated by an explosive charge and that is used for driving bolts, nails and similar objects for the purpose of providing fixing;

“fall prevention equipment” means equipment used to prevent persons from falling from an elevated position, including personal equipment, body harness, body belts, lanyards, lifelines or physical equipment, guardrails, screens, barricades, anchorages or similar equipment;

“fall arrest equipment” means equipment used to arrest the person in a fall from an elevated position, including personal equipment, body harness, lanyards, deceleration devices, lifelines or similar equipment, but excludes body belts;

“fall protection plan” means a documented plan, of all risks relating to working from an elevated position, considering the nature of work undertaken, and setting out the procedures and methods to be applied in order to eliminate the risk;

“Hazard identification” means the identification and documenting of existing or expected hazards to the health and safety of persons, which are normally associated with the type of construction work being executed or to be executed;

“Health and safety file” means a file, or other record in permanent form, containing the information required as contemplated in these regulations;

“Health and safety plan” means a documented plan which addresses hazards identified and includes safe work procedures to mitigate, reduce or control the hazards identified;

“Health and safety specification” means a documented specification of all health and safety requirements pertaining to the associated works on a construction site, so as to ensure the health and safety of persons;

“material hoist” means a hoist used to lower or raise material and equipment, and includes cantilevered platform hoists, mobile hoists, friction drive hoists, scaffold hoists, rack and pinion hoists and combination hoists;

“Medical certificate of fitness” means a certificate valid for one year issued by an occupational health practitioner, issued in terms of these regulations, whom shall be registered with the Health Professions Council of South Africa;

“Safe work procedure” means a written document detailing the key activities to be performed in order to reduce as reasonably as practicable the hazards identified in any risk assessment;

“Mobile plant” means machinery, appliances or other similar devices that is able to move independently, for the purpose of performing construction work on the construction site;

“National Building Regulations” means the National Building Regulations made under section 17(1) of the National Building Regulations and Building Standards Act, 1977 (Act No.103 of 1977), and published under Government Notice No. R.1081 of 10 June 1988, as amended;

“Person day” means one individual carrying out construction work on a construction site for one normal working shift;

“Plant” includes fixtures, fittings, implements, equipment, tools and appliances, and anything which is used for any purpose in connection with such plant.

“Premises” includes any building, vehicle, vessel, train or aircraft.

“principal contractor” means an employer, as defined in section 1 of the Act who performs construction work and is appointed by the client to be in overall control and management of a part of or the whole of a construction site;

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

“professional engineer or professional certificated engineer” means any person holding registration as either a Professional Engineer or Professional Certificated Engineer under the Engineering Profession Act, 2000 (Act No. 46 of 2000);

“Professional technologist” means any person holding registration as a Professional Technologist under the Engineering Profession Act, 2000 (Act No. 46 of 2000);

“Provincial director” means the provincial director as defined in regulation 1 of the General Administrative Regulations under the Act;

“risk assessment” means a programme to determine any risk associated with any hazard at a construction site, in order to identify the steps needed to be taken to remove, reduce or control such hazard;

“Roof apex height” means the dimensional height in meters measured from the lowest ground level abutting any part of a building to the highest point of the roof;

“SANS 085” means the South African National Standards’ Code of Practice entitled “The Design, Erection, Use and Inspection of Access Scaffolding”;

“SANS 0400” means the South African National Standards, Code of Practice for the application of the National Building Regulations;

“SANS EN 1808” means the South African National Standards’ Standard Specification entitled: “Safety requirements on suspended access equipment – Design calculations, stability criteria, construction-tests”;

“SANS 1903” means the South African National Standards’ Standard Front-end Specification entitled: “Safety requirements on suspended access equipment – Design calculations, stability criteria, construction-tests”;

“Scaffold” means any temporary elevated platform and supporting structure used for providing access to and supporting workmen or materials or both;

“shoring” means a structure such as a hydraulic, mechanical or timber/steel shoring system that supports the sides of an excavation and which is intended to prevent the cave-in or the collapse of the sides of an excavation, and “shoring system” has a corresponding meaning;

“Structure” means:

- a) any building, steel or reinforced concrete structure (not being a building), railway line or siding, bridge, waterworks, reservoir, pipe or pipeline, cable, sewer, sewage works, fixed vessels, road, drainage works, earthworks, dam, wall, mast, tower, tower crane, batching plants, pylon, surface and underground tanks, earth retaining structure or any structure designed to preserve or alter any natural feature, and any other similar structure;
- b) any formwork, false work, scaffold or other structure designed or used to provide support or means of access during construction work; or
- c) any fixed plant in respect of work which includes the installation, commissioning, decommissioning or dismantling and where any such work involves a risk of a person falling two meters or more.

“Suspended platform” means a working platform suspended from supports by means of one or more separate ropes from each support;

“The Act” means the Occupational Health and Safety Act, 1993 (Act No. 85 of 1993);

“Tunneling” means the construction of any tunnel beneath the natural surface of the earth for a purpose other than the searching for or winning of a mineral;

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

2 INTRODUCTION

2.1 Introduction to the General Health and Safety Specification

This Health & Safety Specification (HSS) is published in terms of the Occupational Health & Safety Act of 1993 (OHSACT), Construction Regulations 2014.

The HSS (or any project specific version thereof) does not replace the Construction Regulations, 2014, but is a supplementary specification as required in terms of the Regulations. The Principal Contractor will remain responsible to fully address the full Construction Regulations in his Health and Safety Plan and in his implementation thereof.

2.2 Purpose of the Health and Safety Specification

The purpose of the HSS is to provide a standard on which Principal Contractors' H&S Plans must be based. This HSS will be applicable to the construction work proposed at the Manufacturing Facility.

2.3 Implementation of the Occupational Health and Safety Specification

This HSS forms an integral part of the Contract, and Principal Contractors are required to make it an integral part of their contracts with subcontractors and suppliers. The prospective Principal Contractors shall allow in their tenders for the cost of complying with the requirements of the HSS.

Acceptance by the Principal Contractor of the Construction Contract shall constitute acknowledgement that the Principal Contractor has familiarized himself/herself with the content of the HSS and that he/she will comply with all his/her obligations in respect thereof.

3 GENERAL HEALTH AND SAFETY PROVISIONS

3.1 Scope

This HSS covers the general requirements for addressing and mitigating Occupational Health and Safety related problems, incidents and injuries at the proposed MANUFACTURING FACILITY. Facility project. The scope also addresses legal compliance, hazard identification and risk assessment, promoting a health and safety culture amongst those working on this project and those affected by the activities taking place in and around them.

The HSS contains clauses that are generally applicable to construction work and imposes controls associated with activities that impact on human health and safety.

The Principal Contractor shall comply with the provisions of the OHSACT, all applicable Regulations (including the CR) and this HSS. The ELIDZ and / or its agent will monitor the Principal Contractor's compliance with the requirements of the OHSACT and their H&S Plan, but will not be responsible to prescribe to the Principal Contractor how such compliance is to be achieved.

3.2 Scope of Works

The proposed scope of work is the construction of the Manufacturing Facility within the East London Industrial Development Zone.

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

The Principal Contractor shall submit to the ELIDZ or its Agent, within 7 days from confirmation of the contract, proof of registration as an employer with the Department of Labour as well as a letter of good standing from the Compensation Commissioner or similar approved workman's compensation provider.

3.4 Application for Construction Work Permit (CR3)

Where construction work is to be carried out, the client must at least 30 days before that work is to be done, apply to the Department of Labour for a construction work permit to perform construction work if the intended construction work will:

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

- a) Exceed contract value of forty million rand or CIDB grading level 8. (Based upon DOL exemption of 2015-07-07); and
- b) Based upon the project value, it is expected that the Client, will have to submit an application for a construction work permit.

The Provincial director must issue a construction work permit in writing to perform construction work within 30 days of receiving the application and must assign a site-specific number for each construction site.

This site-specific number must be conspicuously displayed at the main entrance to the site for which that number is assigned.

A construction work permit may be granted only if the fully completed documents contemplated in regulation 5(1) (a) and (b) have been submitted and that the client complies with regulation 5(5). Ensure that the principal contractor is registered and in good standing.

The client must ensure that the principal contractor keeps a copy of the construction work permit in the occupational health and safety file for inspection by an inspector, the client's authorized agent or an employee.

No construction work may be commenced or carried out before the construction work permit and number have been issued and assigned.

3.5 Notification of Construction Work (CR 4) – not applicable

After receipt of confirmation of the contract, the Principal Contractor must at least 7 days before that work is to be carried out notify the Provincial Director in writing in a form similar to Annexure 2 of the Construction Regulations if the intended construction work will:

- a) Include excavation work;
- b) Include working at a height where there is a risk of falling;
- c) Include the demolition of a structure; or
- d) Include the use of explosives to perform construction work.

A copy of the notification letter to the Provincial Director must be filed with the H&S Plan.

3.6 Clients Duties (CR5)

A client must prepare a baseline risk assessment for the intended construction work as well as a suitable, sufficiently documented and coherent site specific health and safety specification for the intended construction work based on the baseline risk assessment.

The designer must be provided with the health and safety specification and ensure that the designer takes the prepared health and safety specification into consideration during the design stage.

The health and safety specification must be included in the tender documents.

The principal contractor must be appointed in writing for the project or part thereof. The client must approve the Principal Contractors Health & Safety file before commencement of work.

The client will ensure that periodic health and safety audits and document verification are conducted at intervals mutually agreed upon between the Principal Contractor and any contractor at least once every 30 days. The audit report must be given to the Principal Contractor within seven days after the audit.

The client is to stop any contractor from executing a construction activity which poses a threat to the health and safety of persons which is not in accordance with the client's health and safety specifications and the principal contractors' health and safety plan for the site.

Where changes are brought about to the design or construction work, the client will make sufficient health and safety information and appropriate resources available to the principal contractor to execute the work safely and ensure that the health and safety file is kept and maintained by the principal contractor.

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

The following high level risks and recommended risk controls are of relevance, to the proposed scope of work at this project. The contractor is to include these considerations into the scope of the Health and Safety plan as well as project financial and budget planning.

Risk	Ratings Red and Amber	Controls proposed to contractor
Working at heights - injury fall from height or drop from height: Use of MEWP; Access scaffolding; Roof work; Ladders; High wind; Ceilings, Fire Systems, Plumbing; CCTV; Painting; IT and Telecoms; Lighting; Airconditioners.	Red	Formal safe work procedures are to be determined relative to the process in question. The use of portable ladders, MEWP's, access scaffolding and similar fall protection equipment must be managed by an appointed competent person. The contractor is to determine a suitable fall protection plan and related safe work procedures. Including routine mandated inspections and checklists. Medical fitness to work at heights. (Ladders, MEWP's, fall arrest harnesses, etc) to be inspected as legislated.
Heavy mobile plant and equipment - Injury struck by: struck by; tip load onto	Red	Formal safe work procedures are to be determined relative to the process in question. All employees to wear high visibility vests. Machinery operators to be competent and medically fit. Heavy plant and equipment to be provided with rotating amber lights, back up alarms, audible reverse alarms, etc. Dust suppression to be applied when practicable.
Excavation work injury: Engulfment collapse	Red	Formal safe work procedures are to be determined relative to the process in question. The work areas in question must be clearly and substantially demarcated and barricaded. A suitable safe work procedure must be established and applied. Excavations must be managed by an appointed, competent person. Excavation work must be conducted strictly as per the requirements of the CR.
Use of lifting machinery and equipment - injury struck by load, material and or equipment: Failure and or slew of load	Red	Formal safe work procedures are to be determined relative to the process in question. All lifting machinery and tackle is to be subject to routine inspections by a competent person, as well as annual performance testing. The contractor is to determine a safe work procedure relative to the risks associated with this process. Lifting machinery must strictly comply too the criteria of Driven Machinery Regulation 18 and 19.
Construction vehicles: Motor vehicle accident (MVA) - public and or private road; material and or equipment delivery	Red	Vehicles to be operated by competent personnel, maintained according to manufacturer's requirements. Maintained as per requirements of the NRTA.
Electricity: HV Connections electrocution; LV connections electrocution; Short circuit fire; failure to obtain COC.	Red	Formal safe work procedures are to be determined relative to the process in question. Electrical connections and related work to be conducted by registered competent electrical contractors. Work conducted within HV environment to be conducted by contractors with ESKOM HV regulations competencies. Provision of flash suits, tethers, face shields gloves and related PPE. COC compliance to be confirmed by a competent independant electrical contractor.
Driven machinery (Large plant) - Injury entanglement	Red	Formal safe work procedures are to be determined relative to the process in question. All driven machinery is to be substantially guarded. The plant is to be operated by competent personnel. The plant is to be managed by a competent formally appointed supervisor. All driven machinery, guarding and related is to be routinely inspected and maintained.
Stacking and storage - injury struck by falling material and or equipment: Stack failure of large, bulky, heavy material and or equipment	Red	Appoint a site laydown yard stacking and storage supervisor. Ensure good stacking and storage practices. The stacking and storage of cable reels is to be managed under the control of a stacking supervisor. Stored reels and drum dispensers must be provided with substantial chocks and stored on firm well drained ground.

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

Risk	Ratings Red and Amber	Controls proposed to contractor
Portable electrical machinery - Injury electrocution from damaged connections, janus plugs, wires - electrocution	Red	All portable power driven machinery is to be inventoried, subject to regular routine inspection, maintenance and repairs. When required, suitable eye and face protection is to be provided and worn.
Use of explosive actuated tools - injury penetration	Red	The contractor is to determine a formal safe work procedure for all aspects of this process. Cartridge order, storage and use must be approved by the SAPS Explosives and Firearms section. Cartridges must be stored separately within secure, lock up facilities suitable for such storage. An issue stock register must be strictly maintained. The entire process is to be managed by a competent appointed person. Tool operators must be competent (As defined) As a minimum, suitably specified eye, face, hand and hearing protection must be worn during this process. All tools and related equipment must be routinely maintained and operated as per manufacturer's instructions.
Temporary works - Injury due to failure of temporary works	Red	The contractor is to determine a formal safe work procedure for all aspects of this process. Temporary works to be designed, inspected and supervised by a competent person. The work areas in question must be clearly and substantially demarcated and barricaded. All temporary works is to be designed and managed by a competent person (As defined) Scaffolding to be erected, routinely inspected and maintained by a competent person. The contractor must determine a safe work procedure relative to this process. Employees working at height, to be certified medically fit by an occupational medicine practitioner (As defined)
Vehicle Refueling - pollution spill to ground and or water source	Red	The contractor is to determine a formal safe work procedure for all aspects of this process. The contractor is to confirm the need for permitting and approval of the temporary fuel site with the BCMM Local Authority. Suitable spill containment technologies to be installed. Spill kits and related emergency equipment to be installed. Suitable dispensing nozzles to be installed.
Manual handling - ergonomics: sharp edges; bruises and or contusions, muscle strain; repetitive strain	Amber	The contractor is to determine a formal safe work procedure for all aspects of this process. Suitable PPE is to be provided. As far as possible employees are to assist one another. When practicable, suitable lifting machinery and equipment is to be provided and used.
Fire: Construction vehicles and heavy mobile plant	Amber	The contractor is to determine a formal safe work procedure for all aspects of this process. All mobile plant to be provided with suitable firefighting equipment and or AFFF. Fire systems are to be maintained. Plant is to be operated by competent personnel.
Use of noisy machinery, and or noisy processes - potential noise induced hearing loss (NIHL)	Amber	The contractor is to determine a formal safe work procedure for all aspects of this process. Implementation of a formal hearing conservation programme, to include audiometric screening, provision of hearing protection that is SANS approved. Implementation of a formal medical surveillance control programme.
Working in dusty environment: - potential silicosis	Amber	The contractor is to determine a formal safe work procedure for all aspects of this process. Dust suppression to be applied when practicable. In extreme conditions employees to be provided with respiratory equipment suitable for silica dust control. Baseline medicals are to include spirometric examination of employees.

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

Risk	Ratings Red and Amber	Controls proposed to contractor
Use of hazardous chemical substances (HCS) - illness poisoning	Amber	<p>The contractor is to determine a formal safe work procedure for all aspects of this process.</p> <p>All HCS used on site is to be provided with 16 point MSDS's. Employees are to be provided with and use suitable PPE. Users of HCS must be provided with awareness training re' the health and safety risks of chemical exposure.</p> <p>HCS must be stored within chemical and flammable liquids cabinets and or stores. These are to be in compliance to the requirements of GSR 4 as well as HCSR 9A and 10.</p> <p>Implementation of a formal medical surveillance control programme, inclusive of medical surveillance of all exposed personnel, provision and use of suitable and effective PPE and related engineering controls. Provision and use of suitable and effective PPE and related engineering controls.</p>
Use of portable electrical and hand held power tools: - Driven machinery, injury entanglement; foreign body - eye and or face injury	Amber	<p>The contractor is to determine a formal safe work procedure for all aspects of this process.</p> <p>All moving components of driven machinery are to be substantially guarded and maintained.</p> <p>Machinery must be routinely inspected and maintained.</p> <p>Suitable PPE to be provided and worn, specifically, eye and face protection.</p>
Drill and blast - fly material, injury and or damages, seismic movement, damages	Amber	<p>The contractor is to determine a formal safe work procedure for all aspects of this process.</p> <p>Blasting to be conducted by competent service providers. Blasters and related activities to be approved by the SAPS. No explosives are to be stored on site. A suitable safe work procedure must be established for blasting. This must include notifications to: To the East London Airport; East London Port Control; local bird farm; ELIDZ & the OHS agent.</p>
Material stock pile: Stock pile failure, injury engulfment; tip of bulk material, injury engulfment.	Amber	<p>The contractor is to determine a formal safe work procedure for all aspects of this process.</p> <p>All employees to wear high visibility vests.</p> <p>Machinery operators to be competent and medically fit.</p> <p>Heavy plant and equipment to be provided with rotating amber lights, back up alarms, audible reverse alarms, etc.</p> <p>Dust suppression to be applied when practicable.</p>
Vibratory machinery - ergonomics - injury whole body and or segmental vibration	Amber	<p>The contractor is to determine a formal safe work procedure for all aspects of this process.</p> <p>Ensure that the machinery is well maintained. Employees to wear suitable gloves as well as safety footwear.</p>
Heavy mobile machinery and or equipment - collision with infrastructure and or other machinery and equipment, damages	Amber	<p>The contractor is to determine a formal safe work procedure for all aspects of this process.</p> <p>Vehicles to be operated by competent personnel, maintained according to manufacturer's requirements. Maintained as per requirements of the NRTA.</p>
Use of hand tools - injury struck by	Amber	<p>The contractor is to determine a formal safe work procedure for all aspects of this process.</p> <p>The work areas in question must be clearly and substantially demarcated and barricaded. Hand tools must be well maintained.</p>
Inclement weather - high winds, lightening, excessive rain - injury	Amber	<p>The contractor is to determine a formal safe work procedure for all aspects of this process.</p> <p>The contractor is to purchase an anemometer. A formal safe work procedure must be established relative to high winds, inclement weather and lightening.</p> <p>The use of portable ladders, MEWP's, access scaffolding and similar fall protection equipment must be managed by an appointed competent person. The contractor is to determine a suitable fall protection plan and related safe work procedures. Including routine mandated inspections and checklists.</p>
Plumbing work - illness, exposure to hazardous biological agents (HBA)	Amber	<p>The contractor is to determine a formal safe work procedure for all aspects of this process.</p> <p>Plumbing personnel to be provided with suitable prophylaxis as well as PPE.</p>

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

Risk	Ratings Red and Amber	Controls proposed to contractor
Glazing work - injury lacerations	Amber	The contractor is to determine a formal safe work procedure for all aspects of this process. It may be necessary that specialized tooling be used for large glass. Suitable PPE is to be provided and used. Provision and use of lifting frames, stillage suction cups and similar specialized tooling. Work to be conducted by competent persons.
General on foot access through-out the site - injury slip trip fall	Amber	The contractor is to determine a formal safe work procedure for all aspects of this process. Site housekeeping is to be continuously managed and enforced.

A copy of the full baseline risk assessment is to be provided to the prospective contractors at tender stage

3.7 Designer of Temporary Works (CR6.2)

The designer of temporary works must ensure that all temporary works are adequately designed so that it will be capable of supporting all anticipated vertical and lateral loads that may be applied; the designs of temporary works are done with close reference to the structural design drawings issued by the contractor, and in the event of any uncertainty consult the contractor; all drawings and calculations pertaining to the design of temporary works are kept at the office of the temporary works designer and are made available on request by an inspector and the loads caused by the temporary works and any imposed loads are clearly indicated in the design.

3.8 Principal Contractor's Health & Safety Plan (CR7.1.a)

The principal contractor must 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), 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.

The basic contents proposed are listed below:

- a) General administration
 - Notification of construction work
 - Section 37.2 agreement
 - Registration and good standing with an approved workman's compensation insurer
 - Appointment of the PC
 - List of sub-contractors expected on the project
 - H&S Policy
- b) Risk assessment
 - Assessment methodology
 - A record of risks expected on the project
 - Proposed risk control methods
- c) Safe work procedures
 - To be developed according to identified significant risks
 - To be formally documented
- d) Appointments
 - Records of all appointments applicable to the scope of work and as mandated by the Construction regulations
- e) Training, awareness and competence
 - Competencies of appointees applicable to the scope of work and as mandated by the Construction regulations
 - Records of H&S committee meeting

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

- Records of training
- Records of inductions
- Records of toolbox talks or similar awareness training

f) Emergency preparedness and incident management

- A formal incident reporting, investigation and corrective action procedure to be established
- A formal emergency response plan to be established, in line with the client emergency response plan

g) Monitoring and measurement

- Registers and checklists applicable to safe work procedures and identified risks and as mandated by the Construction regulations.
- H&S Officer Audit templates
- Medicals as mandated by the Construction regulations

3.9 Health & Safety File (CR 7.1.b)

The Principal Contractor must 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 agent or a contractor and on appointing any other contractor, in order to ensure compliance with the provisions of the Act 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.

3.10 Duties of Principal Contractor and contractor (CR7.1.c)

Ensure that potential contractors submitting tenders have made sufficient provision for health and safety measures during the construction process; 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.

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.

The Principal Contractor must appoint each contractor in writing for the part of the project on the construction site.

The Principal Contractor must take reasonable steps to ensure that each contractor's health and safety plan is implemented and maintained on the construction site and 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.

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.

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 discuss and negotiate with the contractor the contents of the health and safety plan and must thereafter finally approve that plan for implementation.

The Principal Contractor must ensure that a copy of his or her health and safety plan as well as the contractor's health and safety plan is available on request to an employee, an inspector, a contractor, the client or the client's agent.

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

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

A principal contractor must take reasonable steps to ensure co-operation between all contractors appointed by the principal contractor to enable each of those contractors to comply with these Regulations.

The Principal Contractor must provide a comprehensive and updated list of all the contractors on site accountable to the principal contractor, the agreements between the parties and the type of work being done and 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.

3.11 Duties of a Contractor (CR7.2)

A contractor must prior to performing any construction work 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 and provided by the principal contractor, 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.

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 agent or the principal contractor.

Before appointing another contractor to perform construction work, the Principal contractor must 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.

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 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.

No contractor may allow or permit any employee or person to enter any site, unless that employee or person has undergone health and safety induction training pertaining to the hazards prevalent on the site at the time of entry.

A contractor must ensure that all visitors to a construction site undergo health and safety induction pertaining to the hazards prevalent on the site and must ensure that such visitors have the necessary personal protective equipment.

A contractor must at all times keep on his or her construction site records of the health and safety induction training and such records must be made available on request to an inspector, the client, the client's agent or the principal contractor.

A contractor must 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.

3.12 Construction Manager (CR8.1)

A principal contractor must in writing appoint one full-time competent person as the construction manager with the duty of managing all the construction work on a single site, including the duty of ensuring occupational health and safety compliance, and in the absence of the construction manager an alternate must be appointed by the principal contractor

3.13 Assistant Construction Manager (CR8.2)

A principal contractor must upon having considered the size of the project, in writing appoint one or more assistant construction managers for different sections thereof: Provided that the designation of any such person does not relieve the construction manager of any personal

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

accountability for failing in his or her management duties in terms of this regulation.

3.14 Health & Safety Officer (CR8.5)

A contractor must, after consultation with the client and having considered the size of the project, the degree of danger likely to be encountered or the accumulation of hazards or risks on the site, appoint a full-time or part-time construction health and safety officer in writing to assist in the control of all health and safety related aspects on the site: Provided that, where the question arises as to whether a construction health and safety officer is necessary, the decision of an inspector is decisive.

No contractor may appoint a construction health and safety officer to assist in the control of health and safety related aspects on the site unless he or she is reasonably satisfied that the construction health and safety officer that he or she intends to appoint is registered with a statutory body approved by the Chief Inspector and has necessary competencies and resources to assist the contractor.

3.15 Construction Supervisor (CR8.7)

A construction manager must in writing appoint construction supervisors responsible for construction activities and ensuring occupational health and safety compliance on the construction site.

No construction supervisor may supervise any construction work on or in any construction site other than the site in respect of which he or she has been appointed.

Provided that if a sufficient number of competent employees have been appropriately designated under sub-regulation (7) on all the relevant construction sites, the appointed construction supervisor may supervise more than one site.

3.16 Assistant Construction Supervisor (CR8.8)

A contractor must, upon having considered the size of the project, in writing appoint one or more competent employees for different sections thereof to assist the construction supervisor, and every such employee has, to the extent clearly defined by the contractor in the letter of appointment, the same duties as the construction supervisor. Provided that the designation of any such employee does not relieve the construction supervisor of any personal accountability for failing in his or her supervisory duties in terms of this regulation.

3.17 Risk Assessment for Construction Work (CR9)

A contractor must, before the commencement of any construction work and during such construction work, have risk assessments performed by a competent person appointed in writing, which risk assessments form part of the health and safety plan to be applied on the site, and must include:

- a) the identification of the risks and hazards to which persons may be exposed to;
- b) an analysis and evaluation of the risks and hazards identified based on a documented method;
- c) a documented plan and applicable safe work procedures to mitigate, reduce or control the risks and hazards that have been identified;
- d) a monitoring plan; and
- e) a review plan.

A contractor must ensure that as far as is reasonably practicable, ergonomic related hazards are analyzed, evaluated and addressed in a risk assessment.

A contractor must ensure that all employees under his or her control are informed, instructed and trained by a competent person regarding any hazard and the related work procedures and or control measures before any work commences, and thereafter at the times determined in the risk assessment monitoring and review plan of the relevant site.

A principal contractor must ensure that all contractors are informed regarding any hazard

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

that is stipulated in the risk assessment before any work commences, and thereafter at the times that may be determined in the risk assessment monitoring and review plan of the relevant site.

A contractor must consult with the health and safety committee or, if no health and safety committee exists, with a representative trade union or representative group of employees, on the monitoring and review of the risk assessments of the relevant site.

A contractor must ensure that copies of the risk assessments of the relevant site are available on site for inspection by an inspector, the client, the client's agent, any contractor, any employee, a representative trade union, a health and safety representative or any member of the health and safety committee.

A contractor must review the relevant risk assessment:

- a) where changes are effected to the design and or construction that result in a change to the risk profile; or
- b) when an incident has occurred

3.18 Health & Safety Representative (OHSACT S17)

Subject to the provisions of subsection (2), every employer who has more than 20 employees in his employment at any workplace, shall, within four months after the commencement of this Act or after commencing business, or from such time as the number of employees exceeds 20, as the case may be, designate in writing for a specified period health and safety representatives for such workplace, or for different sections thereof.

An employer and the representatives of his employees recognized by him or, where there are no such representatives, the employees shall consult in good faith regarding the arrangements and procedures for the nomination or election, period of office and subsequent designation of health and safety representatives in terms of subsection (1): Provided that if such consultation fails, the matter shall be referred for arbitration to a person mutually agreed upon, whose decision shall be final: Provided further that if the parties do not agree within 14 days on an arbitrator, the employer shall give notice to this effect in writing to the President of the Industrial Court, who shall in consultation with the chief inspector designate an arbitrator, whose decision shall be final. [Sub-s. (2) Substituted by s. 4 of Act No. 181 of 1993.]

Arbitration in terms of subsection (2) shall not be subject to the provisions of the Arbitration Act, 1965 (Act No. 42 of 1965), and a failure of the consultation contemplated in that subsection shall not be deemed to be a dispute in terms of the Labour Relations Act, 1956 (Act No. 28 of 1956): Provided that the Minister may prescribe the manner of arbitration and the remuneration of the arbitrator designated by the President of the Industrial Court. [Sub-s. (3) Substituted by s. 4 of Act No. 181 of 1993.]

Only those employees employed in a full-time capacity at a specific workplace and who are acquainted with conditions and activities at that workplace or section thereof, as the case may be, shall be eligible for designation as health and safety representatives for that workplace or section.

The number of health and safety representatives for a workplace or section thereof shall in the case of shops and offices be at least one health and safety representative for every 100 employees or part thereof, and in the case of all other workplaces at least one health and safety representative for every 50 employees or part thereof: Provided that those employees performing work at a workplace other than that where they ordinarily report for duty, shall be deemed to be working at the workplace where they so report for duty.

If an inspector is of the opinion that the number of health and safety representatives for any workplace or section thereof, including a workplace or section with 20 or fewer employees, is inadequate, he may by notice in writing direct the employer to designate such number of employees as the inspector may determine as health and safety representatives for that

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

workplace or section thereof in accordance with the arrangements and procedures referred to in subsection (2).

All activities in connection with the designation, functions and training of health and safety representatives shall be performed during ordinary working hours, and any time reasonably spent by any employee in this regard shall for all purposes be deemed to be time spent by him in the carrying out of his duties as an employee.

3.19 Functions of the Health & Safety Representatives (OHSACT S18)

A health and safety representative may perform the following functions in respect of the workplace or section of the workplace for which he has been designated, namely:

- a) review the effectiveness of health and safety measures;
- b) identify potential hazards and potential major incidents at the workplace;
- c) in collaboration with his employer, examine the causes of incidents at the workplace;
- d) investigate complaints by any employee relating to that employee's health or safety at work;
- e) make representations to the employer or a health and safety committee on matters arising from paragraphs (a), (b), (c) or (d), or where such representations are unsuccessful, to an inspector;
- f) make representations to the employer on general matters affecting the health or safety of the employees at the workplace;
- g) inspect the workplace, including any article, substance, plant, machinery or health and safety equipment at that workplace with a view to, the health and safety of employees, at such intervals as may be agreed upon with the employer: Provided that the health and safety representative shall give reasonable notice of his intention to carry out such an inspection to the employer, who may be present during the inspection;
- h) participate in consultations with inspectors at the workplace and accompany inspectors on inspections of the workplace;
- i) receive information from inspectors as contemplated in section 36; and
- j) In his capacity as a health and safety representative attend meetings of the health and safety committee of which he is a member, in connection with any of the above functions.

A health and safety representative shall, in respect of the workplace or section of the workplace for which he has been designated be entitled to:

- a) visit the site of an incident at all reasonable times and attend any inspection in loco;
- b) attend any investigation or formal inquiry held in terms of this Act;
- c) in so far as it is reasonably necessary for performing his functions, inspect any document which the employer is required to keep in terms of this Act;
- d) accompany an inspector on any inspection;
- e) with the approval of the employer (which approval shall not be unreasonably withheld), be accompanied by a technical adviser, on any inspection; and
- f) An employer shall provide such facilities, assistance and training as a health and safety representative may reasonably require and as have been agreed upon for the carrying out of his functions.

A health and safety representative shall not incur any civil liability by reason of the fact only that he failed to do anything which he may do or is required to do in terms of this Act.

3.20 Health & Safety Committees (OHSACT S19)

An employer shall in respect of each workplace where two or more health and safety representatives have been designated, establish one or more health and safety committees and, at every meeting of such a committee as contemplated in subsection (4), consult with the committee with a view to initiating, developing, promoting, maintaining and reviewing measures to ensure the health and safety of his employees at work.

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

A health and safety committee shall consist of such number of members as the employer may from time to time determine: Provided that:

- a) if one health and safety committee has been established in respect of a workplace, all the health and safety representatives for that workplace shall be members of the committee;
- b) if two or more health and safety committees have been established in respect of a workplace, each health and safety representative for that workplace shall be a member of at least one of those committees; and
- c) The number of persons nominated by an employer on any health and safety committee established in terms of this section shall not exceed the number of health and safety representatives on that committee.

The persons nominated by an employer on a health and safety committee shall be designated in writing by the employer for such period as may be determined by him, while the health and safety representatives shall be members of the committee for the period of their designation in terms of section 17 (1).

A health and safety committee shall hold meetings as often as may be necessary, but at least once every three months, at a time and place determined by the committee: Provided that an inspector may by notice in writing direct the members of a health and safety committee to hold a meeting at a time and place determined by him: Provided further that, if more than 10 per cent of the employees at a specific workplace has handed a written request to an inspector, the inspector may by written notice direct that such a meeting be held.

The procedure at meetings of a health and safety committee shall be determined by the committee.

- a) A health and safety committee may co-opt one or more persons by reason of his or their particular knowledge of health or safety matters as an advisory member or as advisory members of the committee.
- b) An advisory member shall not be entitled to vote on any matter before the committee.

If an inspector is of the opinion that the number of health and safety committees established for any particular workplace is inadequate, he may in writing direct the employer to establish for such workplace such number of health and safety committees as the inspector may determine.

3.21 Functions of the Health & Safety Committee (OHSACT S20)

A health and safety committee:

- a) may make recommendations to the employer or, where the recommendations fail to resolve the matter, to an inspector regarding any matter affecting the health or safety of persons at the workplace or any section thereof for which such committee has been established;
- b) shall discuss any incident at the workplace or section thereof in which or in consequence of which any person was injured, became ill or died, and may in writing report on the incident to an inspector; and
- c) Shall perform such other functions as may be prescribed.

A health and safety committee shall keep record of each recommendation made to an employer in terms of subsection (1) (a) and of any report made to an inspector in terms of subsection (1) (b).

A health and safety committee or a member thereof shall not incur any civil liability by reason of the fact only that it or he failed to do anything which it or he may or is required to do in terms of this Act.

An employer shall take the prescribed steps to ensure that a health and safety committee complies with the provisions of section 19 (4) and performs the duties assigned to it by

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

subsections (1) and (2).

3.22 Induction

The Principal Contractor must develop a job- or project-specific induction course in health and safety. The Principal Contractor shall ensure that all employees under his control have gone through the induction course before commencing duties on site.

The Principal Contractor shall keep in the health and safety file, a copy of the attendance register of all employees who attended the induction course. The content of the induction course must be submitted as part of the H&S Plan to the Directorate or its Agent for approval, prior to the site being handed over to the Principal Contractor.

3.23 Health & Safety Training

The Principal Contractor shall arrange for health and safety talks or training to be given on site before any hazardous work takes place. The talks or training shall cover the relevant activity and an attendance register must be kept and signed by all attendees. The register of attendees and the content of the topic shall be kept on the site health and safety file as evidence of on-going training. The Principal Contractor must submit as part of his H&S Plan the list of hazardous works to be covered by these talks or training.

3.24 General Inspection and Monitoring

The Principal Contractor shall carry out daily safety inspections on the site (or more frequent, where so required in the Regulations), and shall take steps to rectify any unsafe condition of which he is aware.

It is expected that the appointed Occupational Health and safety agent will conduct at least one full audit once every 30 days. In addition, routine site inspections, non-conformity reports and similar monitoring functions will also be conducted by the Occupational Health and safety agent.

The following monitoring interventions, amongst others may be of relevance:

- a) Accident/Incident Register (Annexure 1 of the General Administrative Regulations);
- b) OH&S Representatives Inspection Register;
- c) Asbestos Demolition & Stripping Register;
- d) Batch Plant Inspections;
- e) Construction Vehicles & Mobile Plant Inspections by Controller;
- f) Daily Inspection of Vehicles. Plant and other Equipment by the operator/Driver/User;
- g) Demolition Inspection Register;
- h) Designer's Inspection of Structures Record;
- i) Electrical Installations, -Equipment & -Appliances (including Portable Electrical Tools);
- j) Excavations Inspection;
- k) Explosive Powered Tool Inspection/Maintenance/Issue>Returns Register (incl. cartridges & nails);
- l) Fall Protection Inspection Register;
- m) First Aid Box Contents;
- n) Fire Equipment Inspection & Maintenance;
- o) Formwork & Support work Inspections;
- p) Hazardous Chemical Substances Record;
- q) Ladder Inspections;
- r) Lifting Equipment Register;
- s) Materials Hoist Inspection Register;
- t) Machinery Safety Inspection Register (incl. machine guards, lock-outs etc.);
- u) Scaffolding Inspections;
- v) Stacking & Storage Inspection;
- w) Inspection of Structures;
- x) Inspection of Suspended Platforms;

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

- y) Inspection of Tunneling Operations;
- z) Inspection of Vessels under Pressure;
- aa) Welding Equipment Inspections;
- bb) Oxy-Acetylene equipment inspections;
- cc) Inspection of Work conducted on or Near Water

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:

- a) 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;
- b) 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;
- c) 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);
- d) Unconsciousness, irrespective of duration, resulting from workplace exposure or incident;
- e) Occupational illness which necessitates medical treatment resulting in restricted duties; and
- f) 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;

- a) *Disabling Injury Frequency Rate (DIFR)* =
$$\frac{(\text{Number of Disabling injury cases}) \times 200\,000}{\text{Number of man-hours worked}}$$
- b) *First Aid Treatment Frequency Rate (FTFR)* =
$$\frac{\text{Number of First aid treatments} \times 200\,000}{\text{Number of Man-hours}}$$
- d) *Fatality Frequency Rate (FFR)* =
$$\frac{(\text{Number of fatalities}) \times 200\,000}{\text{Number of Man-hours worked}}$$

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

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 Health and Safety

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

Agent.

3.25 Non-conformities and corrective actions

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

No #	Finding	OBS/NC/MNC	Proposed action	Deadline date	Action taken by contractor, (to be listed here by the contractor)
OBS = an observation. Physical defects, potential non-conformity, unclear information. NC = Non-Conformity. A deviation from a requirement of the OHS plan and or related legislation. Defined as any deviation from work standards, practices, procedures, regulations, management system performance etc. that could lead either directly or indirectly lead to injury or illness, property damage, damage to the workplace environment, or a combination of these. A non-fulfillment of a requirement MNC = Major non-conformity. System failures, absence of mandatory procedures, major legal non-compliance, cluster of minor non-conformances, elevation of minor non-conformance due to lack of action.					
1	Logged by OHS agent	Positive finding	Logged by OHS agent	Logged by OHS agent	<u>Logged by Contractor</u>
2	Logged by OHS agent	Positive finding	Logged by OHS agent	Logged by OHS agent	<u>Logged by Contractor</u>

3.26 Penalties

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 safe work procedures.	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

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

Minor: Penalty: R50/count	Medium: Penalty: R200/count or non- conformance	Severe Penalty: R5000/count, non- conformance and/or activity stoppage
	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.

The Contractor shall be penalized R1,000.00 for commencing works on site without requisite approved safe working procedures.

The Contractor shall be penalized R200.00 for each day on which work continues without requisite approved safe work procedures.

Penalties arising out of lack of safe work procedures shall be deductible from monthly payment certificates.

3.27 First Aid, Emergency Equipment, incident recording, reporting and investigation (GSR3)

The Principal Contractor shall submit a detailed Emergency Procedure as part of his H&S Plan. The procedure shall detail the following:

- List of key personnel,
- A contact list of all local emergency service providers (Fire department, Ambulance, Police, Medical and Hospital, etc.) must be maintained and be available to site personnel.
- Actions or steps to be taken in the event of the emergency; and
- Information on any hazardous material and its situation on the site
- Information on hazardous material's potential impact or risk on the environment or to humans, and measures to be taken in the event of an accident.

Emergency procedure(s) shall include, but not be limited to, fire, spills, accidents to employees and injury resulting from the use of hazardous substances, etc.

In the event of an emergency arising, the Principal Contractor shall advise the Directorate or its Agent in writing of the incident, together with a record of any action taken, within 24 hours of the emergency occurring.

An employer shall take all reasonable steps that are necessary under the circumstances, to ensure that persons at work receive prompt first aid treatment in case of injury or emergency.

Where more than five employees are employed at a workplace, the employer of such employees shall provide a first aid box or boxes at or near the workplace which shall be available and accessible for the treatment of injured persons at that workplace.

Taking into account the type of injuries that are likely to occur at a workplace, the nature of the activities performed and the number of employees employed at such workplace, the employer shall make sure that the first aid box or boxes contain suitable first aid equipment which include at least the equipment listed in the Annexure hereto.

Such an employer shall make sure that only article and equipment or other similar equipment or medicine is kept in the first aid box or boxes.

Where more than 10 employees are employed at a workplace, the employer of such employees shall take steps to ensure that for every group of up to 50 employees at that workplace, or in the case of a shop or an office as contemplated in the Basic Conditions of employment Act, 1983 (Act No. 3 of 1983), for every group of up to 100 employees, at least one person is readily available during normal working hours, who is in possession of a valid certificate of competency in first aid, issued by:

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

- a) the SA Red Cross Society;
- b) the St. John Ambulance;
- c) the SA First Aid League; or
- d) A person or organisation approved by the chief inspector for this purpose.

An employer shall at a workplace where a high risk substance or toxic, corrosive or similar hazardous substances are used, handled, processed or manufactured, ensure that the first aid worker is trained in the first aid procedures that are necessary for the treatment of injuries that may result from such activities, including the acute detrimental effects of exposure to such substances, and in the emergency procedures which are necessary in the case of accidental leakage or dumping of such substances.

An employer shall affix a prominent notice or sign in a conspicuous place at a workplace, indicating where the first aid box or boxes are kept as well as the name of the person in charge of such first aid box or boxes.

An employee with an open wound, cut, sore or any similar injury, who works in a workplace where a substance is used, handled, processed or manufactured, shall report such injury to his employer forthwith. The employer may not permit such employee to continue working before the injury has been cleaned with soap and water or with a diluted disinfectant.

Where an employee is exposed or can be exposed to a potential hazard of injury to the eye through contact with a biological or chemical substance, the employer concerned shall make sure that there is an eyewash fountain or any similar facilities, in the immediate vicinity of the workplace of such employee and that the employee is trained in the use thereof.

Where an employee at a workplace is exposed or can be exposed to a potential hazard of injury to or absorption through the skin as a result of sudden contact with a large amount of toxic, corrosive, high risk or similar hazardous substance, the employer concerned shall make sure that there is a fast-reacting deluge-shower with clean water or a similar facility in the immediate vicinity of the workplace of such employee and that the employee is trained in the use thereof.

3.28 Minimum contents of a First Aid Box

In the case of shops and offices, the quantities stated under items 1, 8, 9, 10, 14, 15, 17, and 18 may be reduced by half.

Item 1	Wound cleaner / antiseptic (100ml)
Item 2	Swabs for cleaning wounds
Item 3	Cotton wool for padding (100g)
Item 4	Sterile gauze (minimum quantity 10)
Item 5	1 pair of forceps (for splinters)
Item 6	1 pair of scissors (minimum size 100mm)
Item 7	1 set of safety pins
Item 8	4 triangular bandages
Item 9	4 roller bandages (75mm x 5m)
Item 10	4 roller bandages (100mm x 5m)
Item 11	1 roll of elastic adhesive (25mm x 3m)
Item 12	1 Non-allergenic adhesive strip (25mm x 3m)
Item 13	1 Packet of adhesive dressing strips (minimum quantity 10 assorted sizes)
Item 14	4 First aid dressing (75mm x 100mm)
Item 15	4 First aid dressings (150mm x 200mm)
Item 16	2 Straight splints
Item 17	2 Pairs large and 2 pairs medium disposable latex gloves
Item 18	2 CPR mouth pieces or similar devices

3.29 Reporting of Incidents and Occupational Diseases (GAR8)

An employer or user, as the case may be, shall:

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

- a) within seven days of any incident referred to in section 24(1)(a) of the Act, give notice thereof to the provincial director in the form of WCL1 or WCL 2; and
- b) where a person, in consequence of such an incident, dies, becomes unconscious, suffers the loss of a limb or part of a limb, or is otherwise injured or becomes ill to such a degree that he or she is likely either to die or to suffer a permanent physical defect, such incident, including any other incident contemplated in section 24(1)(b) and (c) of the Act, shall forthwith also be reported to the provincial director by telephone, facsimile or similar means of communication.

If an injured person dies after notice of the incident in which he or she was injured was given in terms of sub-regulation (1), the employer or user, as the case may be, shall forthwith notify the provincial director of his or her death.

Whenever an incident arising out of or in connection with the activities of persons at work occur to persons other than employees, the user, employer or self-employed person, as the case may be, shall forthwith notify the provincial director by facsimile or similar means of communication as to the:

- a) name of the injured person;
- b) address of the injured person;
- c) name of the user, employer or self-employed person;
- d) address of the user, employer or self-employed person;
- e) telephone number of the user, employer or self-employed person;
- f) name of contact person;
- g) details of incident:
 - o What happened?
 - o Where it happened (place);
 - o When it happened (date and time);
 - o How it happened;
 - o Why it happened; and
- h) Names of witnesses.

Any registered medical practitioner shall, within 14 days of the examination or treatment of a person for a disease contemplated in section 25 of the Act, give notice thereof to the chief inspector and the employer in the form of WCL 22.

Any other person not contemplated in this regulation may in writing give notice of any disease contemplated in section 25 of the Act, to the employer and chief inspector.

3.30 Recording and Investigation of Incidents

An employer or user shall keep at a workplace or section of a workplace, as the case may be, a record in the form of Annexure 1 for a period of at least three years, which record shall be open for inspection by an inspector, of all incidents which he or she is required to report in terms of section 24 of the Act and also of any other incident which resulted in the person concerned having had to receive medical treatment other than first aid.

An employer or user shall cause every incident which must be recorded in terms of sub regulation (1), to be investigated by the employer, a person appointed by him or her, by a health and safety representative or a member of a health and safety committee within 7 days from the date of the incident and finalised as soon as is reasonably practicable, or within the contracted period in the case of contracted workers.

The employer or user shall cause the findings of the investigation contemplated in sub regulation (2) to be entered in Annexure 1 immediately after completion of such investigation.

An employer shall cause every record contemplated in sub regulation (1) to be examined by the health and safety committee for that workplace or section of the workplace at its next meeting and shall ensure that necessary actions, as may be reasonable practicable, are implemented and followed up to prevent the recurrence of such incident.

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

3.31 Personal Protective Equipment

The Principal Contractor shall ensure that all workers are issued with, and wear, appropriate PPE including Hard Hats, Steel-Toe Safety Shoes and Overalls. The Principal Contractor shall make provision for, and keep adequate quantities of, SABS-approved PPE or clothing on site at all times.

This procedure must be included in the H&S Plan. A copy of the register of PPE issues must be filed with the H&S Plan.

3.32 Display of Occupational Health & Safety Signs and Notices (GSR2.b)

If the provisions of any regulation prescribe a particular notice or sign to be displayed by an employer or by a user at a workplace, the employer or user may, in lieu thereof, display a corresponding symbolic sign, as contained in a safety standard incorporated for this purpose into these regulations under section 44 of the Act, in which case the employer or user shall be deemed to have complied with such provisions.

The Principal Contractor shall erect and maintain on site symbolic safety signage and notices that conform to the SABS requirements. The signage shall include, but not be limited to:

- a) Hard Hat Area
- b) Safety Shoes to be worn
- c) Dust Masks or Respirators in areas where there might be exposure to airborne pollutants
- d) Ear plugs or Muffs where there might be noise exposure over the safe limit
- e) Gloves; Safety Goggles; Safety Harness, etc.

3.33 Intoxication (GSR2.a)

An employer or a user, as the case may be, shall not permit any person who is or who appears to be under the influence of intoxicating liquor or drugs, to enter or remain at a workplace.

No person at a workplace shall be under the influence of or have in his or her possession or partake of or offer any other person intoxicating liquor or drugs.

An employer or a user, as the case may be, shall, in the case where a person is taking medicines, only allow such person to perform duties at the workplace if the side effects of such medicine do not constitute a threat to the health or safety of the person concerned or other persons at such workplace.

4 OCCUPATIONAL HEALTH AND SAFETY

4.1 Fall Protection (CR10)

A contractor must designate a competent person to be responsible for the preparation of a fall protection plan and ensure that the fall protection plan is implemented, amended where and when necessary and maintained as required and take steps to ensure continued adherence to the fall protection plan.

A fall protection plan must include a risk assessment of all work carried out from a fall risk position and the procedures and methods used to address all the risks identified per location, the processes for the evaluation of the employees' medical fitness necessary to work at a fall risk position and the records thereof.

A programme for the training of employees working from a fall risk position and the records thereof, the procedure addressing the inspection, testing and maintenance of all fall protection equipment; and a rescue plan detailing the necessary procedure, personnel and suitable equipment required to affect a rescue of a person in the event of a fall incident to ensure that the rescue procedure is implemented immediately following the incident.

A contractor must ensure that a construction manager appointed under regulation 8(1) is in

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

possession of the most recently updated version of the fall protection plan.

A contractor must ensure that all unprotected openings in floors, edges, slabs, hatchways and stairways are adequately guarded, fenced or barricaded or that similar means are used to safeguard any person from falling through such openings. No person is required to work in a fall risk position; unless such work is performed safely.

Fall prevention and fall arrest equipment is approved as suitable and of sufficient strength for the purpose for which they are being used, having regard to the work being carried out and the load, including any person, they are intended to bear; and securely attached to a structure or plant, and the structure or plant and the means of attachment thereto are suitable and of sufficient strength and stability for the purpose of safely supporting the equipment and any person who could fall.

Fall arrest equipment is used only where it is not reasonably practicable to use fall prevention equipment.

Where roof work is being performed on a construction site, the contractor must ensure that it is indicated in the fall protection plan that:

- a) the roof work has been properly planned
- b) the roof erectors are competent to carry out the work;
- c) no employee is permitted to work on roofs during inclement weather conditions or if any conditions are hazardous to the health and safety of the employee;
- d) all covers to openings and fragile material are of sufficient strength to withstand any imposed loads;
- e) suitable and sufficient platforms, coverings or other similar means of support have been provided to be used in such a way that the weight of any person passing across or working on or from fragile material is supported; and
- f) Suitable and sufficient guard-rails, barriers and toe-boards or other similar means of protection prevent, as far as is reasonably practicable, the fall of any person, material or equipment.

4.2 Structures (CR11)

A contractor must ensure that all reasonably practicable steps are taken to prevent the uncontrolled collapse of any new or existing structure or any part thereof, which may become unstable or is in a temporary state of weakness or instability due to the carrying out of construction work. No structure or part of a structure is loaded in a manner which would render it unsafe; and all drawings pertaining to the design of the relevant structure are kept on site and are available on request to an inspector, other contractors, the client and the client's agent or employee.

4.3 Temporary Works (CR12) (Previously Formwork and Support work)

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.

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

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 if, after erection, any temporary works structure is found to be damaged or weakened to such a degree that its integrity is affected, it is safely removed or reinforced immediately and adequate precautionary measures are taken in order to:

- a) secure any deck panels against displacement;
- b) prevent any person from slipping on temporary works due to the application of release agents; and
- c) the health of any person is not affected through the use of solvents or oils or any other similar substances.

Upon casting concrete, the temporary works structure is left in place until the concrete has acquired sufficient strength to safely support its own weight and any imposed load, and is not removed until authorization in writing has been given by the competent person. The foundation conditions are suitable to withstand the loads caused by the temporary works structure and any imposed load in accordance with the temporary works design.

The contractor must ensure provision is made for safe access by means of secured ladders or staircases for all work to be carried out above the foundation bearing level. A temporary works drawing or any other relevant document includes construction sequences and methods statements.

The contractor must ensure that the temporary works designer has been issued with the latest revision of any relevant structural design drawing; a temporary works design and drawing is used only for its intended purpose and for a specific portion of a construction site and the temporary works drawings are approved by the temporary works designer before the erection of any temporary works.

No contractor may use a temporary works design and drawing for any works other than its intended purpose.

4.4 Excavations (CR13)

A contractor must ensure that all excavation work is carried out under the supervision of a competent person who has been appointed in writing for that purpose.

A contractor must evaluate, as far as is reasonably practicable, the stability of the ground before excavation work begins.

A contractor who performs excavation work must take reasonable 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 and may 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:

- a) the sides of the excavation are sloped to at least the maximum angle of repose measured relative to the horizontal plane; or
- b) such an excavation is in stable material:

Provided that:

- a) permission has been given in writing by the appointed competent person 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 is decisive and such a decision must be noted in writing and signed by both the competent person and the professional engineer or technologist, as the case may be.

The contractor must take steps to ensure that the shoring or bracing is designed and constructed in a manner that renders it strong enough to support the sides of the excavation in question and must ensure that no load, material plant or equipment is placed or moved near the edge of any excavation where it may cause its collapse and consequently endangers the safety of any person, unless precautions such as the provision of sufficient and suitable shoring or bracing are taken to prevent the sides from collapsing.

The contractor must ensure that where the stability of an adjoining building, structure or road is likely to be affected by the making of an excavation, steps are taken to ensure the stability of such building, structure or road and the safety of persons and must cause convenient and safe means of access to be provided to every excavation in which persons are required to work, and such access may not be further than six meters from the point where any worker within the excavation is working.

The contractor must 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 must before the commencement of excavation work that may affect any such service, take the steps that are necessary to render the circumstances safe for all persons involved.

The contractor must ensure that every excavation, including all bracing and shoring, is inspected:

- a) daily, prior to the commencement of each shift;
- b) after every blasting operation;
- c) after an unexpected fall of ground;
- d) after damage to supports; and
- e) after rain,

by the competent person, in order to ensure the safety of the excavation and of persons, and those results must be recorded in a register kept on site and made available on request to an inspector, the client, the client's agent, any other contractor or any employee.

The contractor must cause every excavation which is accessible to the public or which is adjacent to public roads or thoroughfares, or whereby the safety of persons may be endangered, to be adequately protected by a barrier or fence of at least one meter in height and as close to the excavation as is practicable and provided with warning illuminants or any other clearly visible boundary indicators at night or when visibility is poor, or have resort to any other suitable and sufficient precautionary measure.

The contractor must ensure that all precautionary measures stipulated for confined spaces as determined in the General Safety Regulations, 2003, are complied with by any person entering any excavation.

4.5 Drill and Blast

Where the excavation work involves the use of explosives, the contractor must appointment a competent person in the use of explosives for excavation, and must ensure that a safe work procedure is developed by that person in accordance with the applicable explosives legislation and must cause warning signs to be positioned next to an excavation within which or where persons are working or carrying out inspections or tests.

The contractor is to determine a formal safe work procedure for all aspects of this process.

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

Blasting to be conducted by competent service providers. Blasters and related activities to be approved by the SAPS. No explosives are to be stored on site. A suitable safe work procedure must be established for blasting. This must include notifications to: To the East London Airport; East London Port Control; local bird farm; ELIDZ & the OHS agent.

4.6 Demolition Work (CR14) – if applicable

A contractor must appoint a competent person in writing to supervise and control all demolition work on site.

A contractor must ensure that before any demolition work is carried out, and in order 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 safe work procedure on the procedure to be followed in demolishing the structure is developed by that person.

During a demolition, the competent person must check the structural integrity of the structure at intervals determined in the safe work procedure in order to avoid any premature collapses.

A contractor who performs demolition work must 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, that 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 other means that may be necessary to prevent the accidental collapse of any part of the structure or adjoining structure.

A contractor must ensure that no person works under overhanging material or a structure which has not been adequately supported, shored or braced and ensure that any support, shoring or bracing is designed and constructed so that it is strong enough to support the overhanging material.

Where the stability of an adjoining building, structure or road is likely to be affected by demolition work on a structure, take steps 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 any way be affected by the work to be performed, and must before the commencement of demolition work that may affect any such service, take the steps that are necessary to render circumstances safe for all persons involved.

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 and 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.

A contractor must ensure that no material is dropped to any point, which falls outside the exterior walls of the structure, unless the area is effectively protected.

No person may dispose of waste and debris 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 discharges into a container or an enclosed area surrounded by barriers.

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

A contractor must 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.

A contractor must ensure that no equipment is used on floors or working surfaces, unless such floors or surfaces are of sufficient strength to support the imposed loads.

Where a risk assessment indicates the presence of asbestos, a contractor must ensure that all asbestos related work is conducted in accordance with the Asbestos Regulations, 2001, promulgated by Government Notice No. R. 155 of 10 February 2002.

Where a risk assessment indicates the presence of lead, a contractor must ensure that all lead related work is conducted in accordance with the Lead Regulations, 2001, promulgated by Government Notice No. R.236 of 28 February 2002.

Where the demolition work involves the use of explosives, a safe work procedure must 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 all persons involved in the demolition works must adhere to demolition procedures issued by the appointed person.

A contractor must ensure that all waste and debris are as soon as reasonably practicable removed and disposed of from the site in accordance with the applicable legislation.

4.7 Tunneling (CR15) – if applicable

No person may enter a tunnel, which has a height dimension of less than 800 millimeters.

4.8 Scaffolding (CR16)

A contractor must appoint a competent person in writing who must ensure that all scaffolding work operations are carried out under his or her supervision and that all scaffold erectors, team leaders and inspectors are competent to carry out their work.

A contractor using access scaffolding must ensure that such scaffolding, when in use, complies with the safety standards incorporated for this purpose into these Regulations under section 44 of the Act.

Access scaffolding must be strictly managed in terms of SANS 1085

4.9 Suspended Platforms (CR17)

A contractor must appoint a competent person in writing who must ensure that all suspended platforms work operations are carried out under his or her supervision and that all suspended platform erectors, operators and inspectors are competent to carry out their work.

No contractor may use or permit the use of a suspended platform, unless:

- a) the design, stability and construction thereof comply with the safety standards incorporated for this purpose into these Regulations under section 44 of the Act;
- b) 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
- c) he or she is, before 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 subparagraph (b) and applicable to the environment in which the system is being used, which operational compliance plan must include proof of the:
 - appointment of the competent person
 - competency of erectors, operators and inspectors;
 - operational design calculations, which must comply with the requirements of the system design certificate;
 - performance test results;
 - sketches indicating the completed system with the operational loading capacity of the

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

- platform;
- procedures for and records of inspections having been carried out; and
- Procedures for and records of maintenance work having been carried out.

A contractor making use of a suspended platform system must submit a copy of the certificate of system design contemplated, including a copy of the operational 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 that the system will be used for.

A contractor must submit a copy of the certificate of system design for every new project.

A contractor must ensure that the outriggers of each suspended platform are constructed of material of adequate 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.

A contractor must ensure that the parts of the building or structure on which the outriggers of a suspended platform 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 body harness as a fall prevention device, which must at all times be attached to 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 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 when the working platform is suspended by two ropes only, the connections of the ropes to the working platform are of a height above the level of the working platform to ensure the stability of the working platform.

A contractor must ensure that a suspended platform is suspended as near as possible to the structure to which work is being done to prevent as far as is reasonably practicable horizontal movement away from the face of the structure. Is fitted with anchorage points to which workers must attach the lanyard of the safety harness worn and used by the worker, and such anchorage connections must 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:

- a) the maximum mass load;
- b) the maximum number of persons; and
- c) the maximum total mass load, including load and persons, which the suspended platform can carry.

A contractor must cause the whole installation and all working parts of a suspended platform to be thoroughly examined by a competent person 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 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 must determine the serviceability of the structures, ropes, machinery and safety devices before they are used, every time suspended platforms are erected; and 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.

A contractor must, cause every hoisting rope, hook or other load-attaching device which

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

forms part of the suspended platform to be thoroughly examined in accordance with the manufacturer's specification by the competent person before they are used every time they are assembled, and, in cases of continuous use, at intervals not exceeding three months.

A contractor must ensure that the suspended platform supervisor, or the suspended platform inspector, carries out a daily inspection of all the equipment prior to use, including establishing whether:

- a) all connection bolts are secure;
- b) all safety devices are functioning;
- c) all safety devices are not tampered with or vandalized;
- d) the total maximum mass load of the platform is not exceeded;
- e) the occupants in the suspended platform are using body harnesses which have been properly attached;
- f) there are no visible signs of damage to the equipment; and
- g) all reported operating problems have been attended to.

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

A contractor must ensure that all employees required to work or to be supported on a suspended platform are medically fit to work safely in a fall risk position or such similar environment by being in possession of a medical certificate of fitness. Is competent in conducting work related to suspended platforms safely. Is trained or received training, which includes at least:

- a) how to access and egress the suspended platform safely;
- b) how to correctly operate the controls and safety devices of the equipment;
- c) information on the dangers related to the misuse of safety devices; and
- d) information on the procedures to be followed in the case of:
 - o an emergency;
 - o the malfunctioning of equipment;
 - o the discovery of a suspected defect in the equipment; and
 - o instructions on the proper use of body harnesses.

A contractor must ensure that where the outriggers of a suspended platform are to be moved, only persons trained and under the supervision of the competent person effect such move, within the limitation stipulated in the operational compliance plan, and that the supervisor must carry out an inspection and record the result thereof prior to re-use of the suspended platform.

A contractor must ensure that the suspended platform is properly isolated after use at the end of each working day in such a manner that no part of the suspended platform presents a danger to any person thereafter.

4.10 Rope Work (CR18)

A contractor must appoint a competent person in writing as a rope access supervisor with the duty of supervising all rope access work on the site, including the duty of ensuring occupational health and safety compliance in relation to rope access work. Provided that the appointment of any such person does not relieve the construction manager of any personal accountability for failing in his management duties in terms of this regulation.

A contractor must ensure that all rope access work on the construction site is carried out under the supervision of a competent person; and ensure that all rope access operators are competent and licensed to carry out their work.

No contractor may use or allow the use of rope access work unless the design, selection and use of the equipment and anchors comply with the safety standards incorporated for this purpose into these Regulations under section 44 of the Act and he or she is in possession of a site specific fall protection plan developed by a competent person

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

applicable to the specific work and environment prior to the commencement of the work, including records of maintenance and inspections of all the equipment used for the work operations.

A contractor must ensure that adequate measures are in place to allow rescue procedures to commence immediately in the event of a fall incident taking place.

4.11 Material Hoists (CR20)

A contractor must ensure that every material hoist and its tower have been constructed in accordance with the generally accepted technical standards and are strong enough and free from defects.

A contractor must ensure that the tower of every material hoist is erected on firm foundations and secured to the structure or braced by steel wire guy ropes, and extends to a distance above the highest landing to allow a clear and unobstructed space of at least 900 millimeters for over travel.

Is enclosed on all sides at the bottom, and at all floors where persons are at risk of being struck by moving parts of the hoist, except on the side or sides giving access to the material hoist, with walls or other effective means to a height of at least 2100 millimeters from the ground or floor level and provided with a door or gate at least 2100 millimeters in height at each landing, and that door or gate must be kept closed except when the platform is at rest at such a landing.

A contractor must cause the platform of every material hoist to be designed in a manner that it safely contains the loads being conveyed and that the combined mass of the platform and the load does not exceed the designed lifting capacity of the hoist. The hoisting rope of every material hoist which has a remote winch to be effectively protected from damage by any external cause to the portion of the hoisting rope between the winch and the tower of the hoist and every material hoist to be provided with an efficient brake capable of holding the platform with its maximum load in any position when power is not being supplied to the hoisting machinery.

No contractor may require or permit trucks, barrows or material to be conveyed on the platform of a material hoist and no person may so convey trucks, barrows or material unless those articles are secured or contained in a manner that displacement thereof cannot take place during movement.

A contractor must cause a notice, indicating the maximum mass load which may be carried at any one time and the prohibition of persons from riding on the platform of the material hoist, to be affixed around the base of the tower and at each landing.

A contractor of a material hoist may not require or permit any person to operate a hoist, unless the person is competent in the operation of that hoist. No contractor may require or permit any person to ride on a material hoist.

A contractor must ensure that every material hoist is inspected on daily basis by a competent person appointed in writing by the contractor and such competent person must have the experience pertaining to the erection and maintenance of material hoists or similar machinery. Inspection includes the determination of the serviceability of the entire material hoist, including guides, ropes and their connections, drums, sheaves or pulleys and all safety devices. Inspection results are entered and signed in a record book by a competent person, which book must be kept on the premises for that purpose and is properly maintained and the maintenance records in this regard are kept on site.

4.12 Bulk Mixing Plant (CR20)

A contractor must ensure that the operation of a bulk mixing plant is supervised by a competent person who has been appointed in writing and is aware of all the dangers involved in the operation thereof; and conversant with the precautionary measures to be taken in the interest of health and safety.

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

No person supervising or operating a bulk mixing plant may authorize any other person to operate the plant, unless that person is competent to operate a bulk mixing plant.

A contractor must ensure that the placement and erection of a bulk mixing plant complies with the requirements set out by the manufacturer and that such plant is erected as designed.

A contractor must ensure that all devices to start and stop a bulk mixing plant are provided and that those devices are placed in an easily accessible position and constructed in a manner to prevent accidental starting.

A contractor must ensure that the machinery and plant selected is suitable for the mixing task and that all dangerous moving parts of a mixer are placed beyond the reach of persons by means of doors, covers or other similar means.

No person may remove or modify any guard or safety equipment relating to a bulk mixing plant, unless authorized to do so by the appointed person.

A contractor must ensure that all precautionary measures stipulated for confined spaces as determined in the General Safety Regulations, 2003, are complied with when entering any silo.

A contractor must ensure that a record is kept of all repairs or maintenance to a bulk mixing plant and that the record is available on site to an inspector, the client, the client's agent or any employee.

4.13 Explosive Actuated Fastening Device (CR21)

No contractor may use or permit any person to use an explosive actuated fastening device, unless the user is provided with and uses suitable protective equipment. The user is trained in the operation, maintenance and use of such a device.

The explosive actuated fastening device is provided with a protective guard around the muzzle end, which effectively confines any flying fragments or particles; and the firing mechanism is so designed that the explosive actuated fastening device will not function unless it is held against the surface with a force of at least twice its weight and the angle of inclination of the barrel to the work surface is not more than 15 degrees from a right angle.

A contractor must ensure that only cartridges suited for the relevant explosive actuated fastening device, and the work to be performed, are used. An explosive actuated fastening device 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 for that purpose. The safety devices of an explosive actuated fastening device are in good working order prior to use.

When not in use, an explosive actuated fastening device and its cartridges are locked up in a safe place, which is inaccessible to unauthorized persons. An explosive actuated fastening device is not stored in a loaded condition. A warning notice is displayed in a conspicuous manner in the immediate vicinity wherever an explosive actuated fastening device is used and the issuing and collection of cartridges and nails or studs of an explosive actuated fastening device are:

- a) controlled and done in writing by a person having been appointed in writing for that purpose; and
- b) recorded in a register by a competent person and that the recipient has accordingly signed for the receipt thereof as well as the returning of any spent and unspent cartridges.

4.14 Cranes, lifting machinery and equipment (CR22&DMR18)

A contractor must, in addition to compliance with the Driven Machinery Regulations, 1988 ensure that where tower cranes are used they are designed and erected under the supervision of a competent person. A relevant risk assessment and safe work procedures are developed and applied.

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

The effects of wind forces on the crane are taken into consideration and that a wind speed device is fitted that provides the operator with an audible warning when the wind speed exceeds the design engineer's specification. The bases for the tower cranes and tracks for rail-mounted tower cranes are firm, level and secured.

The tower crane operators are competent to carry out the work safely and the tower crane operators have a medical certificate of fitness to work in such an environment, issued by an occupational health practitioner in the form of Annexure 3. All mobile cranes, power driven lifting machinery, mechanical lifting devices, lifting tackle and similar must be strictly maintained as per the Driven Machinery regulation 18. As legislated, operators must be competent. Formal safe work procedures are to be determined relative to the process in question.

All lifting machinery and tackle is to be subject to routine inspections by a competent person, as well as annual performance testing. The contractor is to determine a safe work procedure relative to the risks associated with this process. Lifting machinery must strictly comply too the criteria of Driven Machinery Regulation 18 and 19.

4.15 Construction Vehicles and Mobile Plant (CR23)

A contractor must ensure that all construction vehicles and mobile plant:

- a) are of an acceptable design and construction;
- b) are maintained in a good working order;
- c) are used in accordance with their design and the intention for which they were designed, having due regard to safety and health;
- d) are operated by a person who has received appropriate training, is certified competent and in possession of proof of competency and is authorized in writing to operate those construction vehicles and mobile plant; and
- e) has a medical certificate of fitness to operate those construction vehicles and mobile plant, issued by an occupational health practitioner in the form of Annexure 3
- f) have safe and suitable means of access and egress;
- g) are properly organized and controlled in any work situation by providing adequate signaling or other control arrangements to guard against the dangers relating to the movement of vehicles and plant, in order to ensure their continued safe operation;
- h) 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;
- i) are fitted with structures designed to protect the operator from falling material or from being crushed should the vehicle or mobile plant overturn;
- j) are equipped with an acoustic warning device which can be activated by the operator;
- k) are equipped with an automatic acoustic reversing alarm; and
- l) are inspected by the authorized operator or driver on a daily basis using a relevant checklist prior to use and that the findings of such inspections are recorded in a register kept in the construction vehicle or mobile plant.

A contractor must ensure that no person rides or is required or permitted to ride on a construction vehicle or mobile plant otherwise than in a safe place provided thereon for that purpose. Every construction site is organized in such a way that, 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, construction vehicles or mobile plant using them, are sufficient in number, in suitable positions and of sufficient size. Every traffic route is where necessary, indicated by suitable signs.

All construction vehicles and mobile plant left unattended at night, adjacent to a public road in normal use or adjacent to construction areas where work is in progress, have appropriate lights or reflectors, or barricades equipped with appropriate lights or reflectors, in order to identify the location of the vehicles or plant. All construction vehicles or mobile plant when not in use, have buckets, booms or similar appendages, fully lowered or blocked, controls in

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

a neutral position, motors stopped, wheels chocked, brakes set and ignition secured. Whenever visibility conditions warrant additional lighting, all mobile plant is equipped with at least two headlights and two taillights when in operation. Tools, material and equipment are secured and separated by means of a physical barrier 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 all construction vehicles or mobile plant traveling, working or operating on public roads comply with the requirements of the National Road Traffic Act, 1996.

4.16 Electrical Installations and Machinery on Construction Sites (CR24)

A contractor must, in addition to compliance with the Electrical Installation Regulations, 2009, and the Electrical Machinery Regulations, 1988, promulgated by Government Notice No. R. 1593 of 12 August 1988 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. The control of all temporary electrical installations on the construction site is designated to a competent person who has been appointed in writing for that purpose.

All temporary electrical installations used by the contractor are inspected at least once a week by a competent person and the inspection findings are recorded in a register kept on the construction site; and all electrical machinery is inspected by the authorized operator or user on a daily basis using a relevant checklist prior to use and the inspection findings are recorded in a register kept on the construction site.

4.17 Use and Temporary Storage of Flammable Liquids on Construction Sites (CR25)

A contractor must, in addition to compliance with the provisions for the use and storage of flammable liquids in the General Safety Regulations, 2003, ensure that where flammable liquids are being used, applied or stored at the workplace concerned, it is done in a manner that does not cause a fire or explosion hazard, and that the workplace is effectively ventilated.

No person smokes in any place in which flammable liquid is used or stored, and the contractor must affix a suitable and conspicuous notice at all entrances to any such areas prohibiting such smoking. 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 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, are removed from the construction site and safely disposed of.

Where flammable liquids are decanted, the metal containers are bonded and earthed and no flammable material, including cotton waste, paper, cleaning rags or similar material is stored together with flammable liquids.

4.18 Water Environments (CR26)

A contractor must ensure that where construction work is done over or in close proximity to water, provision is made for preventing persons from falling into water and the rescuing of persons in danger of drowning.

A contractor must ensure that where a person is exposed to the risk of drowning by falling into the water, the person is provided with and wears a lifejacket.

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

4.19 Housekeeping and General Safeguarding on Construction Sites (CR27)

A contractor must, in addition to compliance with the Environmental Regulations for Workplaces, 1987, promulgated by Government Notice No. R. 2281 of 16 October 1987 ensure that suitable housekeeping is continuously implemented on each construction site, including the proper storage of materials and equipment. The removal of scrap, waste and debris at appropriate intervals. Ensuring that materials required for use, are not placed on the site so as to obstruct means of access to and egress from workplaces and passageways.

Ensuring that materials which are no longer required for use do not accumulate on and are removed from the site at appropriate intervals. Ensuring that waste and debris are not disposed of from a high place with a chute, unless the chute complies with the requirements set out in regulation 14(6).

Ensuring that 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; and ensuring that a catch platform or net is erected above an entrance or passageway or above a place where persons work or pass under, or fencing 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.

4.20 Stacking and Storage on Construction Sites (CR28)

A contractor must, in addition to compliance with the provisions for the stacking of articles in the General Safety Regulations, 2003, ensure that a competent person is appointed in writing with the duty of supervising all stacking and storage on a construction site. That adequate storage area is provided. There are demarcated storage areas and storage areas are kept neat and under control.

4.21 Fire Precautions on Construction Sites (CR29)

A contractor must, in addition to compliance with the Environmental Regulations for Workplaces, 1987, ensure that all appropriate measures are taken to avoid the risk of fire. 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:

- a) only suitably protected electrical installations and equipment, including portable lights, are used;
- b) there are no flames or similar means of ignition;
- c) there are conspicuous notices prohibiting smoking;
- d) oily rags, waste and other substances liable to ignite are without delay removed to a safe place; and
- e) adequate ventilation is provided.

A contractor must ensure that combustible materials do not accumulate on the construction site. Welding, flame cutting and other hot work are done only after appropriate precautions have been taken to reduce the risk of fire. Suitable and sufficient fire-extinguishing equipment is placed at strategic locations or as may be recommended by the Fire Chief or local authority concerned, and that such equipment is maintained in a good working order.

The fire equipment is inspected by a competent person, who has been appointed in writing for that purpose, 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 route in the case of a fire.

The means of escape is kept clear at all times. And that there is an effective evacuation plan providing for all:

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

- a) persons to be evacuated speedily without panic;
- b) persons to be accounted for; and
- c) plant and processes to be shut down; and (m) a siren is installed and sounded in the event of a fire.

4.22 4.21 Construction Employees' Facilities (CR30)

A contractor must, in addition to the construction site provisions in the Facilities Regulations, 2004, promulgated by Government Notice No. R. 924 of 3 August 2004 provide at or within reasonable access of every construction site, the following clean, hygienic and maintained facilities:

- a) shower facilities after consultation with the employees or employees representatives, or at least one shower facility for every 15 persons;
- b) at least one sanitary facility for each sex and for every 30 workers;
- c) changing facilities for each sex; and
- d) sheltered eating areas.

A contractor must provide reasonable and suitable living accommodation for the workers at construction sites who are far removed from their homes and where adequate transportation between the site and their homes, or other suitable living accommodation, is not available.

4.23 Notification of Asbestos Work (AR3) – if applicable

No employer or self-employed person shall carry out any asbestos work unless he or she has notified the provincial director in writing thereof prior to the commencement of such work. No employer or self-employed person shall require or permit any person to work in an environment in which he or she would be exposed to asbestos in excess of the prescribed occupational exposure limit.

An employer shall, before any employee is exposed or may be exposed to asbestos dust, after consultation with the health and safety committee established for that section of the workplace, ensure that the employee is adequately and comprehensively informed and trained, on both practical aspects and theoretical knowledge, with regard to:

- a) the contents and scope of these Regulations;
- b) the potential sources of exposure, including the recognition of derelict asbestos-containing materials;
- c) the potential health risk caused by exposure to asbestos, including the health risks to employees' families and others, which could result from taking home asbestos contaminated equipment and clothing, and the dramatically increased risk of lung cancer for asbestos workers who smoke;
- d) the measures taken by the employer to protect an employee against any risk from exposure;
- e) the precautions to be taken by the employee to protect himself or herself against the health risks associated with the exposure, which precautions include the wearing and use of protective clothing and respiratory protective equipment;
- f) the necessity, correct use, maintenance and limitations of protective equipment, facilities and engineering control measures provided;
- g) the assessment of exposure, the purpose of air sampling, the necessity for medical surveillance and the long term benefits and limitations thereof;
- h) the occupational exposure limit and its meaning;
- i) the importance of good housekeeping at the workplace and personal hygiene;
- j) the safe working procedures regarding the use, handling, processing, and storage of any material containing asbestos, which procedures include the correct use of control measures to limit the spread of asbestos dust outside the work area, and to limit the exposure of workers inside the work area as far as is reasonably practicable;
- k) procedures to be followed in the event of an accidental spillage or any other similar emergency situation likely to result in the release of asbestos dust;

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

- l) procedures for reporting and correcting defects likely to result in the release of asbestos dust;
- m) safe disposal of asbestos waste;
- n) procedures for record keeping; and
- o) matters contemplated in regulation 6.

Refresher training on matters shall be given at least every year or at more frequent intervals that may be recommended by the health and safety committee.

Training should be given more frequently than once a year if:

- a) work methods change;
- b) the type of work carried out changes significantly; or
- c) The type of equipment used to control exposure changes.

Training shall be provided by somebody who is competent to provide it and has adequate personal practical experience and theoretical knowledge of all aspects of the work being carried out by the employer.

An employer or a self-employed person shall ensure, as far as is reasonably practicable, that his or her mandatory or any person other than employees who may be exposed to asbestos at the workplace are given adequate information, instruction and training.

An employer shall keep a record of any training, both practical and theoretical, that was given to an employee.

An employer or a self-employed person shall give instructions in writing of the procedures to the drivers of vehicles carrying asbestos or asbestos-containing material that has the potential of causing environmental pollution or affecting human health.

5 APPOINTMENTS

5.1 Legal and other appointments

The Principal contractor is to include a site specific company organogram indicating the abovementioned appointments in their health and safety file.

Designations / Appointments (see Regulations of the Act)

Construction Manager	Construction Regulations 8(1)
Assistant Construction Manager	Construction Regulations 8(2)
Health & Safety Officer	Construction Regulations 8(5)
Construction Supervisor	Construction Regulations 8(7)
Assistant Construction Supervisor	Construction Regulations 8(8)
Risk Assessor	Construction Regulations 9(1)
Fall Protection Planner	Construction Regulations 10(1) (a)
Temporary Works Designer	Construction Regulations 12(1)
Temporary Works Supervisor	Construction Regulations 12(2)
Excavation Supervisor	Construction Regulations 13(1) (a)
Demolition Supervisor	Construction Regulations 14(1)
Scaffolding Supervisor	Construction Regulations 16(1)
Suspended Platform Supervisor	Construction Regulations 17(1)
Suspended Platform Inspector	Construction Regulations 17(8) (c)
Rope Access Supervisor	Construction Regulations 18(1) (a)
Rope Access Operator	Construction Regulations 18(1) (c)
Material Hoist Operator	Construction Regulations 19(6)
Material Hoist Inspector	Construction Regulations 19(8) (a)
Bulk Mixing Plant Supervisor	Construction Regulations 20(1)
Explosive Actuated Fastening Device Inspector	Construction Regulations 21(2) (b)
Explosive Actuated Fastening Device Issuer	Construction Regulations 21(2) (g)
Cranes – Design & Erection Supervisor	Construction Regulations 22(a)
Crane Operator	Construction Regulations 22(e)
Construction vehicle and mobile plant operators	Construction Regulations 23(1)
Control of Temporary Electrical Installations	Construction Regulations 24(c)

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

Stacking & Storage Supervisor
Fire Equipment Inspector
Health & Safety Representative
First Aider
Person Responsible for Machinery
Incident Investigator
Hazardous Chemical Substances Supervisor
Ladder Inspector
Hand Tool Inspector
Portable Electrical Equipment Inspector
Safety Harness Inspector

Construction Regulations 28(a)
Construction Regulations 29(h)
OHSACT Section 17(2)
GSR Section 3(4)
GMR Section 2
GAR Section 9(2)

6 ANNEXURES

6.1 Annexure 1 (GAR)

6.2 Application for Permit to do Construction Work

6.3 Notification of Construction work

6.4 Medical Certificate of Fitness

7 APPENDICES

7.1 ELIDZ Occupational Health and Safety Policy

ANNEXURE 1**OCCUPATIONAL HEALTH AND SAFETY ACT, 1993
(ACT NO 85 OF 1993)****REGULATION 9 OF THE GENERAL ADMINISTRATIVE REGULATIONS
RECORDING AND INVESTIGATION OF INCIDENTS****A. RECORDING OF INCIDENT**

1. Name of employer
2. Name of affected person.....
3. Identity number of affected person.....
4. Date of incident
5. Time of incident.....

6. Part of body affected	Head or Neck	Eye	Trunk	Finger	Hand
	Arm	Foot	Leg	Internal	Multiple

7. Effect on person	Sprains or strains	Contusion or wounds	Fractures	Burns	Amputation
	Electric shock	Asphyxiation	Unconsciousness	Poisoning	Occupational Disease

8. Expected period of disablement	0-13 days	2-4 weeks	>4-16 weeks	>16-52 weeks	>52 weeks or permanent disablement	Killed
-----------------------------------	-----------	-----------	-------------	--------------	------------------------------------	--------

9. Description of occupational disease.....

10. Machine/process involved/type of work performed/exposure**

11. Was the incident reported to the Compensation Commissioner and Provincial Director?

Yes	No
-----	----

12. Was the incident reported to the police?*

Yes	No
-----	----

13. SAPS office and reference

*to be completed in case of a fatal incident.** in case of a hazardous chemical substance, indicate substance exposed to

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

**B. INVESTIGATION OF THE ABOVE INCIDENT BY A PERSON DESIGNATED
THERETO**

1. Name of investigator

2. Date of investigation

3. Designation of Investigator

4. Short description of incident
.....
.....
.....

5. Suspected cause of incident
.....
.....
.....

6. Recommended steps to prevent a recurrence
.....
.....
.....
.....

.....
Signature of Investigator

.....
Date

**C. ACTION TAKEN BY EMPLOYER TO PREVENT THE RECURRENCE OF A SIMILAR
INCIDENT**

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

.....
Signature of employer

.....
Date

D. REMARKS BY HEALTH AND SAFETY COMMITTEE

Remarks
.....
.....
.....
.....

.....
Signature of Chairperson of Health and Safety Committee

.....
Date

APPLICATION FOR A PERMIT TO DO CONSTRUCTION WORK

(In terms of Regulation 3(2) of Construction Regulations, 2014)

This application must be submitted with the following documents:

1. Health and Safety Specification
2. Health and Safety Plan
3. Baseline Risk Assessment

1. Name, postal address and telephone numbers of the client:

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

2. Details of the Agent:

a. Title, Surname and Initials

b. Identity number/Passport number

c. Registration number with SACPCMP

d. Office Tel. number and/or Mobile number

e. Postal address

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

3. Name, postal address and telephone numbers of the appointed principal contractor:

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

4. Name, postal address and telephone numbers of designer of the project:

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

5. Name, postal address and telephone numbers of the following persons:

a. Construction Manager:.....

b. Construction Health and Safety Manager:.....

c. Construction Health and Safety Officer:.....

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

6. Exact physical address of the construction and site office:

.....

7. Nature of construction work:

.....

8. Expected commencement date:.....

9. Expected completion date:.....

10. Estimated maximum number of persons on the construction site:

11. Planned number of contractors on site accountable to principal contractor:.....

12. Name(s) of contractors appointed:

.....

13.

Signature of Client/Clients Agent

14.

Signature of the Principal Contractor

FOR OFFICE ONLY

Authorisation/Unique No.	LABOUR CENTRE	OFFICIAL APPROVAL STAMP

15. Date of application:

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

16. Submitted documents prescribed in Construction Regulation 5(4) (Please Tick ✓):

CR 5 (1) (a)		CR 5 (1) (b)		CR 5 (1);(C-S)	
--------------	--	--------------	--	----------------	--

17. Result of the application (Please Tick ✓):

Approved		Declined	
----------	--	----------	--

18. Reason for declining the application:

.....

.....

.....

.....

.....

.....

19.
Signature of the Supervisor

20.
Signature of revoking Officer/Inspector

NOTIFICATION OF CONSTRUCTION WORK

(In terms of Construction Regulation 4 of Construction Regulations, 2014)

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

(b) Name and tel. no of principal contractors contact person:

2. Principal contractor's compensation registration number:

3. (a) Name and postal address of client:

(b) Name and tel. no of clients contact person or agent:

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

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

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

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

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

8. Nature of the construction work:

9. Expected commencement date:

10. Expected completion date:

11. Estimated maximum number of persons on the construction site

Total: _____ Male: _____ Female: _____

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

13. Name(s) of contractors already selected:

Principal Contractor

Date

Client's Agent (where applicable)

Date

Client

Date

**THIS DOCUMENT IS TO BE FORWARDED TO THE OFFICE OF THE DEPARTMENT OF
LABOUR PRIOR TO COMMENCEMENT OF WORKS ON SITE.**

OCCUPATIONAL HEALTH & SAFETY ACT 85 OF 1993

Construction Regulations 2014

MEDICAL CERTIFICATE OF FITNESS

Name of Employee: _____ ID Number _____ Co. Number _____

	* Possible Exposures e.g. Noise, heat, fall risk, confined space, etc.	* Job Specific Requirements Operating mobile crane, digging trenches, erecting formwork and support work, etc.	*Protective Equipment eg. Dust respirator (light duty), welding gloves, etc.
*Occupation eg. General worker, welder, bricklayer, Steel fixer, mobile crane operator, etc.			

***The Employer to complete the information in the spaces marked with an * before sending the Employee for a medical examination**

Declaration by the Medical Examiner:

I certify that I have, by examination and testing, using the above criteria specified by the employer, satisfied myself that the abovementioned employee is fit to perform the duties as described by the employer in the matrix above.

Occupational Medicine Practitioner / Occupational Health Nursing Practitioner: (Please print name) _____

Signature _____ Practice Number: _____ Date: _____

Address: _____

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

EAST LONDON INDUSTRIAL DEVELOPMENT ZONE (SOC) LTD

OCCUPATIONAL HEALTH AND SAFETY POLICY



The East London Industrial Development Zone (ELIDZ) (SOC) Ltd is a world class 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 East London IDZ (ELIDZ) shall be developed and operated in a manner, which is economically and socially acceptable and sustainable. ELIDZ (SOC) Ltd recognizes that Occupational Health and Safety 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 occupational health and safety hazards related to the ELIDZ development and activities which may put the health and safety of ELIDZ (SOC) Ltd employees, contractors, tenants, visitors, and community at risk;
- Plan actions to mitigate negative occupational health and safety risks within the ELIDZ's jurisdiction;
- Monitor all ELIDZ tenant activities within ELIDZ's jurisdiction which can result in negative occupational health and safety 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.

In so doing, the ELIDZ (SOC) Ltd shall wherever reasonably practicable manage potentially detrimental effects on health and safety of all employees and communities affected by the ELIDZ development.

As a responsible corporate citizen the ELIDZ (SOC) Ltd 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.

Top Management take full responsibility for the OH&S performance of the ELIDZ (SOC) Ltd and hereby assert that adherence to this OH&S Policy is mandatory to all ELIDZ employees and contractors. 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 need arise to ensure it remains relevant and appropriate to the ELIDZ and will be distributed to the public on request.

Simphiwe Kondlo
Chief Executive Officer

SHE/DOC/01 rev 5 (05/01/2015)

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

C3.3 Occupational Health and Safety COVID-19 Addendum



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

CONTRACT NO: EB/AUT/EXT/10/19/Z1A

**EXTENSION TO THE AUTOMOULD MANUFACTURING FACILITY
IN ZONE 1A OF THE ELIDZ**

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East London IDZ SOC Ltd
Contact person: G Whittaker
Fax No: 086 605 0942
Email: gary@elidz.co.za

Contractor ____ Witness 1 ____ Witness 2 ____ Employer ____ Witness 1 ____ Witness 2 ____

Addendum OHS COVID-19 Site Management Specifications

Page 1

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 ____

Addendum OHS COVID-19 Site Management Specifications

Page 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: **EXTENSION TO THE AUTOMOULD MANUFACTURING FACILITY 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 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 _____

Addendum OHS COVID-19 Site Management Specifications

Page 3

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 following is to be provided:

- formation of a COVID-19 response team within the ELIDZ (ELIDZ official, SHEQ Manager, the Pr CHSA and the COVID-19 Compliance Officer);
- a security fence and access gate to control all people arriving and leaving site;

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

- a decontamination tunnel for people arriving and leaving the site;
- screening will be conducted at the entry point;
- for further tracing and testing, where applicable, symptomatic workers will be referred to off-site medical practitioners and related support staff for further testing and contact tracing;
- screening will enable the tracing, identification and quarantining of people who encounter the infected employee; and
- 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 4 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

Contractor ____ Witness 1 ____ Witness 2 ____ Employer ____ Witness 1 ____ Witness 2 ____

- The PC closely monitors the employee for symptoms on return.

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);
- Full face shields and cloth masks in relation to the construction activity; and
- Disinfection spray booths as an additional precaution.

6.6 Occupational Health and Safety Signage

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

Hereunder are examples:



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

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.

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.

Contractor ____ Witness 1 ____ Witness 2 ____ Employer ____ Witness 1 ____ Witness 2 ____

The PC must ensure adequate number of mobile toilets (regulated number of toilets plus two) and must also provide a disinfecting schedule (minimum 2-hourly disinfecting together with provision of mechanisms and instructions for self-disinfecting before and after use).

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

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

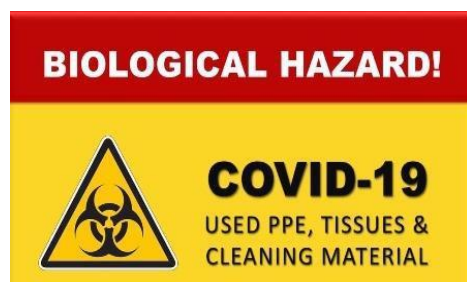
6.11 Discipline, Alcohol and Substance Abuse

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 AND SCREENING DEVICE

7.1 Temporary Security Fencing

Access to the site will be restricted by means of a temporary security fence.

7.2 Access Control, Decontamination and Screening

Access, screening and disinfection at the entry point to be implemented:

Contractor ____ Witness 1 ____ Witness 2 ____ Employer ____ Witness 1 ____ Witness 2 ____

8 ANNEXURE A: BASELINE RISK ASSESSMENT

Contractor ____ Witness 1 ____ Witness 2 ____ Employer ____ Witness 1 ____ Witness 2 ____

Addendum OHS COVID-19 Site Management Specifications

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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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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 ____

Addendum OHS COVID-19 Site Management Specifications

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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	5 5	25 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
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

#	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)	
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 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. Temporary security fence around construction sites (sub-zone) to avoid free movement of people.	PC ELIDZ	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 and ELIDZ	5	5	25	Manage the risk
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

#	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)	
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)				

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		
1.2	Principal Contractor's initial obligations in respect of the COVID-19 Workplace Regulations and COVID-19 Construction Sector Regulations	Sum	1		
1.3	Principal Contractor's time related obligations in respect of the COVID-19 Workplace Regulations (Anticipated Period)	Month	6		
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	6		
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		
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	1		
6.2	(b) Provision and upkeep of infrared handheld thermometer	No	2		

ITEM NO	DESCRIPTION	UNIT	QUANTITY	RATE	TOTAL
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	4		
8.2	Sanitisation Station (297 x 400mm)	No	4		
8.3	Face Mask (297 x 420mm)	No	4		
8.4	Social Distancing (400 x 400mm)	No	4		
8.5	Prevention Tips (297 x 420mm)	No	4		
9	Cleaning materials and Hand sanitizers				
9.1	Monthly disinfection of facilities	Months	4		
9.2	Supply and upkeep of hand sanitizer dispensers and consumables (paper towel)	Months	4		
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)					

C3.4: CONSTRUCTION ENVIRONMENT MANAGEMENT PLAN

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

SHE/WI/02 rev 8 (January 2016)

**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.

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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
SHEM	Safety, Health and Environment Manager for the ELIDZ (SOC) Ltd.
CEMP	Construction Environmental Management Plan
EMS	Environmental Management System for the ELIDZ (SOC) Ltd
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
DEDEA	Department of Economic Development and Environmental Affairs
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 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 minimise adverse environmental impacts and so that the costs of implementing the CEMP are included into the Contract pricing.

2 IMPLEMENTATION OF THE CEMP

The CEMP is intended for dissemination by the SHEM 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 Safety, Health and Environment Manager (SHEM) 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 Contractor shall appoint a representative permanently associated with the works site to act of the Environmental Control Officer (ECO) for the duration of the project. The ECO shall have the necessary training and experience to receive and act upon instructions from the SHEM and PA and to report as required.

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.

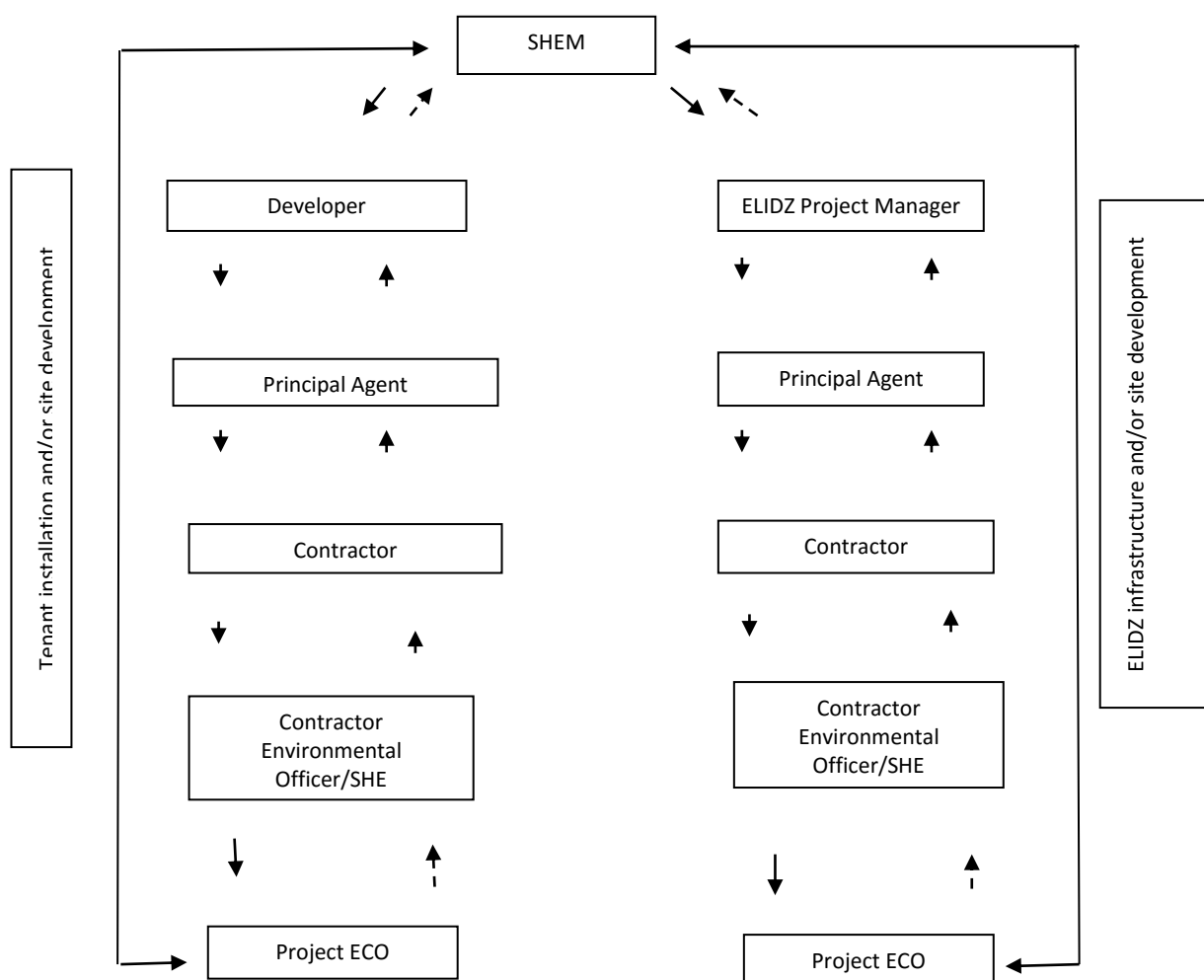


Figure 1: Organisational structure showing lines of responsibility and communication.

3.2 Roles and responsibilities

3.2.1 Safety, Health and Environment Manager (SHEM)

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 (SHEM) of the ELIDZ or the duly appointed representative to monitor the implementation of the requirements of the CEMP by Consultants and Contractors, as specified in the CEMP.

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

In terms of the application of this CEMP the SHEM 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 SHEM with written reports related to non-conformance with the CEMP and method statements. Escalate to SHEM 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 PICO to submit Environmental Close-out report for SHEM 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 The Developer

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

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

3.2.3 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:

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

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 Environmental Control Officer (ECO), responsible for managing the CEMP on the Contractors behalf, for approval. The proposed ECO shall have the required environmental experience to manage the CEMP and the SHEM 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 Environmental Control Officer (ECO) to the PA and SHEM within 7 days of the appointment to commence work. The appointed ECO 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 Environmental Control Officer (ECO)

The ECO 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 SHEM 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 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, SHEM 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.

- 4.2.1 Method statements shall state clearly:
 - timing and phasing of activities
 - materials to be used
 - equipment and staffing requirements
 - the proposed construction procedure designed to implement the relevant environmental specifications
 - 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 files of 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 EL IDZ.
- 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 SHEM 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 SHEM. The SHEM'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, that 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 SHEM. The SHEM'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 SHEM. The SHEM'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 SHEM.
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 SHEM.
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 SHEM 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 SHEM 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 (ie GCC, JBCC etc).

5. ENVIRONMENTAL AUDITING

It shall be the responsibility of the SHEM 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 8 week 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 SHEM by the Contractor, and a written approval has been received from the SHEM.

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 to the SHEM, and ensure that emergency response procedures are in place, 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 SHEM 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 Drizit or equivalent 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 the Eastern Cape Nature and Environmental Conservation Ordinance 19 of 1974, to remove or pick any protected or unprotected indigenous flora without the written permission of the land owner. The Ordinance sets out particular penalties for offenders and the 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 forestry/bush areas.

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 Eastern Cape Nature and Environmental Conservation Ordinance 19 of 1974

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 pests will be allowed on site.

PS 3.3 Defacement of Natural Features

Defacement of any features within the ELIDZ shall be cause for the SHEM 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 Environmental Forestry legislation, which includes Cycads, Tree Ferns, Aloes, Lilies, Orchids amongst others.

In terms of the regulation these plants may not be gathered, transported or relocated without a permit. These plants must therefore be avoided, or if unavoidable, the SHEM 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 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 The 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 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. The Contractor shall implement remedial measures as instructed by the SHEQM and / or the PA at an early stage to avoid severe erosion problems occurring.
- 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 3.10 ENVIRONMENTALLY SENSITIVE AREAS

- 3.10.1 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 and a site drawing indicating the ESAs is included with the specification.

3.10.2 No ESA shall not be entered or used for any purpose unless a written motivation has been submitted to the SHEM by the Contractor, and a written approval has been received from the SHEM.

3.10.3 The Contractor shall exercise special care when working close to the ESA in order to avoid physical disturbance or pollution of these areas.

3.10.4 Damage caused to an ESA by the Contractor shall be cause for the SHEM to invoke penalties in accordance with clause 4.4 - Penalties.

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 SHEM 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 4 CONSTRUCTION SITE ACTIVITIES

PS 4.1 Sanitation

- PS 4.4.1 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 regularly by a reputable toilet servicing company, and shall be emptied before long weekends and builders' holidays. The toilet servicing company shall provide proof that they are licensed to dispose of waste to the Buffalo City Municipality sewers.
- PS 4.4.2 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 4.4.3 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.

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 stormwater 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 stormwater and wastewater runoff shall not be permitted to enter streams but shall be led to a pit where the water can soak away.
- PS 4.4.4.2 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 SHEM, PECO and PA at least 72 hours before the planned activity. Blasting activities may not commence until written approval is received from the SHEM, (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 SHEM 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 an 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 side 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 and soil

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.

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- 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 4.8.2 No vehicles or machines shall be refuelled on site except at designated refuelling locations.

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 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 SHEM 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 SHEM 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 stormwater 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 SHEM 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, replacement of topsoil and re-grassing / re-vegetating such areas.
- PS 6.2 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 PA'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 6.2.1 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 6.2.2 Irrigation will enhance the rehabilitation and should be considered if unusually dry conditions prevail..
- PS 6.2.3 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 6.2 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 6.3 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 Stormwater 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 Noise levels must be kept within acceptable limits for a protected area, and must not be of such nature as to detract from the natural experience of other visitors to the protected area.
- PS 9.2 The contractor shall take into consideration that the project areas are located within a natural environment and that noise could be a major disturbance/nuisance for the fauna and visitors

PS 7 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.

EAST LONDON INDUSTRIAL DEVELOPMENT ZONE (SOC) LTD ENVIRONMENTAL POLICY

The East London Industrial Development Zone (ELIDZ) (SOC) Ltd 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 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 tenants 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 though 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.

C3.5: HIV/AIDS SPECIFICATION

C3.5: HIV Aids Specification



CONTRACT NO: EB/AUT/EXT/10/19/Z1A

EXTENSION TO THE AUTOMOULD MANUFACTURING FACILITY IN ZONE 1A OF THE ELIDZ

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East London IDZ SOC Ltd Contact person: Nwabisa Boya Fax No: 086 605 0942 Email: nwabisab@elidz.co.za	
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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.

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

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

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

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

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

- 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	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

SBD 6.2**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 if 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.

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

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:** _____

C3.7: SMME SPECIFICATION

C3.7: SMME Specifications



CONTRACT NO: EB/AUT/EXT/10/19/Z1A

**EXTENSION TO THE AUTOMOULD 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

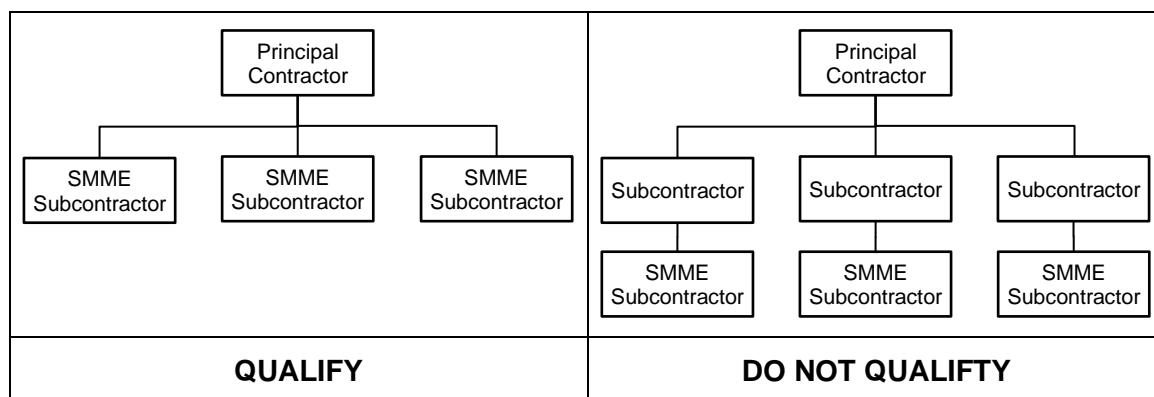
SMMEs on the ELIDZ SMME database are to be approached first. If these SMMEs are not suitable or adequate then SMMEs who are not on the database may be selected.

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:

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

- **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

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.

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.

This is an extension to an existing and fully operational facility therefore there should be no disruption to the manufacturing process .



Envisaged soil conditions are as described in the Earthworks sections of the Provisional Bills of Quantities. All Engineer and Structural works must be carried out as per the Engineers documentation and site instructions. Any variations to Civil and Structural Engineers design due to adverse soil conditions will be compensated for through the issue of a Variation Order. 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 must also assess the access road to site (route to be indicated on the attached existing services plan and pointed out at the site inspection), 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.

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

EXTENSION TO THE AUTOMOULD MANUFACTURING FACILITY IN ZONE 1A OF THE ELIDZ -
EB/AUT/EXT/10/19/Z1A

C4.2 Site Photos

<p>Aerial view of affected portion of land.</p>	 <p>This aerial photograph shows the Automould Factory and its extension. The factory is a large industrial building with a blue roof, situated in a green, wooded area. A yellow pin marks the 'Automould Factory Extension'. A legend in the top right corner identifies the pin. The Google Earth logo and copyright information are visible in the bottom left. A scale bar indicating 500 m and a north arrow are in the bottom right.</p>
<p>Note existing fully operational factory in the area currently paved</p>	 <p>This aerial photograph provides a closer view of the existing fully operational factory. The building is a large, rectangular industrial structure with a blue roof, surrounded by a paved area. A yellow pin marks the 'Automould Factory Extension'. A legend in the top right corner identifies the pin. The Google Earth logo and copyright information are visible in the bottom left. A scale bar indicating 100 m and a north arrow are in the bottom right.</p>

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

PART C5: GEOTECHNICAL REPORT



GEOHYDROLOGY

GEOTECHNICAL

ENVIRONMENTAL

SOCIAL DEVELOPMENT

Technical Report
2020 / 08 / 08 GTEC

AUTOMOULD FACILITY EXPANSION AT THE ELIDZ
Geotechnical investigation for the proposed expansion of
Automould facility at the East London IDZ, Buffalo City
Metropolitan Municipality

August 2020

Prepared for: **HSC Consulting**
Document version 1.0 – Draft 1
Compiled by AGES Omega (Pty) Ltd



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TECHNICAL REPORT:

AUTOMOULD FACILITY EXPANSION AT THE ELIDZ

Geotechnical investigation for the proposed extension of the Automould facility at the East London IDZ, Buffalo City Metropolitan Municipality; Eastern Cape Province

August 2020

Conducted on behalf of:

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1 INTRODUCTION

1.1 General

AGES Omega (Pty) Ltd was appointed by HSC Consulting to conduct a geotechnical investigation for the proposed extension of the Automould Facility at the East London Industrial Development Zone, with the aim of determining and evaluating the engineering geological characteristics of the in-situ soil and rock material underlying the project area.

1.2 Terms of reference

The investigation was requested by Mr. Andrew Scott of the firm HSC Consulting on behalf of their client the ELIDZ. AGES was appointed following the submission of a detailed project quotation. Appointment was received on the 7th of April 2020 via signed quotation conditions of service. Project activation and reporting was severely delayed by the Covid-19 pandemic lockdown restrictions.

1.3 Objectives and specifications for the investigation

The geotechnical investigation was aimed at specifically investigating the extension areas at Automould as follow:

- Existing paved area to determine general pavement layers
- Proposed road, hardstand and utilities area north of the building
- Existing hardstand area and perimeter for warehouse extension

The reporting component to generally address the following:

- Structural Engineering Requirements
 - Foundation indicators
 - Estimated Safe bearing capacity
 - Activity of material
 - Foundation classifications
- Civil Engineering Requirements
 - Generalised soil profiles
 - Water tables
 - Compaction characteristics

1.4 Nature of the investigation

The investigation was conducted over approximately 5 days of fieldwork as required in order to finalise required specifications. Commencement of the fieldwork was delayed due to Covid-19 pandemic lockdown regulations. The investigation was conducted as follows:

- Site walk over survey and geological mapping.
- Test pit excavation and profiling and materials sampling.
- Dynamic Cone Penetrometer testing.
- Reinstatement of test pits to original condition.
- Sample selection and submission to laboratory for detailed analysis.

- Data processing and evaluation.
- Preliminary geotechnical report compilation, with no laboratory analysis results.
- Final reporting incorporating laboratory analysis results.

1.5 Location of the project area

The project area is located within the East London Industrial Development Zone (ELIDZ). The locality of the project area is indicated in Figure 1 below, as exported from Google Earth Professional Edition. The central point of the project is defined by the following coordinate (Decimal Degrees, WGS84):

- ❑ Latitude: 33.052658° S
- ❑ Longitude: 27.859047° E



Figure 1: Regional site locality as observed in Google Earth

1.6 Available information

The following sources of information were used during the investigation:

- ❑ Geological maps
 - 3327BB EAST LONDON, scale 1 : 50 000.
- ❑ Hydrogeology map
 - 3126 QUEENSTOWN; scale 1 : 500 000.
- ❑ Electronic maps
 - Site survey supplied by HSC Consulting.

1.7 Geological Setting

The geological setting of the project area was determined by means of published 1:50 000 scale geological map and the study of aerial imagery.

The project area is underlain by sedimentary rocks of the Middleton and Balfour Formations of the Adelaide Subgroup of the Beaufort Group that is part of the Karoo Supergroup sequence. There is a small alluvial deposit located just outside the western boundary of the site that is associated with the nearby stream. The lithology of these formations comprises of mudstone and sandstone that is locally overlain by soil > 1 m thick.



Figure 2: Geological setting of project area (Pa – Adelaide Subgroup)

Dolerite dykes and sills have intruded the sedimentary strata of the Karoo Supergroup during the late Karoo volcanism. The 1:50 000 geology map does not indicate the presence of any dolerite dyke or sill intrusions in the project area. A thin dolerite dyke with a basic east-west trend is indicated in the 1:250 000 geology map and this intrusion was encountered in investigations to the south of the project area further than 400 m. The dyke was not encountered in any of the test pits that was excavated as part of this investigation and is not expected to intersect the site.

No other prominent geological structures such as fault zones or LANDSAT derived lineaments occur in the project area.

The area does not reflect any risk for the formation of sinkholes or subsidence caused by the presence of water-soluble rocks (for example: dolomite or limestone).

1.8 Regional Seismic Hazard

According to Fernandez *et al* (1979) the regional seismic hazard in the project area can be defined as follows:

- The area exhibits a 90 % probability of the occurrence of a seismic event not exceeding Class VII-intensity¹ (i.e.: equivalent to a seismic event registering 5.5 to 6.1 on the Richter Scale) within a period of 500 years.

In this light, the natural seismic risk of the project area can be classified as SLIGHT to LOW, and as such requires that Masonry Class B design and construction measures be implemented, incorporating good workmanship and reinforced mortar work, but specific design and construction measures to resist the effect of lateral forces on the proposed development is not deemed necessary.

1 The effects of a Class VII-intensity event (categorized as strong to very strong) can be summarized as follows:

- Difficult to stand
- Noticed by drivers of motorcars
- Hanging objects quiver
- Furniture broken
- Damage to weak materials (such as adobe: poor mortar; low standards of workmanship; weak horizontally) including cracks
- Weak chimneys broken at roof line
- Fall of plaster, loose bricks, stones, tiles, cornices, unbraced parapets and architectural ornaments
- Some cracks in ordinary workmanship and mortar
- Small slides and caving-in along sand or gravel banks and concrete irrigation ditches will be damaged

2 SITE INVESTIGATIONS

2.1 Test Pit Excavation

A total of 10 test pits, numbered AM TP 1 to AM TP10, was excavated on the project area utilising a JCB 3CX 4x4 TLB-type excavator (fitted with a rock bucket) on the 8th and 9th of June 2020 at positions indicated by the client. The TLB was obtained from Messrs. Plus Plant Hire in East London. The test pits were profiled according to the Guidelines for soil and rock profiling (2002). The positions of the test pits are indicated in the Figure in Chapter 4.

Generalised soil conditions encountered during the investigation are discussed in Chapter 4 of the report with detailed soil profile logs and photographs attached in Appendix A.

2.2 Dynamic Cone Penetrometer Testing

Dynamic Cone Penetrometer (DCP) tests were conducted adjacent to all test pits and in the bottom of selected test pits based on encountered soil conditions.

The DCP results are summarised in the tables at the end of the document for reference. DCP derived bearing capacity and other properties are highly dependent on the soil moisture content at the time of testing, and extensive decrease of values can be expected with increased moisture contents. The results should only be used for very basic estimates.

Please note:

- *The moisture content of the soil material is expected to influence the bearing capacity of the material to a large extent, with significant decreases in bearing expected with an increase in material moisture content.*
- *The indicated kPa ranges of the materials are highly influenced by the DCP cone intersecting cobbles and boulders within the alluvium material, that will result in a much higher kPa value than the actual bearing of the material.*

DCP data is discussed in Chapter 4 of the report with detailed data and results attached in Appendix B.

2.3 Groundwater Survey

A groundwater monitoring borehole occurs approximately 200 m to the north of the site. The positions of the monitoring boreholes are indicated in the figure below. The borehole is utilised for groundwater quality monitoring by the ELIDZ (historically). The static groundwater level recorded in 2012 was measured at 10.02 m at borehole EC/036/AM.



Figure 3: Groundwater survey – Position of monitoring boreholes within 1 km radius of project site

3 LABORATORY ANALYSIS

Selected samples were taken of the prominent soil horizons identified during the site investigation for detailed laboratory analysis. The samples were submitted to Messrs. Controlab South Africa (Pty) Ltd, Civil engineering material and geotechnical laboratory on the 26th of June 2020 for detailed analysis of the following:

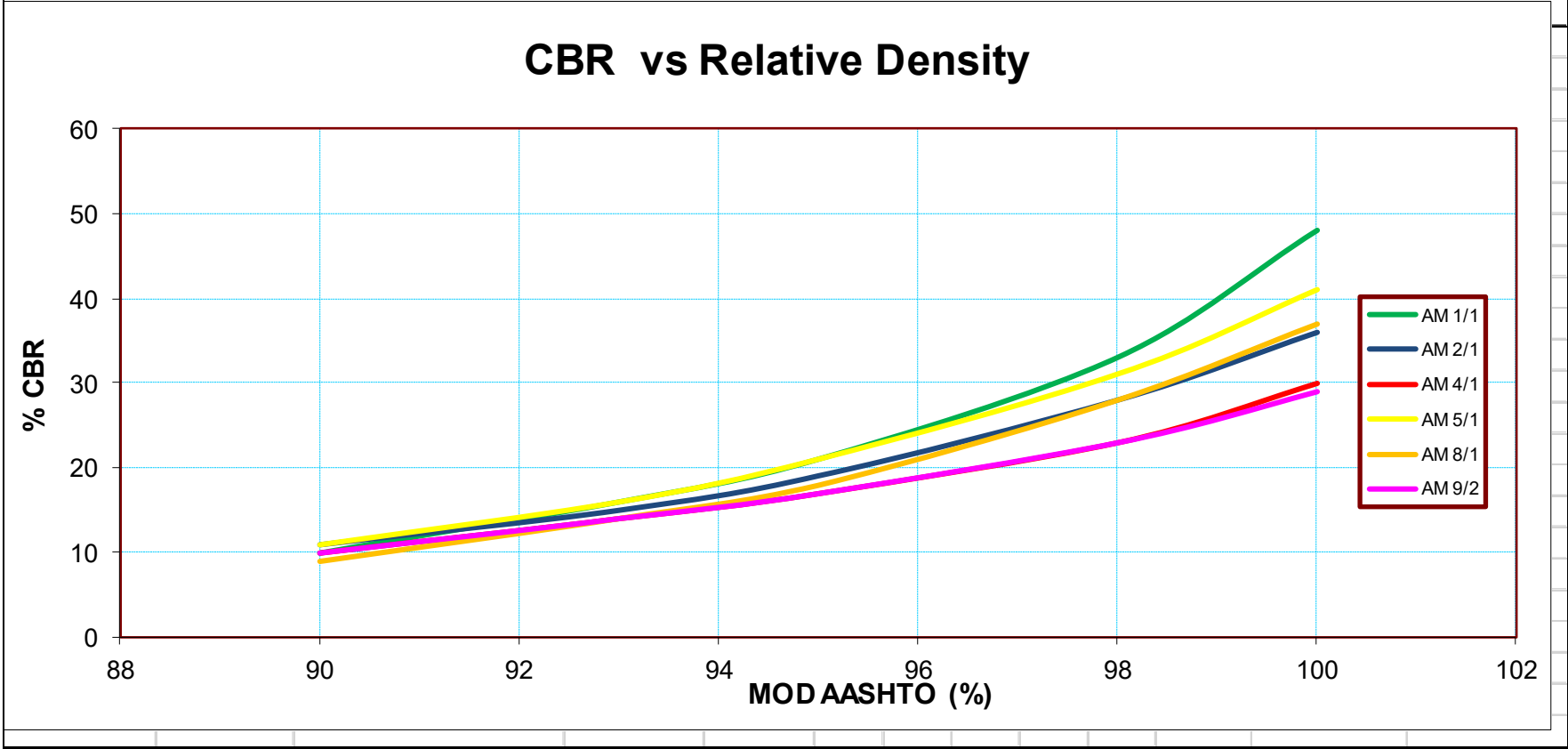
- Disturbed soil samples (4 samples)
 - Sieve Analysis including Hydrometer to determine % clay
 - Atterberg Limits
 - Moisture Content,
 - pH
 - Electrical Conductivity
- Disturbed bulk soil samples (6 samples)
 - Road Indicators
 - Maximum Dry Density
 - Optimum Moisture Content
 - CBR vs MOD AASHTO density
 - % Swell
 - TRH14 Classification
- Undisturbed soil samples (1 sample)
 - Unconfined Compressive Strength

Processed laboratory results are summarised in the Tables below and discussed in Chapter 4. Analysis certificates are attached in Appendix C for reference.

Table 1: Detailed summarised and processed laboratory results with classifications

SAMPLE INFORMATION			GRADING ANALYSES				ATTERBERG LIMITS			LS %	SOIL CHEMISTRY				ASTM	POTENTIALLY ADVERSE GEOTECHNICAL CHARACTERISTICS			
Number	Depth (m - m)	Material Origin	Gravel %	Sand %	Silt %	Clay %	LL %	PI	PI'		pH	Conductivity (mS/m)	Soil Resistivity (Ohm/m)	Moisture Content	Soil Classification	Expansiveness	Collapse / Compressibility	Erodibility / Dispersivity	Soil pH Class & Soil Corrosiveness (Conductivity)
AM2/1	0.25 - 1.10	Fill	37	42.8	13.2	7	27	11	3.8	5.0	8.38	1.475	-	9.6	SC: Clayey sand with gravel	Low Risk	Low Risk	High Risk	Moderately Alkaline / Generally not corrosive
AM4/1	0.85 - 1.35	Residual Siltstone	13	36.2	27.8	23	30	16	9.9	8.0	6.47	2.090	-	15.3	CL: Sandy lean clay	Low Risk	Low Risk	High Risk	Slightly Acid / Generally not corrosive
AM8/1	2.00 - 2.85	Residual Siltstone	15	37	22	26	36	18	10.3	9.0	6.74	1.753	-	19.2	SC: Clayey sand with gravel	Low Risk	Low Risk	High Risk	Neutral / Generally not corrosive
AM9/1	0.80 - 1.75	Ferruginised Residual Siltstone	17	34.6	29.4	19	34	16	9.4	8.0	7.61	0.963	-	13.9	SC: Clayey sand with gravel	Low Risk	Low Risk	High Risk	Slightly Alkaline / Generally not corrosive

Sample	Depth	Origin	MOD. AASHTO		CBR at % MOD.AASHTO					Swell	TRH14 Class	TRH 20 Class
Number	m-m		MDD Kg/m ³	OMC %	100	98	95	93	90	%		
AM 1/1	0.00 - 0.25	Fill	2150	7.4	48	33	21	16	10	0.15	G7	Class E
AM 2/1	0.25 - 1.10	Fill	2140	7.5	36	28	19	15	11	0.23	G7	Class E
AM 4/1	0.85 - 1.35	Residual Siltstone	2050	10.7	30	23	17	14	10	0.3	G8	Class D
AM 5/1	0.00 - 3.10	Fill	2162	9.3	41	31	21	16	11	0.19	G7	Class E
AM 8/1	2.00 - 2.85	Residual Siltstone	2034	8.3	37	28	18	14	9	0.58	G8 / G9	Class E
AM 9/2	1.75 - 2.45	Siltstone Bedrock	2150	8	29	23	17	14	10	0.4	G8	Class E



ROCK UCS CORE STRENGTH TEST - ASTM D 2938						
CORE TEST DATA						
CLIENT ID	TOTAL LENGTH OF CORE SUBMITTED (mm)	LENGTH OF CORE AFTER TRIMMING (mm)	CORE DIAMETER (mm)	DENSITY (Kg/m ³)	STRENGTH UCS (MPa)	COMMENTS
AM 8/2	55	52	50	2370	11.7	FAILURE TYPE - SHATTERED
	68	50	50	2454	7.6	FAILURE TYPE - SHATTERED
	51	49	50	2453	4.1	FAILURE TYPE - SHATTERED

4 RESULTS

4.1 Test pit excavation and profiling

A total of 10 test pits, numbered AM TP 1 to AM TP10, was excavated on the project area utilising a JCB 3CX 4x4 TLB-type excavator (fitted with a rock bucket) on the 8th and 9th of June 2020 at positions indicated by the client. The TLB was obtained from Messrs. Plus Plant Hire in East London. The test pits were profiled according to the Guidelines for soil and rock profiling (2002).

The positions of the test pits are indicated in the Figure below, with detailed test pit logs attached in Appendix A.



Figure 4: Detailed layout of test pits

4.2 Excavatability Conditions

It was possible to excavate the test pits utilising a JCB 3CX 4x4 TLB-type excavator (fitted with a rock bucket) to a depth between 1.30 and 3.10 mbgl (mean 2.41 mbgl) after which excavation refused on moderately hard rock to hard rock siltstone bedrock material or excavation was stopped as an adequate or maximum safe depth was achieved. The rockhead of the soft rock siltstone bedrock material was encountered from a depth between 0.95 and 2.95 mbgl (mean 1.83 mbgl) in 6 of the test pits.

Excavatability conditions can be summarised as follow:

- From Surface to 1.0 mbgl - Soft Excavation Class
- From 1.0 mbgl to 3.0 mbgl - Soft Excavation with pockets of Intermediate Excavation Class

Table 2: Excavatability details - Depth to rock, depth to refusal and seepage

TEST PIT	EXCAVATION DEPTH	DEPTH TO BEDROCK	REFUSAL STATUS	SEEPAGE
AM TP 1	1.30	-	Stopped	-
AM TP 2	1.45	1.10	Refused	-
AM TP 3	1.40	0.95	Refused	-
AM TP 4	2.00	1.35	Refused	-
AM TP 5	3.10	-	Stopped	-
AM TP 6	3.00	-	Stopped	-
AM TP 7	3.00	-	Stopped	-
AM TP 8	2.90	2.85	Refused	-
AM TP 9	2.80	1.75	Refused	1.85
AM TP 10	3.10	2.95	Refused	-
<i>Min</i>	1.30	0.95		
<i>Max</i>	3.10	2.95		
<i>Average</i>	2.41	1.83		

4.3 Generalised soil conditions

The following generalised soil conditions can be expected based on limited point source test pit information obtained from test pits.

The entire site is overlain by fill material that is generally composed of loosely to densely packed gravel or cobbles with brick and plastics in a sandy clay to clayey sand matrix. The material exhibits a dense to stiff / very dense consistency extending to a depth of in excess of 3.10 mbgl.

In portions of the site, the fill material is underlain by residual siltstone material that is generally composed of sandy clay with frequent to abundant, angular gravel. The material exhibits a micro-shattered to inherent soil structure and a firm to stiff consistency. The material becomes ferruginised in portions of the site with scattered ferricrete nodules in profile. The material extends to a depth up to approximately 0.6 mbgl.

The residual siltstone material is underlain by ferruginised residual siltstone that is generally composed of sandy clay with scattered to frequent ferricrete nodules and scattered siltstone gravel. The material exhibits a firm to stiff consistency and micro-shattered to shattered soil structure.

Siltstone bedrock material was encountered in 6 of the 10 test pits. The material is highly weathered to moderately weathered, fine to medium grained, medium to thickly jointed / fractured, with a soft rock to hard rock hardness. The material was encountered from a depth of 0.95 and 2.95 mbgl (mean 1.83 mbgl) with refusal occurring from a depth between 1.30 and 3.10 mbgl (mean 2.41 mbgl).

The generalised soil profile and sections are indicated in the figures below.

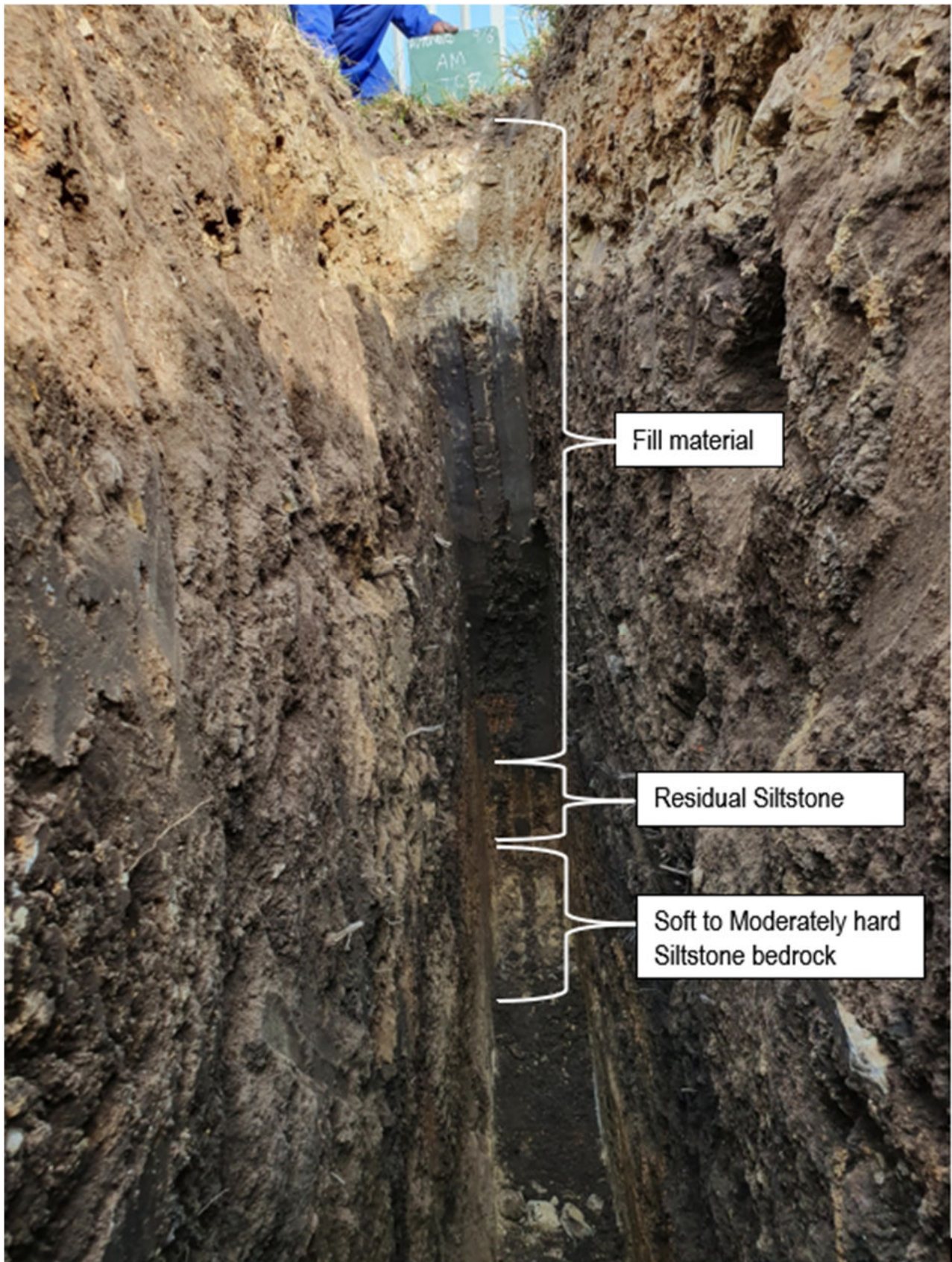


Photo 1: ELIDZ Automould Extension Soil Profile (AM TP8)

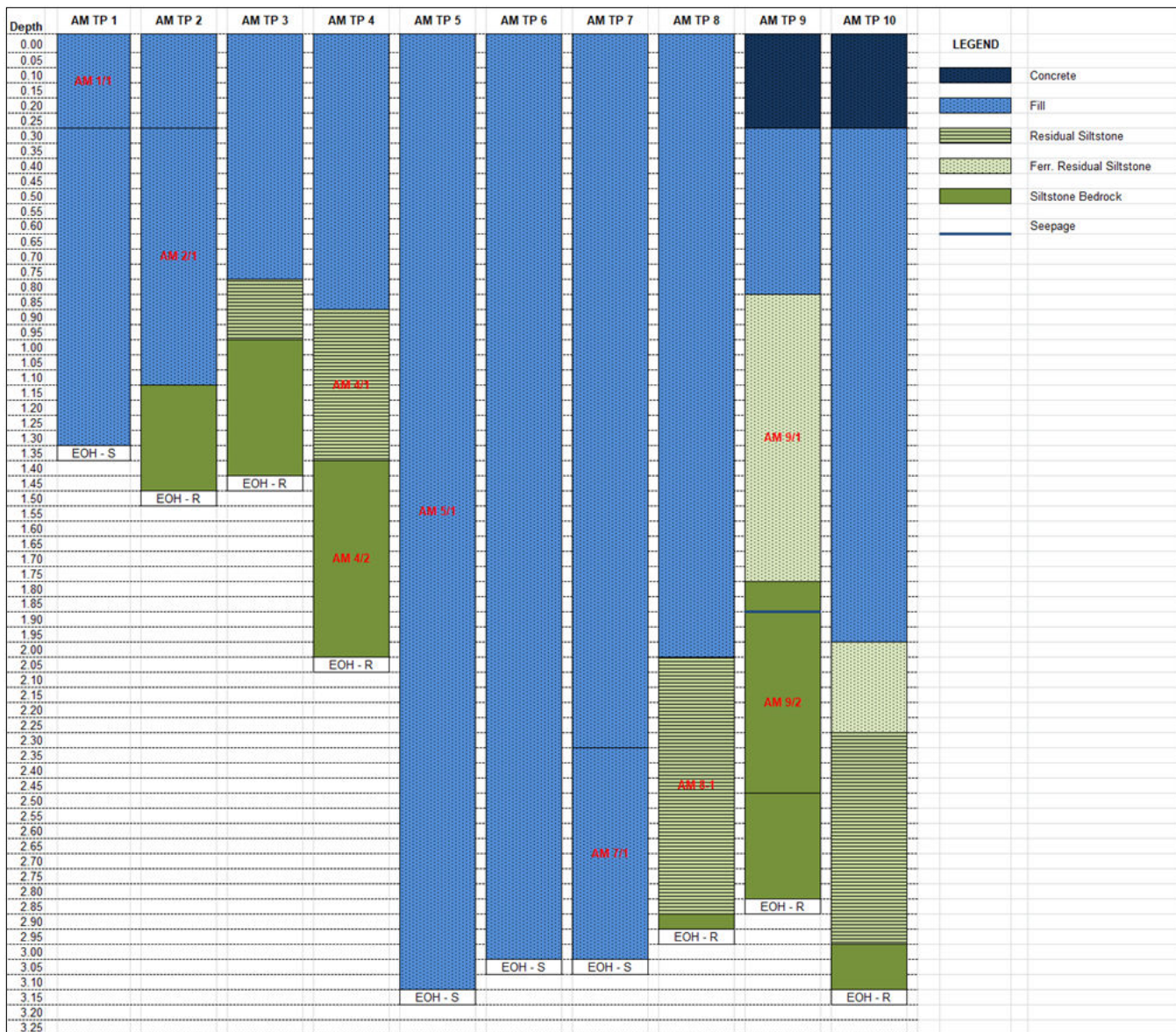


Figure 5: Generalised soil conditions

4.3.1 Paved / Parking area

Three test pits numbered, AM TP1, AM TP2 and AM TP3 were excavated on the proposed parking areas.

A large portion of the site is paved with inter-locking, paving brick of 0.10 m thickness. The pavers are laid on a very thin sand base. The base is underlain by subbase/ fill material general composed of densely packed, angular gravel in a clayey sand matrix, the material appears to be imported gravelly dolerite material as and is expected to classify as G5 to G7 materials according to TRH14. This material has a thickness of approximately 0.25 mbgl.

With depth, the fill material becomes sandy clay with scattered gravel in profile. The material appears to have been originated from the cut material on the earlier site construction activities. This fill material is expected to have a high PI and clay content and is expected to classify as G10 materials according to TRH14.

At depth, the fill material is underlain by residual siltstone material, generally composed of densely packed gravel in a sandy clay matrix. The material is expected to have a high PI and clay content and classify as G8 to <G9 materials according to TRH14. The material has a thickness of approximately 0.25 m.

The residual material is underlain by a highly to moderately weathered, soft to hard rock, siltstone bedrock material encountered from a depth of 0.95 to 1.10 mbgl (mean 1.03 mbgl).

The paving site generalised soil profile with photographs is shown in the figure below:

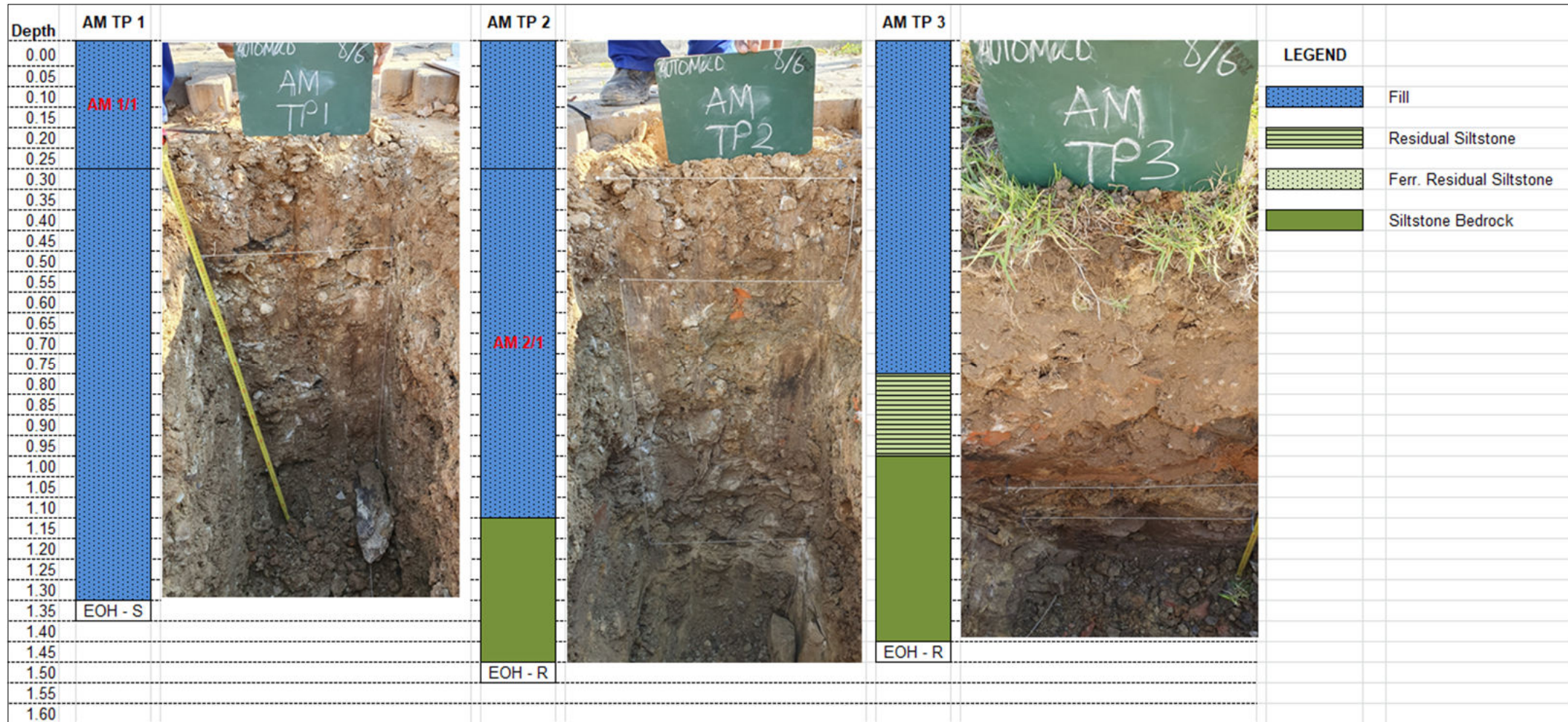


Figure 6: Generalised soil conditions underlying the proposed paved/ parking area

4.3.2 New Utility Building Extension (North of the Existing Structure)

One test pit was excavated near the position of the proposed structure (AM TP4). The site is underlain by fill material generally composed of clayey sand to sandy clay with scattered to frequent gravel. The material appears to be derived from earlier, on site construction, possibly from the cut side of the constructed platform. The material appears to be compacted in 150 mm layers to a depth of 0.85 mbgl. The material is expected to have a high clay and PI content and classify as G7 according to TRH14.

At depth, the fill material is underlain by residual siltstone material, generally composed of densely packed, soft, gravel in a sandy clay matrix. The material is expected to have a high PI and clay content and classify as G8 to <G9 materials according to TRH14. The material has a thickness of up to 0.50 m.

The residual material is underlain by a highly to moderately weathered, soft to hard rock, siltstone bedrock material encountered from a depth of 1.35 mbgl.

The representative soil profile and a more generalised soil profile with photographs are shown in the figures below:



Photo 2: AM TP4 Representative soil profile



4.3.3 New Warehouse Extension (South of the existing Structure)

Six test pits (AM TP 5 to AM TP10) were excavated at the footprint of the proposed warehouse extension. On a localised portion of the site, the site is covered with a 0.25 m thick, reinforced concrete, with the reinforce mesh encountered at 0.15 m.

The majority of the site is overlain by fill material from the earlier, on site, construction activities. The material is generally composed of moderately densely packed to densely packed gravel in a sandy clay matrix. The material is expected to have a high PI and clay content and classify as G7 according to TRH14. The material has a thickness in excess of 3.10 m in portions of the site.

At depth the fill material, in portions of the site, is underlain by residual siltstone material, generally composed of densely packed, soft, gravel in a sandy clay matrix. The material is expected to have a high PI and clay content and classify as G8 to G9 materials according to TRH14. The material has a thickness of up to 0.50 m.

The residual material is underlain by a highly to moderately weathered, soft to hard rock, siltstone bedrock material encountered from a depth of 1.75 to 2.95 mbgl (mean 2.52 mbgl). No bedrock material was encountered in test pits AM TP5, AM TP6 and AM TP7. There is no competent horizon identified in this portion of the site with bedrock expected well in excess of 3.0 mbgl.

The representative soil profile and a more generalised soil profile with photographs is shown in the figures below:



Figure 8: Generalised soil profile underlying the proposed southern extension

4.4 Groundwater Occurrences

Slight groundwater seepage was encountered in 1 of the 10 test pits, i.e. AM TP9, from a depth of 1.85 mbgl.

Pedogenic soil in the form of ferricrete was encountered in 2 of the 10 test pits. The pedogenic soil material is indicative that the soil horizons are not suitably drained, and that the seasonal occurrence of perched groundwater conditions is highly likely to occur over a portion of the site. Suitable subsoil drainage and dampness measures will have to be implemented and non-durable imported construction materials should be avoided.

The regional static groundwater level in the area is expected at approximately less than 10 mbgl.

4.5 Dynamic Cone Penetrometer (DCP) testing

Dynamic Cone Penetrometer (DCP) tests were conducted adjacent to test pits and in the bottom of selected test pits based on encountered soil conditions as deemed necessary. Detailed results and tables are attached in Appendix B for reference and applicable parameters will have to be provided to make the results more applicable to the project site. These interpretations will be done during report consultation as and if required.

4.6 Corrosivity testing

Corrosivity testing was conducted on selected soil samples. The measured pH and Electrical Conductivity values of the soil materials are summarised in the Table below. The soils in the project area classify as slightly acid to moderately alkaline with a pH between 6.47 and 8.38 and generally not corrosive with a conductivity well below 50 mS/m.

Table 3: Summarised soil corrosivity data

SAMPLE INFORMATION			SOIL CHEMISTRY				SOIL CORROSIVITY	
Number	Depth (m - m)	Material Origin	pH	Conductivity (mS/m)	Soil Resistivity (Ohm/m)	Moisture Content	Soil pH Class & Soil Corrosiveness (Conductivity)	Cathodic Protection Classification & Remarks (Resistivity)
AM2/1	0.25 - 1.10	Fill	8.38	1.475	-	9.6	Moderately Alkaline / Generally not corrosive	Not generally corrosive / Not generally required
AM4/1	0.85 - 1.35	Residual Siltstone	6.47	2.090	-	15.3	Slightly Acid / Generally not corrosive	Not generally corrosive / Not generally required
AM8/1	2.00 - 2.85	Residual Siltstone	6.74	1.753	-	19.2	Neutral / Generally not corrosive	Not generally corrosive / Not generally required
AM9/1	0.80 - 1.75	Ferruginised Residual Siltstone	7.61	0.963	-	13.9	Slightly Alkaline / Generally not corrosive	Not generally corrosive / Not generally required

4.7 Construction materials

The materials encountered and tested exhibit variable qualities. It is essential that proper quality control be conducted on all in-situ materials utilised during construction. Based on laboratory analysis the materials exhibit the following general properties:

- The sampled fill material classifies as G7 according to TRH14 with a CBR of 19-21 at 95% MOD AASHTO. Due to the variable composition of the fill material over the site it is not ideally recommended to be utilised. Potential application can be discussed as the fill encountered in the northern section of the site can be utilised as improved subgrade for the roads and pavements.
- The residual siltstone material classifies as G8 to G9 according to TRH14 with a CBR of 17-18 at 95% MOD AASHTO. This material is not recommended to be utilised due to low quality. Potential application can be discussed.
- The slightly weathered siltstone bedrock material encountered in portions of the site classifies as G8 according to TRH14 and is generally not suitable for use during construction. The material will break down rapidly to a G9 classification after excavation. The material is non-durable and prone to slaking and will break down rapidly when exposed to changing moisture conditions, with a resulting decreasing strength and downgraded classification. This material cannot be stockpiled for long as the quality will degrade rapidly and is not suitable for use as erosion control / durable material.

Utilisation of any of the materials can be discussed based on design requirements. There is no G7 or better quality in-situ materials available for use during construction. Suitable materials will have to be imported or in-situ materials will have to be stabilised with cement if utilised.

4.8 Safe bearing pressures

The following estimated safe bearing capacities are estimated based on the site investigation and interpretation of DCP results.

- | | |
|--------------------------------------|-----------|
| • Fill material | - 40 kPa |
| • Ferruginised residual siltstone | - 75 kPa |
| • Residual siltstone | - 50 kPa |
| • Siltstone bedrock (very soft rock) | - 100 kPa |
| • Siltstone bedrock (refusal of TLB) | - 500 kPa |

4.9 Heave potential

The foundation indicator results indicate that the materials encountered in the project area all have low expansive properties, indicating that these materials will have a low potential for heave on wetting up or shrinkage on drying out.

Experience of other nearby sites indicate that the residual siltstone and ferruginised residual siltstone materials can be medium expansive (as encountered at projects directly south of the project area). Although potential heave of the residual materials cannot be completely ruled out, the general problems with heave and shrinkage of these materials are expected to be minor.

4.10 Collapse / compressibility settlement potential

The fill and residual soil materials are potentially slightly to moderately compressible / collapsible, with general settlement less than 8% of layer thickness expected.

Consolidation test results utilised from a nearby geotechnical site investigation was utilised and indicate the following:

- The material is normally consolidated with a pre-consolidation pressure of 40 kPa
- 200 kPa load – settlement of 8 – 12 % of layer thickness
- 400 kPa load – settlement of 10 – 14 % of layer thickness

These results can be utilised as an indication of expected differential settlement under load.

4.11 Site Classification

Based on the results of the investigation the general site can be classified as follow:

- C2 – expected collapse / consolidation settlement > 10 mm
- H – potential heave / expansiveness up to 7.5 mm
- [P(perched gw)] – seasonal perched groundwater conditions expected [localised portions]
- [R] – shallow bedrock conditions < 1.20 mbgl [localised portions]
- The transported and residual soil materials are potentially moderately to very highly compressible / collapsible.

The NHBRC site classification designation is: **Site Class C2 – H – [P – R]**

4.12 Founding Recommendations

Based on the results of the investigation the following foundation recommendations are made:

- The Siltstone Bedrock material is a competent horizon for the founding of structures. It is recommended where possible that pad- and strip footings be founded on this horizon. This is most likely only feasible on the northern section of the site.
- There is no competent horizon identified < 2.0 mbgl in the proposed warehouse extension area in the southern portion of the site. It is recommended that the pad and strip footings be constructed on imported G5 or better fill materials (quartzitic material recommended) that is compacted to minimum 95% MOD AASHTO density, ensuring excavations adhered to recommended 45° rule and minimum thickness of 1.20 m below footing.
- Design recommendations will be discussed and finalised during report consultation.

5 SUMMARY

- AGES Omega (Pty) Ltd was appointed by HSC Consulting to conduct a geotechnical investigation for the proposed extension of the Automould Facility at the East London Industrial Development Zone, with the aim of determining and evaluating the engineering geological characteristics of the in-situ soil and rock material underlying the project area.
- The geotechnical investigation was aimed at specifically investigating the extension areas at Automould as follow:
 - Existing paved area to determine general pavement layers
 - Proposed road, hardstand, and utilities area north of the building
 - Existing hardstand area and perimeter for warehouse extension
- A total of 10 test pits, numbered AM TP 1 to AM TP10, was excavated on the project area utilising a JCB 3CX 4x4 TLB-type excavator (fitted with a rock bucket) on the 8th and 9th of June 2020 at positions indicated by the client. The TLB was obtained from Messrs. Plus Plant Hire in East London. The test pits were profiled according to the Guidelines for soil and rock profiling (2002)
- Disturbed and undisturbed soil samples was taken during the site investigation and submitted for detailed laboratory analysis for foundation indicators, atterberg limits, compaction characteristics, soil corrosivity and UCS testing. Processed data is summarised in Chapter 3 of this report and discussed in Chapter 4.
- A groundwater monitoring borehole occurs approximately 200 m to the north of the site. The positions of the monitoring boreholes are indicated in the figure below. The borehole is utilised for groundwater quality monitoring by the ELIDZ (historically). The static groundwater level recorded in 2012 was measured at 10.02 m at borehole EC/036/AM.
- The in-situ materials on site is generally not suitable for use during construction. It is recommended that suitable quartzitic materials be imported from commercial sources.
- Results of the investigation are discussed per platform in Chapter 4 of the report.
- It is recommended that on-site inspections of foundation trenches and excavations be carried out by AGES in order to identify and evaluate soil conditions at variance with those encountered during the investigation.

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APPENDIX A

Detailed test pit profile logs & photos

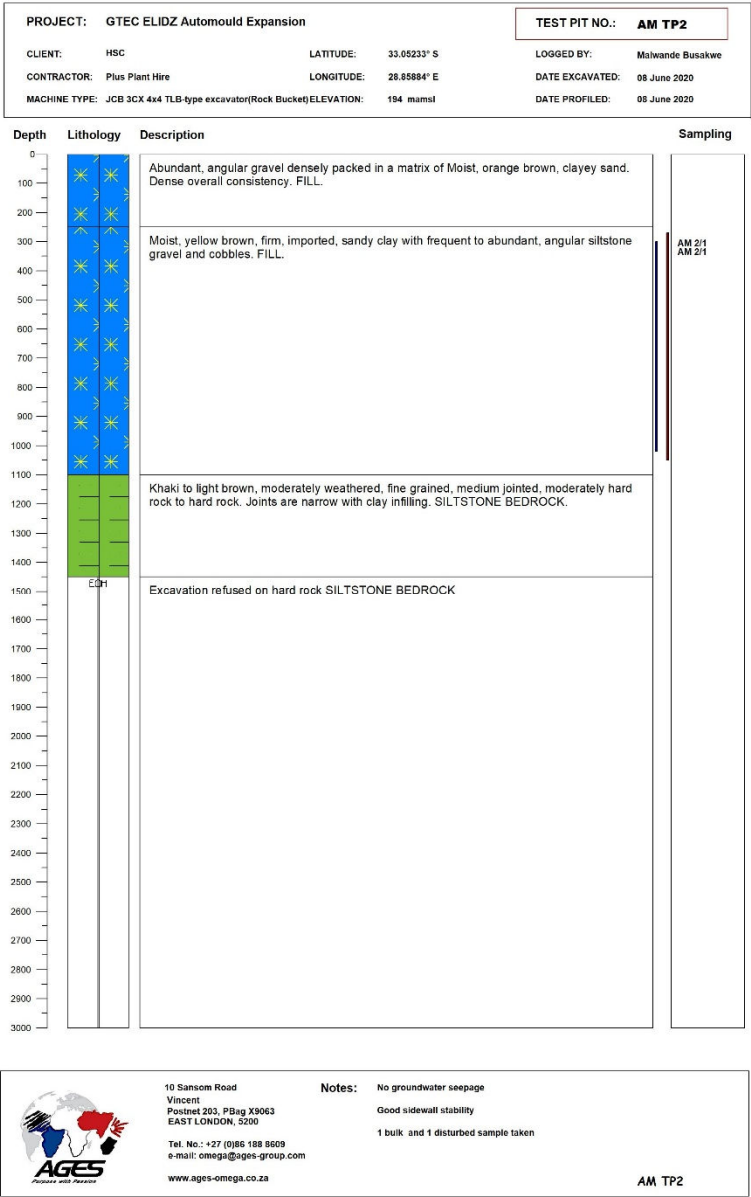
(please note longitudes are 27° not 28° as indicated on logs)

PROJECT: GTEC ELIDZ Automould Expansion		TEST PIT NO.: AM TP1	
CLIENT: HSC	LATITUDE: 33.05227° S	LOGGED BY: Malwande Busakwe	
CONTRACTOR: Plus Plant Hire	LONGITUDE: 28.85899° E	DATE EXCAVATED: 08 June 2020	
MACHINE TYPE: JCB 3CX 4x4 TLB-type excavator(Rock Bucket)	ELEVATION: 660 mamsl	DATE PROFILED: 08 June 2020	

Depth	Lithology	Description	Sampling
0	[Lithology Column with Blue and Yellow Patterns]	Abundant, angular gravel densely packed in a matrix of Moist, orange brown, clayey sand. Dense overall consistency. FILL.	AM 1/1
100		Moist, yellow brown, firm, imported, sandy clay with frequent to abundant, angular siltstone gravel and cobbles. FILL.	
1300	EGH	Excavation was stopped on FILL material with a firm consistency	
1400			
1500			
1600			
1700			
1800			
1900			
2000			
2100			
2200			
2300			
2400			
2500			
2600			
2700			
2800			
2900			
3000			


	10 Sanson Road Vincent Postnet 203, PBag X9063 EAST LONDON, 5200 Tel. No.: +27 (0)86 188 8609 e-mail: omega@ages-group.com www.ages-omega.co.za	Notes: No groundwater seepage Good sidewall stability 1 bulk sample taken
	AM TP1	





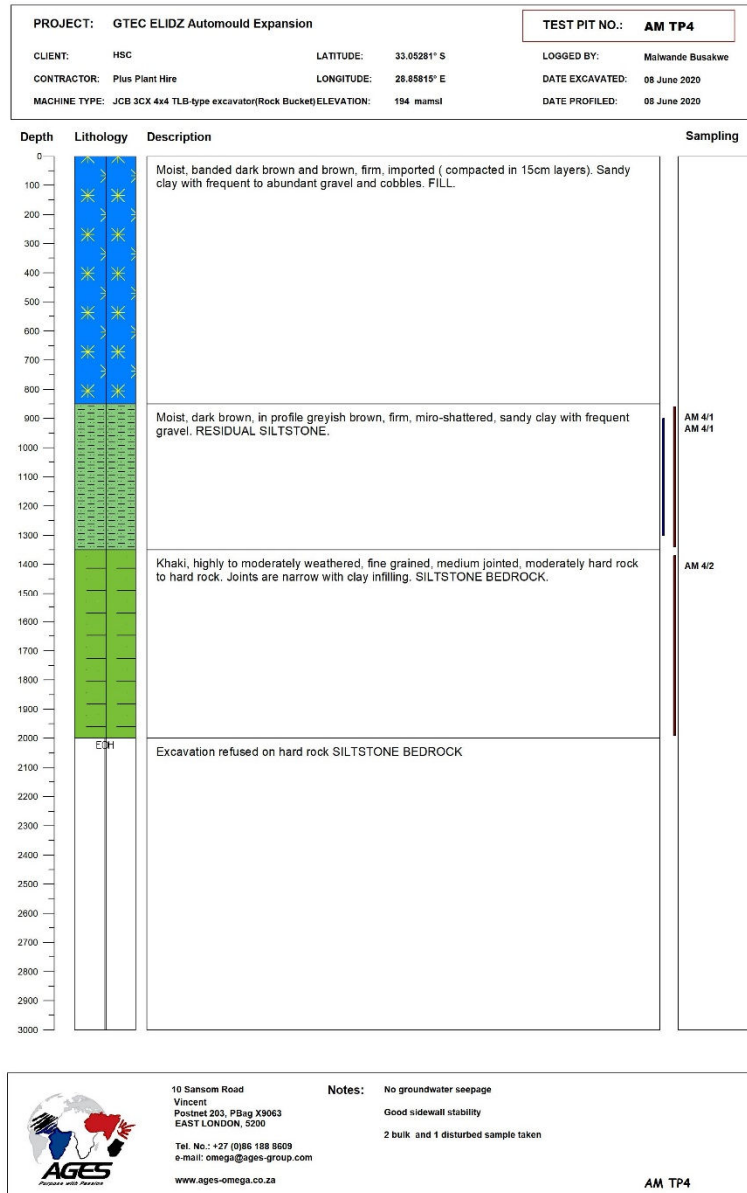
PROJECT: GTEC ELIDZ Automould Expansion		TEST PIT NO.: AM TP3	
CLIENT: HSC	LATITUDE: 33.05262° S	LOGGED BY: Malwande Busakwe	
CONTRACTOR: Plus Plant Hire	LONGITUDE: 28.85867° E	DATE EXCAVATED: 08 June 2020	
MACHINE TYPE: JCB 3CX 4x4 TLB-type excavator(Rock Bucket)ELEVATION: 194 mamsl		DATE PROFILED: 08 June 2020	

Depth	Lithology	Description	Sampling
0		Abundant, angular gravel and bricks moderately densely packed in a matrix of Moist, brown, sandy clay. Overall consistency is vet stiff. FILL.	
100			
200			
300			
400			
500			
600			
700			
800		Abundant, angular, soft gravel very densely packed in a matrix of Moist, yellow brown, silty clay. Overall consistency los very striff. RESIDUAL SILTSTONE / FILL.	
900			
1000		Khaki to light brown, moderately weathered, fine grained, medium jointed, moderately hard rock to hard rock. Joints are narrow with clay infilling. SILTSTONE BEDROCK.	
1100			
1200			
1300			
1400	EGH	Excavation refused on hard rock SILTSTONE BEDROCK	
1500			
1600			
1700			
1800			
1900			
2000			
2100			
2200			
2300			
2400			
2500			
2600			
2700			
2800			
2900			
3000			


	10 Sanson Road Vincent Postnet 203, PBag X9063 EAST LONDON, 5200 Tel. No.: +27 (0)86 188 8609 e-mail: omega@ages-group.com www.ages-omega.co.za	Notes: No groundwater seepage Good sidewall stability No sample taken


AM TP3






PROJECT: GTEC ELIDZ Automould Expansion		TEST PIT NO.: AM TP5	
CLIENT: HSC	LATITUDE: 33.05316° S	LOGGED BY: Malwande Busakwe	
CONTRACTOR: Plus Plant Hire	LONGITUDE: 27.85840° E	DATE EXCAVATED: 08 June 2020	
MACHINE TYPE: JCB 3CX 4x4 TLB-type excavator(Rock Bucket)	ELEVATION: 194 mamsl	DATE PROFILED: 08 June 2020	


Depth	Lithology	Description	Sampling
0		Moist, banded dark brown and brown, firm, imported (compacted in 15cm layers). Sandy clay with frequent to abundant gravel and cobbles. FILL.	AM 5/1
100			
200			
300			
400			
500			
600			
700			
800			
900			
1000			
1100			
1200			
1300			
1400			
1500			
1600			
1700			
1800			
1900			
2000			
2100			
2200			
2300			
2400			
2500			
2600			
2700			
2800		Moist, dark greyish brown blotched khaki, firm, imported, sandy clay. Roots. FILL.	
2900			
3000			
3100			
3200		Excavation was stopped on FILL material with a firm consistency	
3300			
3400			
3500			
3600			
3700			
3800			
3900			
4000			

	10 Sanson Road Vincent Postnet 203, PBag X9063 EAST LONDON, 5200 Tel. No.: +27 (0)86 188 8609 e-mail: omega@ages-group.com www.ages-omega.co.za	Notes: No groundwater seepage Good sidewall stability 2 bulk and 1 disturbed sample taken
	AM TP5	



PROJECT: GTEC ELIDZ Automould Expansion		TEST PIT NO.: AM TP6	
CLIENT: HSC	LATITUDE: 33.05338° S	LOGGED BY: Malwande Busakwe	
CONTRACTOR: Plus Plant Hire	LONGITUDE: 27.05865° E	DATE EXCAVATED: 08 June 2020	
MACHINE TYPE: JCB 3CX 4x4 TLB-type excavator(Rock Bucket)	ELEVATION: 194 mamsl	DATE PROFILED: 08 June 2020	

Depth	Lithology	Description	Sampling
0		Moist, banded dark brown and brown, firm, imported (compacted in 15cm layers). Sandy clay with frequent to abundant gravel and cobbles. FILL.	
100			
200			
300			
400			
500			
600			
700			
800			
900			
1000			
1100			
1200			
1300			
1400			
1500			
1600			
1700			
1800			
1900			
2000			
2100			
2200			
2300			
2400			
2500			
2600			
2700			
2800			
2900		Moist, dark greyish brown blotched khaki, firm, imported, sandy clay. Roots. FILL.	
3000		Excavation was stopped on FILL material with a firm consistency.	
3100			
3200			
3300			
3400			
3500			
3600			
3700			
3800			
3900			
4000			

	10 Sanson Road Vincent Postnet 203, PBag X9063 EAST LONDON, 5200 Tel. No.: +27 (0)86 188 8609 e-mail: omega@ages-group.com www.ages-omega.co.za	Notes: No groundwater seepage Poor sidewall stability No sample taken
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AM TP6



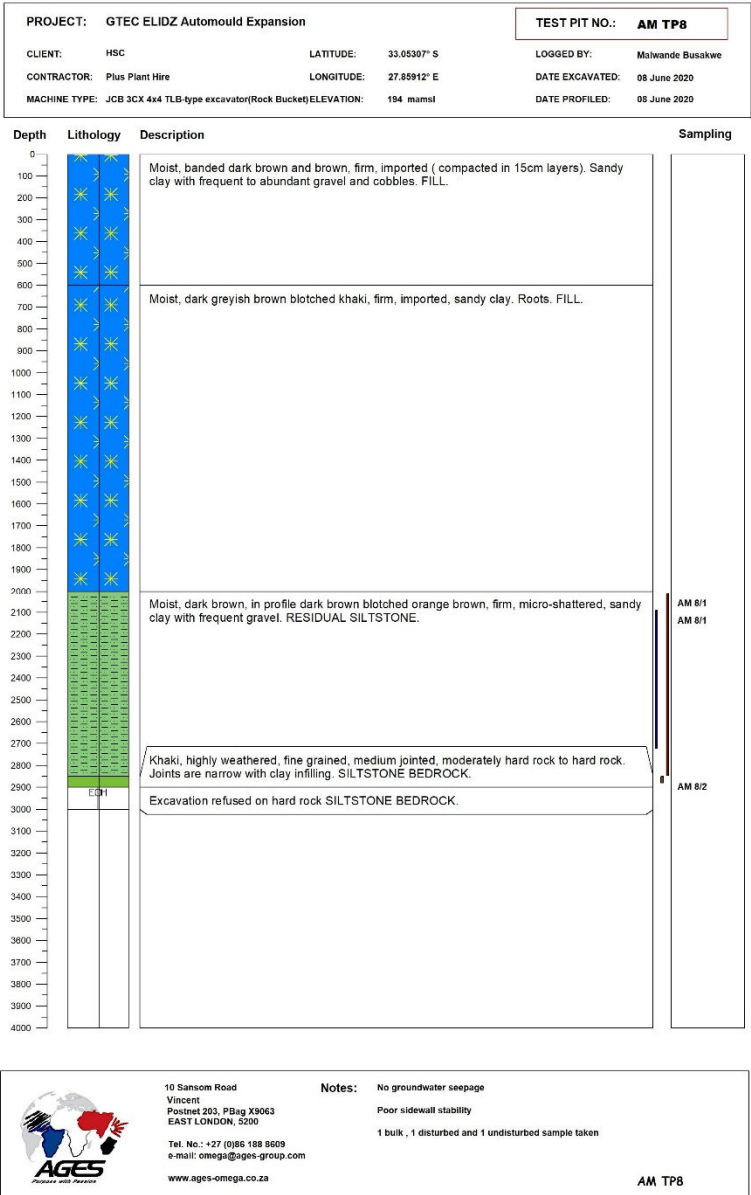
PROJECT: GTEC ELIDZ Automould Expansion		TEST PIT NO.: AM TP7	
CLIENT: HSC	LATITUDE: 33.05321° S	LOGGED BY: Malwande Busakwe	
CONTRACTOR: Plus Plant Hire	LONGITUDE: 27.85891° E	DATE EXCAVATED: 08 June 2020	
MACHINE TYPE: JCB 3CX 4x4 TLB-type excavator(Rock Bucket)	ELEVATION: 194 mamsl	DATE PROFILED: 08 June 2020	

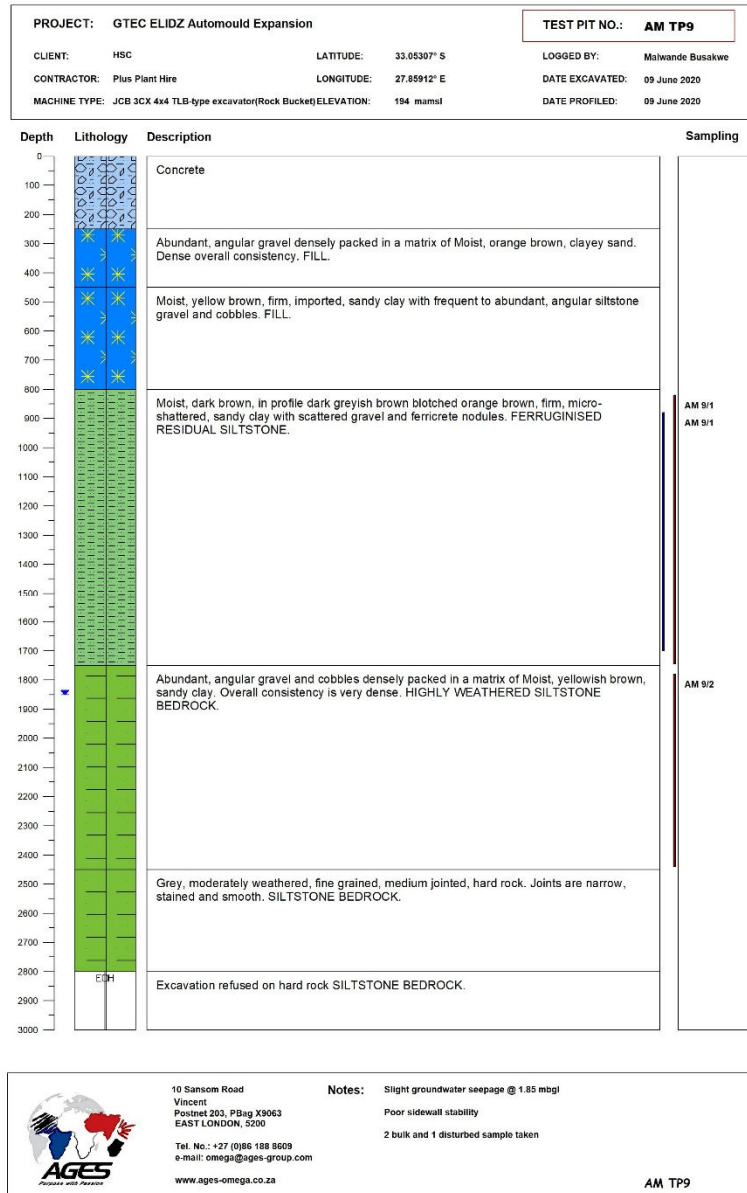
Depth	Lithology	Description	Sampling	
0		Moist, banded dark brown and brown, firm, imported (compacted in 15cm layers). Sandy clay with frequent to abundant gravel and cobbles. FILL.		
100				
200				
300				
400				
500				
600				
700				
800				
900				
1000				
1100				
1200				
1300				
1400				
1500				
1600				
1700				
1800				
1900				
2000				
2100			Moist, dark greyish brown blotched khaki, firm, imported, sandy clay. Roots. FILL.	AM 7/1
2200				
2300				
2400				
2500				
2600				
2700				
2800				
2900				
3000		Excavation was stopped on FILL material with a firm consistency.		
3100				
3200				
3300				
3400				
3500				
3600				
3700				
3800				
3900				
4000				

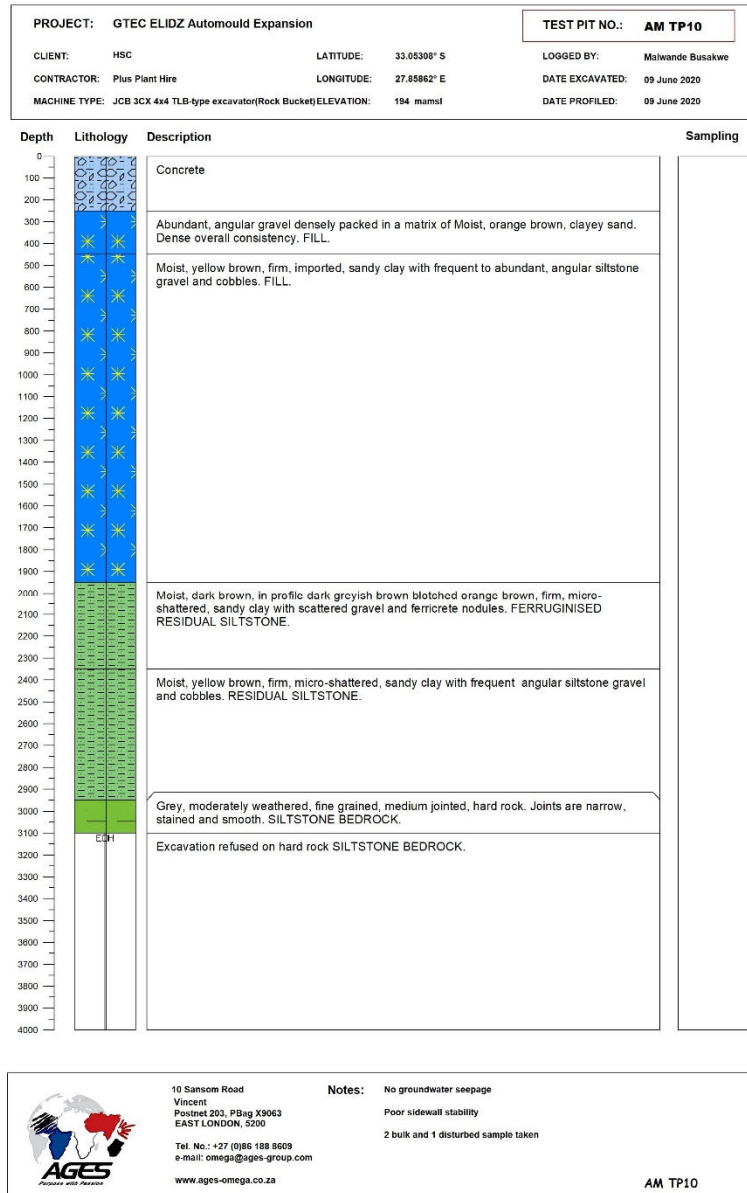
	10 Sanson Road Vincent Postnet 203, PBag X9063 EAST LONDON, 5200	Notes: No groundwater seepage Poor sidewalk stability 1 bulk samples taken
	Tel. No.: +27 (0)86 188 8609 e-mail: omega@ages-group.com	
	www.ages-omega.co.za	

AM TP7









APPENDIX B

Dynamic Cone Penetrometer data

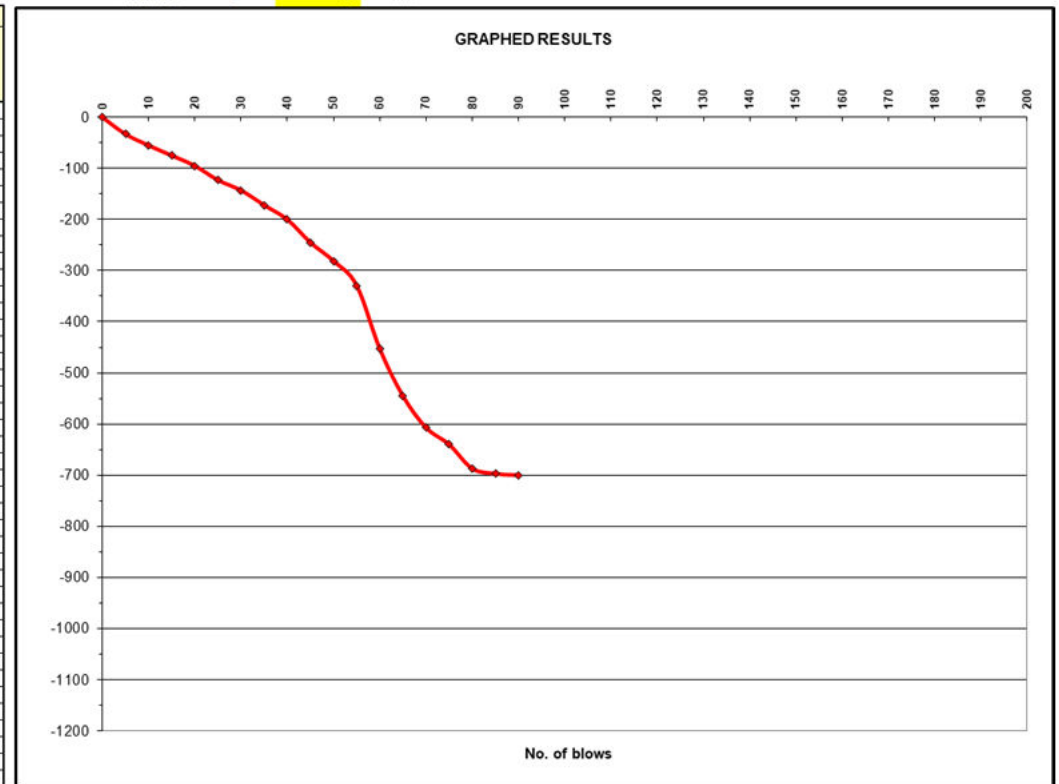
ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

PROJECT: ELIDZ Automould Expansion

DEPTH: Surface
Traffic Stress σ'_v 250 kPa
Thickness D 150 mm

CONDUCTED ON: Monday, June 8, 2020

NO. OF BLOWS	DCP 1									
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR% (Kleyn, 1984)	E (MPa) (Packard, 1973)	E (De Beer, 1991) MPa	E (Jianzhou et al., 1999)	ρ (mm)	k (kN/m ³)
0	75	0	0.0							
5	108	-33	6.6	371	37	62	150	162	0.0002	1079
10	130	-55	4.4	577	62	85	231	190	0.0002	1264
15	150	-75	4.0	640	70	91	256	197	0.0002	1312
20	170	-95	4.0	640	70	91	256	197	0.0002	1312
25	198	-123	5.6	443	46	70	179	173	0.0002	1151
30	218	-143	4.0	640	70	91	256	197	0.0002	1312
35	247	-172	5.8	427	44	69	173	170	0.0002	1135
40	275	-200	5.6	443	46	70	179	173	0.0002	1151
45	320	-245	9.0	264	25	49	108	143	0.0003	956
50	356	-281	7.2	337	33	58	137	157	0.0002	1043
55	404	-329	9.6	246	23	46	101	140	0.0003	933
60	528	-453	24.8	88	7	22	37	97	0.0004	644
65	620	-545	18.4	121	10	28	51	109	0.0003	724
70	682	-607	12.4	186	17	38	77	127	0.0003	844
75	715	-640	6.6	371	37	62	150	162	0.0002	1079
80	762	-687	9.4	252	24	47	103	141	0.0003	940
85	772	-697	2.0	1362	170	156	535	258	0.0001	1720
90	775	-700	0.6	5061	389	259	1919	413	0.0001	2750
95										
100										
105										
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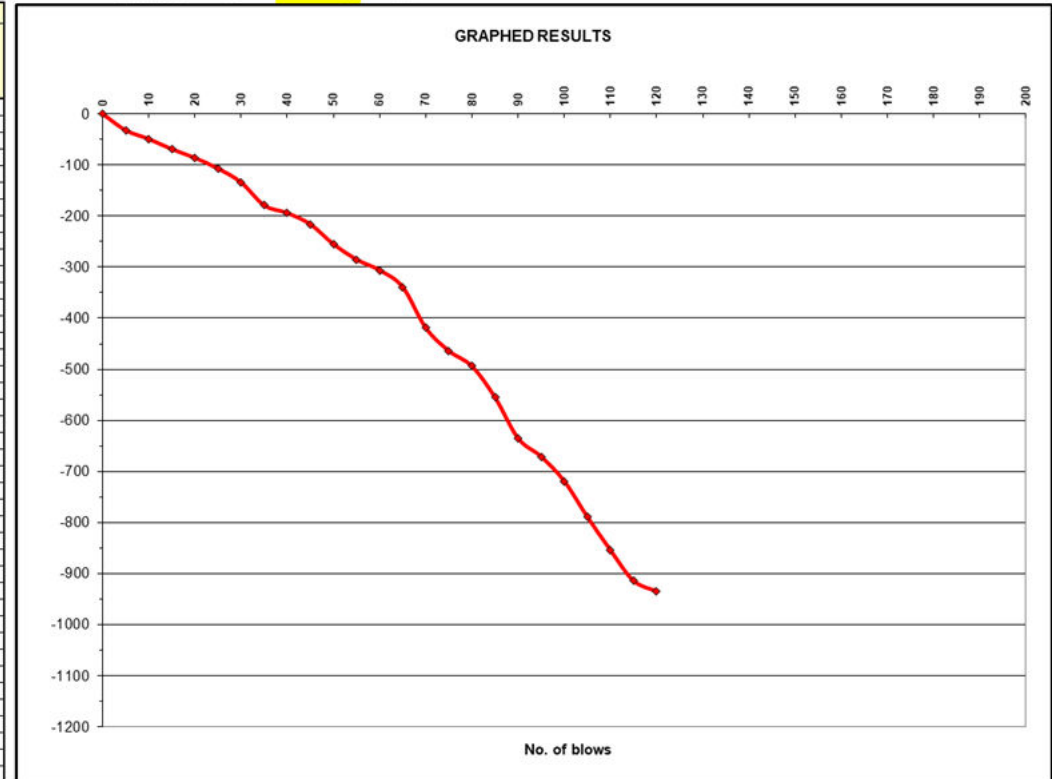
ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

PROJECT: **ELIDZ Automould Expansion**

DEPTH: Surface
 Traffic Stress σ'_v 250 kPa
 Thickness D 150 mm

CONDUCTED ON: Monday, June 8, 2020

NO. OF BLOWS	DCP 2								
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR% (Kleyn, 1984)	E (MPa) (Packard, 1973)	E (De Beer, 1991) MPa	E (Jianzhou et al., 1999)	k (kN/m ³)
0	96	0	0.0						
5	128	-32	6.4	383	39	64	155	164	0.0002
10	145	-49	3.4	764	87	104	304	210	0.0002
15	165	-69	4.0	640	70	91	256	197	0.0002
20	182	-86	3.4	764	87	104	304	210	0.0002
25	203	-107	4.2	607	66	88	243	193	0.0002
30	230	-134	5.4	461	48	72	186	175	0.0002
35	275	-179	9.0	264	25	49	108	143	0.0003
40	290	-194	3.0	876	102	114	348	220	0.0002
45	312	-216	4.4	577	62	85	231	190	0.0002
50	351	-255	7.8	309	30	55	126	152	0.0002
55	381	-285	6.0	411	42	67	167	168	0.0002
60	402	-306	4.2	607	66	88	243	193	0.0002
65	435	-339	6.6	371	37	62	150	162	0.0002
70	515	-419	16.0	141	12	31	59	115	0.0003
75	560	-464	9.0	264	25	49	108	143	0.0003
80	590	-494	6.0	411	42	67	167	168	0.0002
85	651	-555	12.2	190	17	39	78	127	0.0003
90	731	-635	16.0	141	12	31	59	115	0.0003
95	767	-671	7.2	337	33	58	137	157	0.0002
100	815	-719	9.6	246	23	46	101	140	0.0003
105	885	-789	14.0	163	14	35	68	121	0.0003
110	950	-854	13.0	177	16	37	73	124	0.0003
115	1010	-914	12.0	193	17	39	80	128	0.0003
120	1030	-934	4.0	640	70	91	256	197	0.0002
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ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

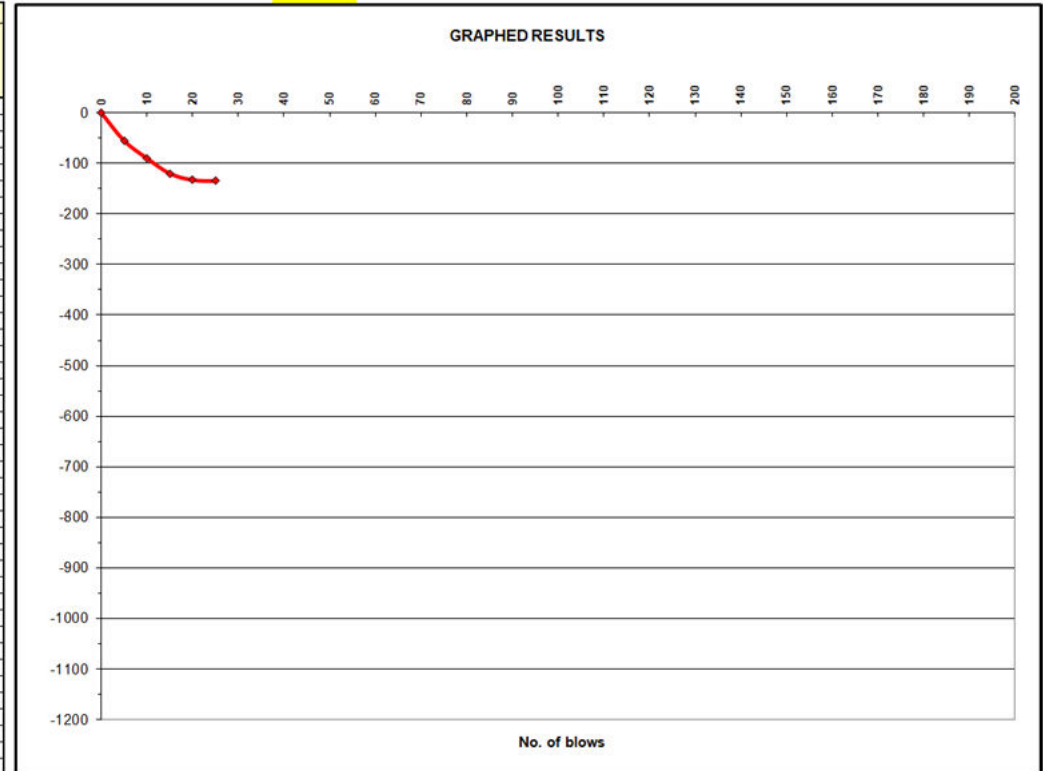
PROJECT: **ELIDZ Automould Expansion**

DEPTH: Surface

Traffic Stress σ'_v 250 kPa
 Thickness D 150 mm

CONDUCTED ON: Monday, June 8, 2020

NO. OF BLOWS	DCP 3									
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR% (Kleyn, 1984)	E (MPa) (Packard, 1973)	E (De Beer, 1991) MPa	E (Jianzhou et al., 1999)	ρ (mm)	k (kN/m ³)
0	85	0	0.0							
5	140	-55	11.0	212	20	42	87	133	0.0003	884
10	175	-90	7.0	348	35	59	141	158	0.0002	1055
15	205	-120	6.0	411	42	67	167	168	0.0002	1120
20	218	-133	2.6	1023	122	127	405	233	0.0002	1552
25	220	-135	0.4	7873	442	279	2952	483	0.0001	3221
30	refusal									
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40										
45										
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ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

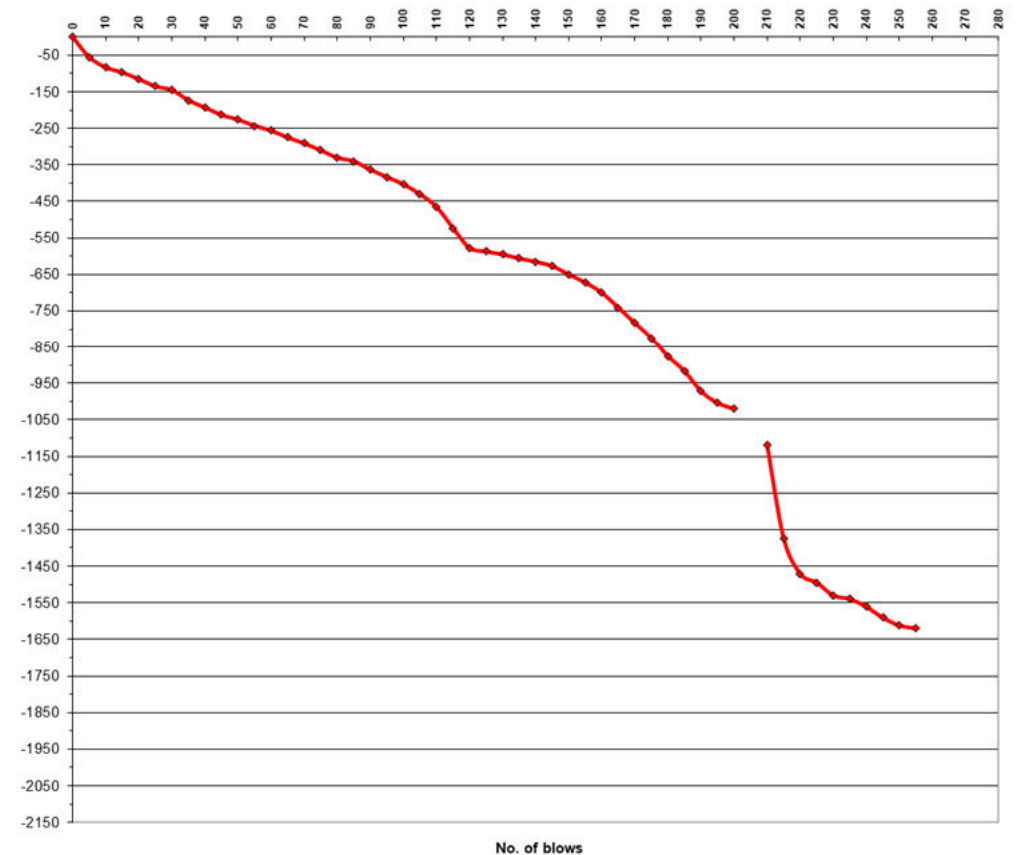
PROJECT: ELIDZ Automould Expansion

DEPTH: Surface
 Traffic Stress σ'_v 250 kPa
 Thickness D 150 mm

CONDUCTED ON: Monday, June 8, 2020

NO. OF BLOWS	DCP 4									
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR% (Kleyn, 1984)	E (MPa) (Packard, 1973)	E (De Beer, 1991) MPa	E (Jianzhou et al., 1999)	ρ (mm)	k (kN/m3)
0	95	0	0.0							
5	150	-55	11.0	212	20	42	87	133	0.0003	884
10	178	-83	5.6	443	46	70	179	173	0.0002	1151
15	192	-97	2.8	944	111	120	374	226	0.0002	1508
20	210	-115	3.6	718	81	99	286	205	0.0002	1367
25	230	-135	4.0	640	70	91	256	197	0.0002	1312
30	240	-145	2.0	1362	170	156	535	258	0.0001	1720
35	268	-173	5.6	443	46	70	179	173	0.0002	1151
40	288	-193	4.0	640	70	91	256	197	0.0002	1312
45	308	-213	4.0	640	70	91	256	197	0.0002	1312
50	321	-226	2.6	1023	122	127	405	233	0.0002	1552
55	338	-243	3.4	764	87	104	304	210	0.0002	1398
60	351	-256	2.6	1023	122	127	405	233	0.0002	1552
65	370	-275	3.8	677	75	95	270	201	0.0002	1339
70	386	-291	3.2	816	94	109	325	215	0.0002	1432
75	405	-310	3.8	677	75	95	270	201	0.0002	1339
80	425	-330	4.0	640	70	91	256	197	0.0002	1312
85	435	-340	2.0	1362	170	156	535	258	0.0001	1720
90	458	-363	4.6	550	59	82	221	186	0.0002	1243
95	478	-383	4.0	640	70	91	256	197	0.0002	1312
100	498	-403	4.0	640	70	91	256	197	0.0002	1312
105	525	-430	5.4	461	48	72	186	175	0.0002	1167
110	560	-465	7.0	348	35	59	141	158	0.0002	1055
115	618	-523	11.6	201	18	40	83	130	0.0003	866
120	672	-577	10.8	217	20	42	89	134	0.0003	891
125	682	-587	2.0	1362	170	156	535	258	0.0001	1720
130	690	-595	1.6	1737	206	176	677	281	0.0001	1876
135	701	-606	2.2	1228	151	145	483	249	0.0002	1657
140	710	-615	1.8	1528	185	165	598	269	0.0001	1792
145	722	-627	2.4	1117	135	136	440	240	0.0002	1602
150	745	-650	4.6	550	59	82	221	186	0.0002	1243
155	767	-672	4.4	577	62	85	231	190	0.0002	1264
160	795	-700	5.6	443	46	70	179	173	0.0002	1151
165	836	-741	8.2	293	28	52	120	149	0.0003	992
170	878	-783	8.4	285	27	51	116	147	0.0003	983
175	920	-825	8.4	285	27	51	116	147	0.0003	983
180	971	-876	10.2	231	21	44	95	137	0.0003	911
185	1012	-917	8.2	293	28	52	120	149	0.0003	992
190	1067	-972	11.0	212	20	42	87	133	0.0003	884
195	1099	-1004	6.4	383	39	64	155	164	0.0002	1092
200	1115	-1020	3.2	816	94	109	325	215	0.0002	1432
205										
210	1120	-1120	224.0	8	0	4	4	41	0.0009	273
215	1375	-1375	51.0	40	3	13	17	73	0.0005	486
220	1471	-1471	19.2	116	10	27	48	107	0.0004	712
225	1495	-1495	4.8	525	56	79	211	183	0.0002	1222
230	1530	-1530	7.0	348	35	59	141	158	0.0002	1055
235	1540	-1540	2.0	1362	170	156	535	258	0.0001	1720
240	1561	-1561	4.2	607	66	88	243	193	0.0002	1288
245	1591	-1591	6.0	411	42	67	167	168	0.0002	1120
250	1612	-1612	4.2	607	66	88	243	193	0.0002	1288
255	1620	-1620	1.6	1737	206	176	677	281	0.0001	1876
260										
265										

GRAPHED RESULTS



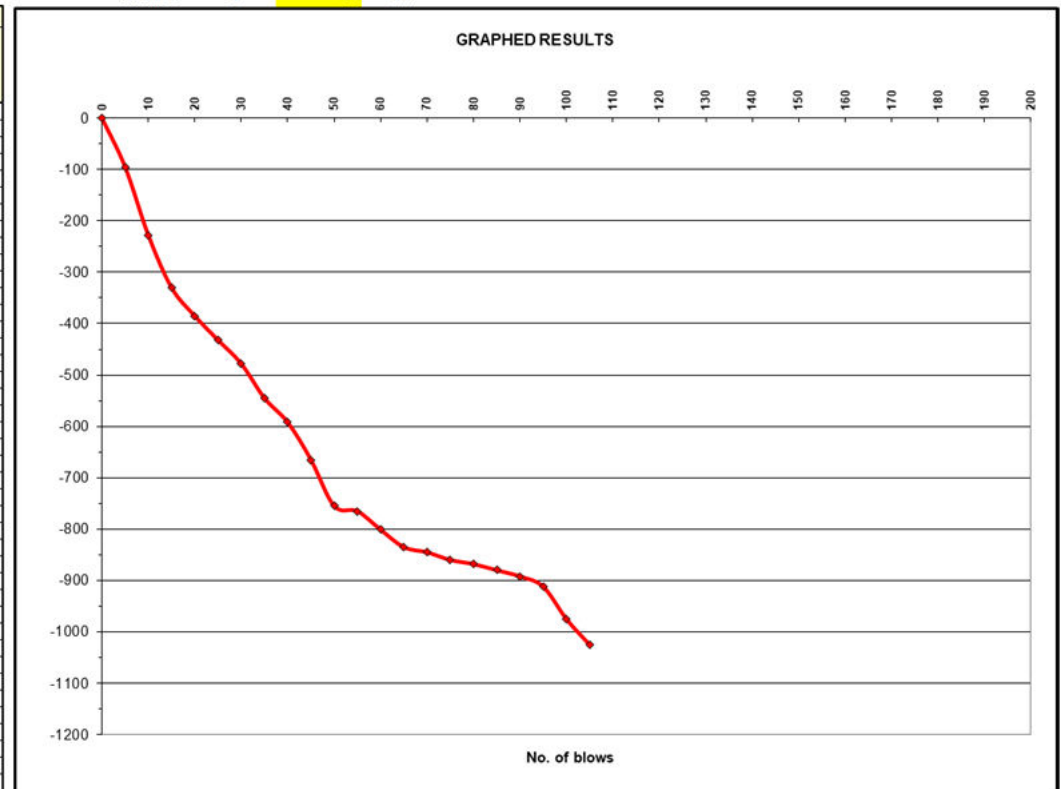
ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

PROJECT: ELIDZ Automould Expansion

DEPTH: Surface
 Traffic Stress σ'_v 250 kPa
 Thickness D 150 mm

CONDUCTED ON: Monday, June 8, 2020

NO. OF BLOWS	DCP 5								
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR% (Kleyn, 1984)	E (MPa) (Packard, 1973)	E (De Beer, 1991) MPa	E (Jianzhou et al., 1999)	k (kN/m ³)
0	100	0	0.0						
5	195	-95	19.0	117	10	27	49	107	0.0003
10	328	-228	26.6	81	6	21	34	94	0.0004
15	430	-330	20.4	108	9	26	45	104	0.0004
20	485	-385	11.0	212	20	42	87	133	0.0003
25	532	-432	9.4	252	24	47	103	141	0.0003
30	578	-478	9.2	258	24	48	106	142	0.0003
35	645	-545	13.4	171	15	36	71	123	0.0003
40	692	-592	9.4	252	24	47	103	141	0.0003
45	765	-665	14.6	156	14	34	65	119	0.0003
50	855	-755	18.0	124	10	29	52	109	0.0003
55	865	-765	2.0	1362	170	156	535	258	0.0001
60	901	-801	7.2	337	33	58	137	157	0.0002
65	935	-835	6.8	359	36	61	146	160	0.0002
70	945	-845	2.0	1362	170	156	535	258	0.0001
75	960	-860	3.0	876	102	114	348	220	0.0002
80	968	-868	1.6	1737	206	176	677	281	0.0001
85	980	-880	2.4	1117	135	136	440	240	0.0002
90	992	-892	2.4	1117	135	136	440	240	0.0002
95	1012	-912	4.0	640	70	91	256	197	0.0002
100	1075	-975	12.6	183	16	38	76	126	0.0003
105	1125	-1025	10.0	236	22	45	97	138	0.0003
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ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

PROJECT: ELIDZ Automould Expansion

DEPTH: Surface

Traffic Stress σ'_v 250 kPa
 Thickness D 150 mm

CONDUCTED ON: Monday, June 8, 2020

NO. OF BLOWS	DCP 6									
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR% (Kleyn, 1984)	E (MPa) (Packard, 1973)	E (De Beer, 1991) MPa	E (Jianzhou et al., 1999)	ρ (mm)	k (kN/m3)
0	75	0	0.0							
5	150	-75	15.0	152	13	33	63	118	0.0003	784
10	250	-175	20.0	111	9	26	46	105	0.0004	701
15	465	-390	43.0	48	3	15	21	78	0.0005	520
20	515	-440	10.0	236	22	45	97	138	0.0003	918
25	570	-495	11.0	212	20	42	87	133	0.0003	884
30	635	-560	13.0	177	16	37	73	124	0.0003	829
35	710	-635	15.0	152	13	33	63	118	0.0003	784
40	745	-670	7.0	348	35	59	141	158	0.0002	1055
45	825	-750	16.0	141	12	31	59	115	0.0003	764
50	896	-821	14.2	161	14	34	67	120	0.0003	801
55	985	-910	17.8	126	11	29	52	110	0.0003	733
60	1045	-970	12.0	193	17	39	80	128	0.0003	855
65	1130	-1055	17.0	132	11	30	55	112	0.0003	746
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ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

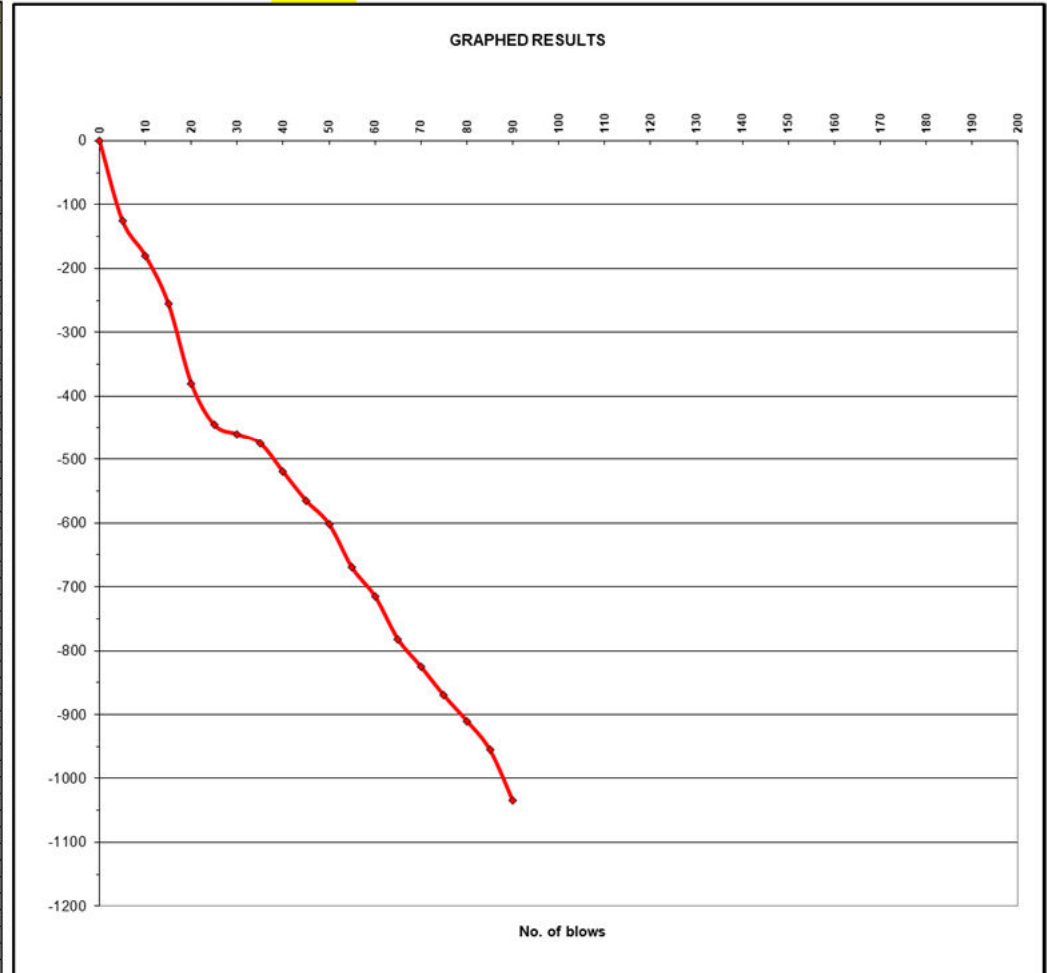
PROJECT: ELIDZ Automould Expansion

DEPTH: Surface

Traffic Stress σ'_v 250 kPa
 Thickness D 150 mm

CONDUCTED ON: Tuesday, June 9, 2020

NO. OF BLOWS	DCP 7									
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR% (Kleyn, 1984)	E (MPa) (Packard, 1973)	E (De Beer, 1991) MPa	E (Jianzhou et al., 1999)	ρ (mm)	k (kN/m ³)
0	90	0	0.0							
5	215	-125	25.0	87	7	22	37	96	0.0004	642
10	270	-180	11.0	212	20	42	87	133	0.0003	884
15	345	-255	15.0	152	13	33	63	118	0.0003	784
20	470	-380	25.0	87	7	22	37	96	0.0004	642
25	535	-445	13.0	177	16	37	73	124	0.0003	829
30	550	-460	3.0	876	102	114	348	220	0.0002	1468
35	565	-475	3.0	876	102	114	348	220	0.0002	1468
40	610	-520	9.0	264	25	49	108	143	0.0003	956
45	655	-565	9.0	264	25	49	108	143	0.0003	956
50	692	-602	7.4	327	32	57	133	155	0.0002	1032
55	760	-670	13.6	169	15	35	70	122	0.0003	814
60	805	-715	9.0	264	25	49	108	143	0.0003	956
65	872	-782	13.4	171	15	36	71	123	0.0003	819
70	915	-825	8.6	278	27	51	114	146	0.0003	974
75	960	-870	9.0	264	25	49	108	143	0.0003	956
80	1000	-910	8.0	301	29	53	123	150	0.0002	1001
85	1045	-955	9.0	264	25	49	108	143	0.0003	956
90	1125	-1035	16.0	141	12	31	59	115	0.0003	764
95										
100										
105										
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ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

PROJECT: ELIDZ Automould Expansion

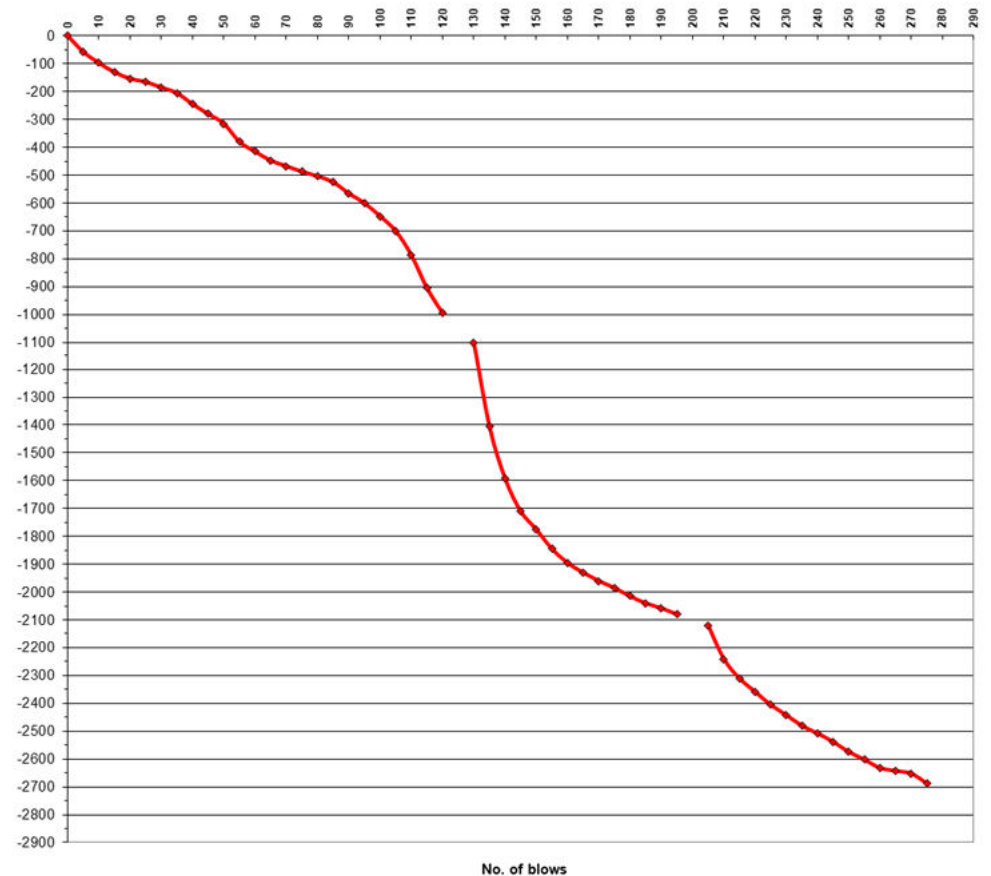
DEPTH: Surface

Traffic Stress σ'_v 250 kPa
 Thickness D 150 mm

CONDUCTED ON: Tuesday, June 9, 2020

NO. OF BLOWS	DCP 8									
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR% (Kleyn, 1984)	E (MPa) (Packard, 1973)	E (De Beer, 1991) MPa	E (Jianzhou et al., 1999)	ρ (mm)	k (kN/m ³)
0	105	0	0.0							
5	162	-57	11.4	204	19	41	84	131	0.0003	872
10	202	-97	8.0	301	29	53	123	150	0.0002	1001
15	235	-130	6.6	371	37	62	150	162	0.0002	1079
20	258	-153	4.6	550	59	82	221	186	0.0002	1243
25	270	-165	2.4	1117	135	136	440	240	0.0002	1602
30	290	-185	4.0	640	70	91	256	197	0.0002	1312
35	310	-205	4.0	640	70	91	256	197	0.0002	1312
40	350	-245	8.0	301	29	53	123	150	0.0002	1001
45	385	-280	7.0	348	35	59	141	158	0.0002	1055
50	420	-315	7.0	348	35	59	141	158	0.0002	1055
55	485	-380	13.0	177	16	37	73	124	0.0003	829
60	520	-415	7.0	348	35	59	141	158	0.0002	1055
65	552	-447	6.4	383	39	64	155	164	0.0002	1092
70	572	-467	4.0	640	70	91	256	197	0.0002	1312
75	592	-487	4.0	640	70	91	256	197	0.0002	1312
80	608	-503	3.2	816	94	109	325	215	0.0002	1432
85	630	-525	4.4	577	62	85	231	190	0.0002	1264
90	670	-565	8.0	301	29	53	123	150	0.0002	1001
95	705	-600	7.0	348	35	59	141	158	0.0002	1055
100	752	-647	9.4	252	24	47	103	141	0.0003	940
105	805	-700	10.6	221	20	43	91	135	0.0003	897
110	892	-787	17.4	129	11	29	64	111	0.0003	740
115	1010	-905	23.6	92	7	23	39	99	0.0004	657
120	1100	-995	18.0	124	10	29	52	109	0.0003	730
125										
130	1101	-1101	220.2	8	0	4	4	41	0.0009	275
135	1405	-1405	60.8	33	2	11	14	68	0.0006	454
140	1592	-1592	37.4	56	4	16	24	82	0.0005	549
145	1710	-1710	23.6	92	7	23	39	99	0.0004	657
150	1775	-1775	13.0	177	16	37	73	124	0.0003	829
155	1845	-1845	14.0	163	14	35	68	121	0.0003	805
160	1895	-1895	10.0	236	22	45	97	138	0.0003	918
165	1930	-1930	7.0	348	35	59	141	158	0.0002	1055
170	1960	-1960	6.0	411	42	67	167	168	0.0002	1120
175	1985	-1985	5.0	502	53	77	202	180	0.0002	1203
180	2015	-2015	6.0	411	42	67	167	168	0.0002	1120
185	2040	-2040	5.0	502	53	77	202	180	0.0002	1203
190	2058	-2058	3.6	718	81	99	286	205	0.0002	1367
195	2080	-2080	4.4	577	62	85	231	190	0.0002	1264
200										
205	2120	-2120	424.0	4	0	2	2	32	0.0012	213
210	2240	-2240	24.0	91	7	23	38	98	0.0004	652
215	2310	-2310	14.0	163	14	35	68	121	0.0003	805
220	2358	-2358	9.6	246	23	46	101	140	0.0003	933
225	2405	-2405	9.4	252	24	47	103	141	0.0003	940
230	2442	-2442	7.4	327	32	57	133	155	0.0002	1032
235	2480	-2480	7.6	318	31	56	130	153	0.0002	1022
240	2508	-2508	5.6	443	46	70	179	173	0.0002	1151
245	2538	-2538	6.0	411	42	67	167	168	0.0002	1120
250	2574	-2574	7.2	337	33	58	137	157	0.0002	1043
255	2602	-2602	5.6	443	46	70	179	173	0.0002	1151
260	2632	-2632	6.0	411	42	67	167	168	0.0002	1120
265	2642	-2642	2.0	1362	170	156	535	258	0.0001	1720
270	2652	-2652	2.0	1362	170	156	535	258	0.0001	1720
275	2688	-2688	7.2	337	33	58	137	157	0.0002	1043
	refusal									

GRAPHED RESULTS



ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

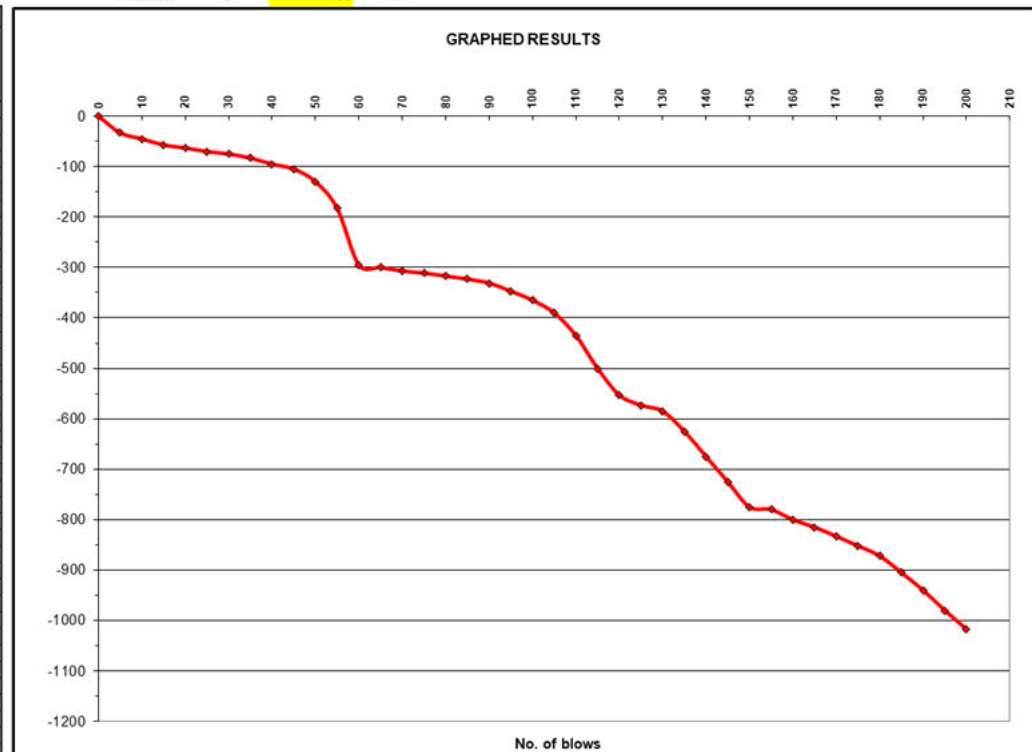
PROJECT: ELIDZ Automould Expansion

DEPTH: Surface

Traffic Stress σ'_v 250 kPa
 Thickness D 150 mm

CONDUCTED ON: Tuesday, June 9, 2020

NO. OF BLOWS	DCP 9									
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR% (Kleyn, 1984)	E (MPa) (Packard, 1973)	E (De Beer, 1991) MPa	E (Jianzhou et al., 1999)	ρ (mm)	k (kN/m ³)
0	75	0	0.0							
5	108	-33	6.6	371	37	62	150	162	0.0002	1079
10	120	-45	2.4	1117	135	136	440	240	0.0002	1602
15	132	-57	2.4	1117	135	136	440	240	0.0002	1602
20	138	-63	1.2	2377	263	204	919	315	0.0001	2099
25	145	-70	1.4	2010	232	189	781	296	0.0001	1976
30	150	-75	1.0	2900	300	221	1116	338	0.0001	2253
35	158	-83	1.6	1737	206	176	677	281	0.0001	1876
40	170	-95	2.4	1117	135	136	440	240	0.0002	1602
45	180	-105	2.0	1362	170	156	535	258	0.0001	1720
50	205	-130	5.0	502	53	77	202	180	0.0002	1203
55	258	-183	10.6	221	20	43	91	135	0.0003	897
60	370	-295	22.4	98	8	24	41	101	0.0004	670
65	375	-300	1.0	2900	300	221	1116	338	0.0001	2253
70	382	-307	1.4	2010	232	189	781	296	0.0001	1976
75	386	-311	0.8	3699	342	239	1414	369	0.0001	2458
80	392	-317	1.2	2377	263	204	919	315	0.0001	2099
85	398	-323	1.2	2377	263	204	919	315	0.0001	2099
90	406	-331	1.6	1737	206	176	677	281	0.0001	1876
95	422	-347	3.2	816	94	109	325	215	0.0002	1432
100	440	-365	3.6	718	81	99	286	205	0.0002	1367
105	465	-390	5.0	502	53	77	202	180	0.0002	1203
110	510	-435	9.0	264	25	49	108	143	0.0003	956
115	575	-500	13.0	177	16	37	73	124	0.0003	829
120	628	-553	10.6	221	20	43	91	135	0.0003	897
125	648	-573	4.0	640	70	91	256	197	0.0002	1312
130	660	-585	2.4	1117	135	136	440	240	0.0002	1602
135	700	-625	8.0	301	29	53	123	150	0.0002	1001
140	750	-675	10.0	236	22	45	97	138	0.0003	918
145	800	-725	10.0	236	22	45	97	138	0.0003	918
150	850	-775	10.0	236	22	45	97	138	0.0003	918
155	855	-780	1.0	2900	300	221	1116	338	0.0001	2253
160	875	-800	4.0	640	70	91	256	197	0.0002	1312
165	890	-815	3.0	876	102	114	348	220	0.0002	1468
170	908	-833	3.6	718	81	99	286	205	0.0002	1367
175	927	-852	3.8	677	75	95	270	201	0.0002	1339
180	947	-872	4.0	640	70	91	256	197	0.0002	1312
185	980	-905	6.6	371	37	62	150	162	0.0002	1079
190	1015	-940	7.0	348	35	59	141	158	0.0002	1055
195	1055	-980	8.0	301	29	53	123	150	0.0002	1001



ANALYSES OF DYNAMIC CONE PENETRATION TEST RESULTS

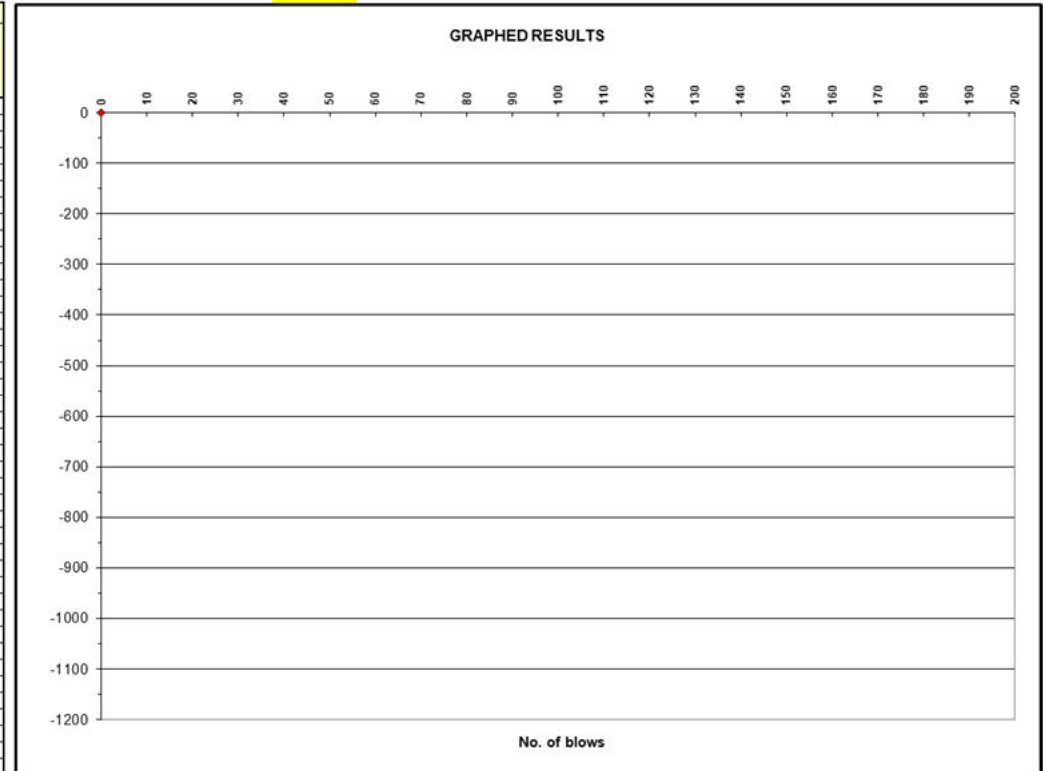
PROJECT: **ELIDZ Automould Expansion**

DEPTH: Surface

Traffic Stress σ'_v 250 kPa
 Thickness D 150 mm

CONDUCTED ON: Tuesday, June 9, 2020

NO. OF BLOWS	DCP 10									
	Values (mm)	Cumulative penetration (mm)	mm/blow	UCS (kPa)	CBR% (Kleyn, 1984)	E (MPa) (Packard, 1973)	E (De Beer, 1991) MPa	E (Jianzhou et al., 1999)	ρ (mm)	k (kN/m ³)
0	No DCP	0	0.0							
5										
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190										
195										
200										



APPENDIX C

Soil laboratory analysis certificates


ControlLab South Africa (Pty) Ltd

CIVIL ENGINEERING MATERIALS AND GEOTECHNICAL LABORATORY

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ISO/IEC 17025:2005 Accredited Laboratory

 HEAD OFFICE: 1 Alfred Road, Vincent 5247, Tel: 043 726 7859, Fax: 043 726 7426
 CENTRAL LABORATORY: 10 St Pauls Road, East London, 5201, Tel: 043 722 5420 / 722 8565, Fax 043 743 9942, P O Box 346, East London, 5200
 OTHER BRANCH OFFICES: Cape Town, Kokstad, Johannesburg, Mthatha, Queenstown, Lusaka - Zambia

 CLIENT : AGES Omega (Pty) Ltd
 Postnet Suite 203
 Private Bag X9063
 EAST LONDON, 5200
 ATT: Mr F de Jager

 PROJECT: GTEC E20/034 AM
 DATE RECEIVED: 2020-06-06
 DATE TESTED: 2020-07-28
 DATE REPORTED: 2020-07-29
 TEST REPORT NO.: 99747

MATERIALS TEST REPORT

SAMPLE NO:	2681	2682	2683	2684	2685	2686
POSITION / CHAINAGE	AM					
	1/1	2/1	4/1	5/1	8/1	9/2
DESCRIPTION	dk Br	dk Br	dk Br	lt Br	dk Br	lt Br
	Dol +	Sh +	Sh	Sh	Sh +	Sh
	dec Dol	cly s			cly s	

Sieve Analysis (Wet Preparation) SANS 3001 - Part AG1

% PASSING 75 mm						100
63 mm						94
50 mm						91
37.5 mm	100	100				90
25 mm	93	97				90
20 mm	86	85		100		84
14 mm	74	76	100	94	100	81
5 mm	56	58	89	76	84	58
2.00 mm	45	46	74	63	69	44
0.425 mm	29	33	61	53	58	36
0.075 mm	12.6	19.3	47.5	33.3	44.5	28.7

Soil Mortar Analysis - SANS 3001 - Part GR3

COURSE SAND (%)	36	28	18	16	16	18
FINE SAND (%)	36	30	18	31	20	17
SILT / CLAY (%)	28	42	64	53	64	65
GRADING MODULUS	2.13	2.02	1.18	1.51	1.29	1.91

Atterberg Limits - SANS 3001 - GR10 & GR11

LIQUID LIMIT (%)	27	28	29	25	31	32
PLASTICITY INDEX (%)	9	10	14	9	12	13
LINEAR SHRINKAGE (%)	3.5	5.0	7.0	4.0	6.0	7.0

Maximum Dry Density & Optimum Moisture Content - SANS 3001 - GR30 / California Bearing Ratio - SANS 3001 - GR40

Maximum Dry Density (kg/m ³)	2150	2140	2050	2162	2034	2150
Optimum Moisture Content (%)	7.4	7.5	10.7	9.3	8.3	8.0
C.B.R. @ 100% COMPACTION	48	36	30	41	37	29
C.B.R. @ 98 % COMPACTION	33	28	23	31	28	23
C.B.R. @ 95 % COMPACTION	21	19	17	21	18	17
C.B.R. @ 93 % COMPACTION	16	15	14	16	14	14
C.B.R. @ 90 % COMPACTION	10	11	10	11	9	10
SWELL @ 100% COMP. (%)	0.15	0.23	0.30	0.19	0.58	0.40
COLTO/TRH 14 Classification	G7	G7	G8	G7	G8 / G9	G8

The above test results are pertinent to the samples tested only. While the tests are carried out according to recognized standards, Controlab shall not be liable for erroneous testing or reporting thereof. This report may not be reproduced except in full without prior consent of Controlab.

Technical Signatory:

T Knight

Remarks:

Sample Delivered by Customer

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Sampled by Controlab

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Page 1 of 3

TR001


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 OTHER BRANCH OFFICES: Cape Town, Kokstad, Johannesburg, Mthatha, Queenstown, Lusaka - Zambia

 CLIENT : AGES Omega (Pty) Ltd
 Postnet Suite 203
 Private Bag X9063
 EAST LONDON, 5200
 ATT: Mr F de Jager

 PROJECT: GTEC E20/034 AM
 DATE RECEIVED: 2020-06-06
 DATE TESTED: 2020-07-28
 DATE REPORTED: 2020-07-29
 TEST REPORT NO.: 99747

GRAVEL ROADS MATERIAL REPORT (TRH 20)

SAMPLE NO:	2681	2682	2683	2684	2685	2686	SPEC
POSITION (Chainage)	AM						
	1/1	2/1	4/1	5/1	8/1	9/2	
DESCRIPTION:	dk Br	dk Br	dk Br	lt Br	dk Br	lt Br	
	Dol +	Sh +	Sh	Sh	Sh +	Sh	
	dec Dol	cly s			cly s		

GRAVEL CHARACTERISTICS (in Accordance With T R H 20)

PASSING	75 mm						100
	63 mm						94
	50 mm						91
	37.5 mm	100	100	100	100	100	90
	25 mm	93	97	100	100	100	90
	20 mm	86	85	100	100	100	84
	14 mm	74	76	100	94	100	81
	5 mm	56	58	89	76	84	58
	2.00 mm	45	46	74	63	69	44
	0.425 mm	29	33	61	53	58	36
	0.075 mm	12.6	19.3	47.5	33.3	44.5	28.7
GRADING MODULUS		2.13	2.02	1.18	1.51	1.29	1.91
LIQUID LIMIT		27	28	29	25	31	32
PLASTICITY INDEX		9	10	14	9	12	13
LINEAR SHRINKAGE		3.5	5.0	7.0	4.0	6.0	7.0
M.D.D.		2150	2140	2050	2162	2034	2150
O.M.C.		7.4	7.5	10.7	9.3	8.3	8.0
C.B.R. @ 95%		21	19	17	21	18	17
SWELL (MAX)		0.15	0.23	0.38	0.19	0.58	0.40
OVER SIZE INDEX (37.5 mm)		0	0	0	0	0	10
GRADING COEFFICIENT *		27	30	23	28	26	33
SHRINKAGE PRODUCT *		102	165	427	212	348	280
CLASS (TRH 20) *		E	E	D	E	E	E

Note!

Calculated in accordance to TRH20 Appendix A

CLASS (TRH 20)	A	----	ERRODIBLE MATERIAL	(AVOID OR BLEND)
	B	----	RAVELS & CORRUGATES	(AVOID OR BLEND)
	C	----	RAVELS	(AVOID OR BLEND)
	D	----	SLIPPERY WHEN WET	(AVOID OR BLEND)
	E	----	IDEAL - provided Oversize material is restricted to recommended limits	

The above test results are pertinent to the samples received and tested only. While the tests are carried out according to recognized standards, Controlab shall not be liable for erroneous testing or reporting thereof. This report may not be reproduced except in full without prior consent of Controlab.

Technical Signatory

T. Wright

Sample Delivered by Customer: yes

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Sampled by Controlab

TR012

**ControlLab South Africa (Pty) Ltd**

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 OTHER BRANCH OFFICES: Cape Town, Kokstad, Johannesburg, Mthatha, Queenstown, Lusaka - Zambia

CLIENT: AGES Omega (Pty) Ltd
 Postnet Suite 203
 Private Bag X9063
 EAST LONDON, 5200

ATT : Mr F de Jager

PROJECT: GTEC E20/034 AM

DATE RECEIVED: 2020-06-26

DATE TESTED: 2020-07-08

DATE REPORTED: 2020-07-29

TEST REPORT NO.: 99747

FOUNDATION INDICATOR REPORT

SAMPLE NO	2677	2678	2679	2680		
POSITION	AM					
DESCRIPTION	01-Feb lt R Br	01-Apr dk R Br	01-Aug dk R Br	01-Sep lt R Br		
	Sh + Qtzte	Sh	Sh	Ferr		

SIEVE ANALYSIS % PASSING SIEVES: Method: SANS 3001-AG1

% PASSING	75 mm					
63 mm						
50 mm						
37.5 mm	100					
28 mm	89	100				
20 mm	88	98		100		
14 mm	78	97	100	99		
10 mm	72	94	99	97		
7.1 mm	68	91	95	91		
5.00 mm	63	87	85	83		
2.00 mm	49	73	68	68		
1.00 mm	41	66	62	62		
0.600 mm	36.8	63.3	58.7	60.0		
0.425 mm	34.5	61.9	57.2	58.9		
0.300 mm	32.4	61.2	56.2	58.4		
0.150 mm	26.1	56.4	51.8	55.5		
0.075 mm	20.2	50.8	48.0	48.4		
GRADING MODULUS	2.0	1.1	1.3	1.2		

HYDROMETER ANALYSIS: Method: SANS 3001-GR3

0.060 mm	19	47	47	43		
0.020 mm	11	31	34	27		
0.006 mm	8	24	28	21		
0.002 mm	7	23	26	19		

ATTEBERG LIMITS: Method: SANS 3001-GR10

LIQUID LIMIT	27	30	36	34		
PLASTICITY INDEX	11	16	18	16		
LINEAR SHRINKAGE	5.0	8.0	9.0	8.0		

PREDICTION OF HEAVE (VAN DER MERWE METHOD)

MOISTURE CONTENT	9.6	15.3	19.2	13.9		
PI WHOLE SAMPLE	4.0	10.0	10.0	10.0		
POTENTIAL EXPANSIVENESS	LOW	LOW	MED	LOW		

The above test results are pertinent to the samples received and tested only.
 While the tests are carried out according to recognized standards ControlLab shall not be liable for erroneous testing or reporting thereof. This report may not be reproduced except in full without prior consent of ControlLab.

Remarks:

Samples Delivered by Customer: YES

Sampled by ControlLab

Technical Signatory

Knight

STR0032A



CIVIL ENGINEERING MATERIALS AND GEOTECHNICAL LABORATORY

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OTHER BRANCH OFFICES: Cape Town, Kokstad, Johannesburg, Mthatha, Queenstown, Lusaka - Zambia

CLIENT: AGES Omega (Pty) Ltd
Postnet Suite 203
Private Bag X9063
EAST LONDON, 5200

ATT: Mr F de Jager

PROJECT: GTEC E20/034 AM

DATE RECEIVED: 2020-06-26

DATE TESTED: 2020-07-24

DATE REPORTED: 2020-07-24

REF NO.: 99747

CORE TEST DATA

[illegible]

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Remarks:

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Technical Signatory

T Knight

TR0053



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CENTRAL LABORATORY: 10 St Pauls Road, East London, 5201, Tel: 043 722 5420 / 722 8565, Fax 043 743 9942, P O Box 346, East London, 5200
OTHER BRANCH OFFICES: Cape Town, Kokstad, Johannesburg, Mthatha, Queenstown, Lusaka - Zambia

PROJECT: GTEC E20/034 AM
DATE RECEIVED: 2020-06-26
DATE TESTED: 2020-07-30
DATE REPORTED: 2020-07-31
TEST REPORT NO: 99747

[illegible]

Laboratory Manager

Page 1 of 1

TR0085

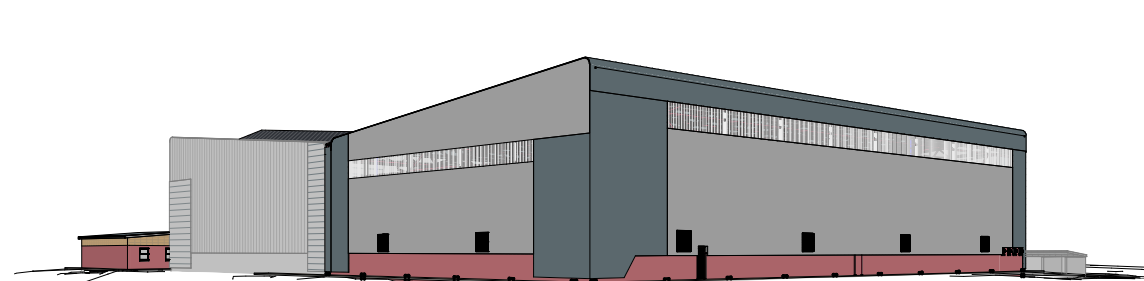
PART D1: DRAWINGS

D1: DRAWING REGISTER

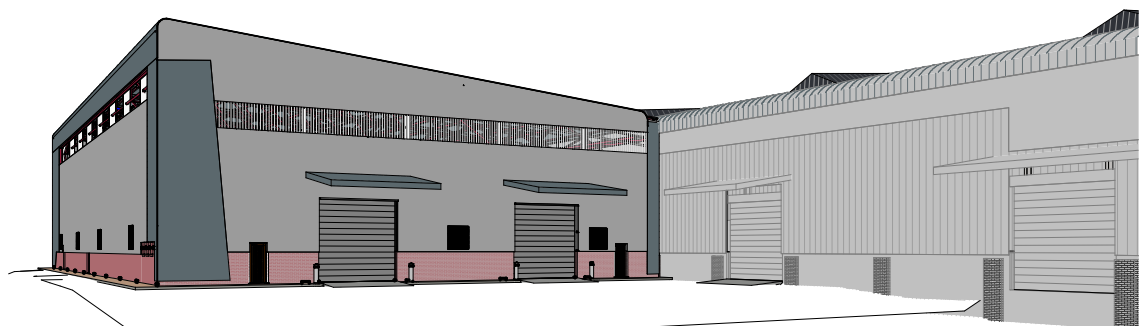
The following drawings are included in the tender documents for information only:

Discipline:	Architecture	Issued By:	Smale & Partners Architects
Drawing Number		Drawing Name	
041-104 – Rev B		3D perspective	
041-200 – Rev - 041-201 – Rev A		Locality <ul style="list-style-type: none"> Locality plan SDP – Sectional completion scope 	
0041-100 – Rev D		Site Development Plan	
041-101 – Rev D		Office plan <ul style="list-style-type: none"> Ground floor plan 	
041-103 – Rev C		Elevations	
041-102 – Rev C		Sections	
041-105 – Rev C		Cartoon Section	
041-106 – Rev D		Utility Room	
041-801 – Rev -		Ablutions Room Data	
Discipline:	Civil	Issued By:	Iliso Consulting (Pty) Ltd t/a Nako Iliso
1900321 – CIV – 0000_A		Demolition Plan (Rev 1)	
1900321 – CIV – 0000_A		Proposed Parking & Hardstand Area Layout (Rev B1)	
1900321-CIV-0001_A		Proposed Domestic, Fire & Sprinkler Water Layout (Rev 1)	
1900321-CIV-0002A_A		Sewer Long section Line A & B (Rev 1)	
1900321-CIV-0002_A		Proposed Foul Sewer Layout (Rev 1)	
1900321-CIV-0003A_A		Proposed Stormwater Details 1	
1900321-CIV-0003A_B		Typical Details (Rev B1)	
1900321-CIV-0003_A		Proposed Stormwater Layout (Rev 1)	
Discipline:	Structural	Issued By:	HSC Consulting Engineers (Pty) Ltd
S00 - 202007251		General Notes (Rev C)	
01.1 - 202007231		Foundation Details (Rev C)	
01 - 202007251		Foundation Layout (Rev B)	
02 - 202007251		Ground Floor Layout (Rev C)	
03 - 202007251		Crane Gantry Layout and Details (Rev C)	
04 - 202007251		Roof Bottom Chord Layout (Rev C)	
05 - 202007251		Roof Bracing and Purlins Layout (Rev C)	
06 - 202007251		Truss Sections and Details (Rev C)	
07 - 202007251		Elevation GL 11.5 (Rev C)	
08 - 202007251		Elevation GL A (Rev C)	
09 - 202007251		Elevation GL J (Rev C)	
10 - 202007251		Utility Room Details (Rev C)	
11 - 202007251		Excavations Through Existing Hardstand (Rev C)	

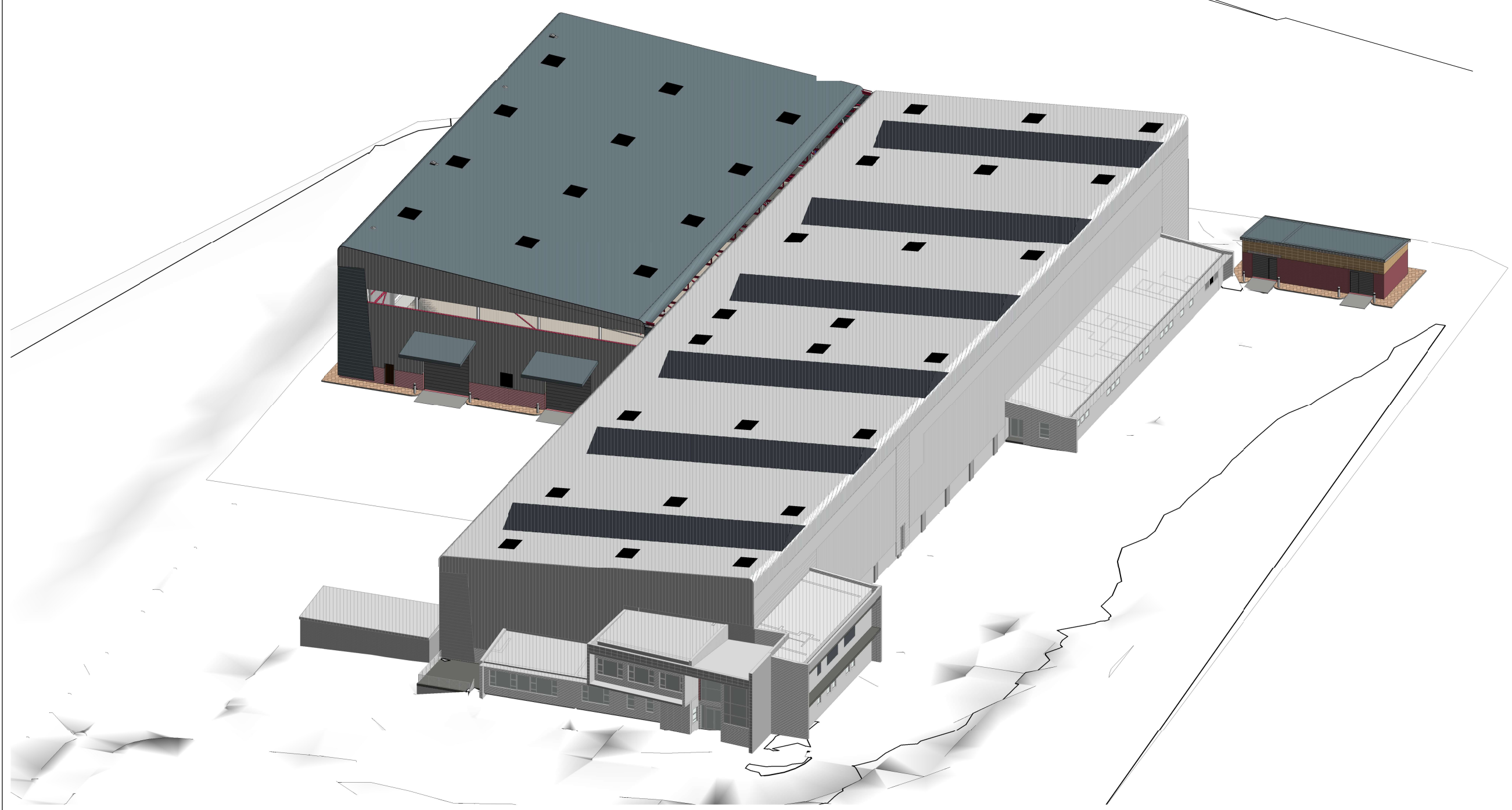
Tenderer _____ Witness 1 _____ Witness 2 _____ Employer _____ Witness 1 _____ Witness 2 _____



2
104 3D View 2



1
104 3D View 1



4
104 3D View 4

Note:
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Location Diagram

B	Overlay of Engineers Information	2020/07/01		
A	Removal of sky lights on the new section as per site meeting with team and Nwabisa on site (2020/05/15)	2020/05/15		
No.	Revision Description	Iss	Rev	By

SUBMISSION



Client
SMITHSPLASTICS/AUTOMOULD
ERF 60912 - IDZ

Drawing Title
Option 1
3D perspective

Drawing Originator SMALE AND PARTNERS ARCHITECTS				
Checked By JW	Checked Date 04/03/20	Drawn By TT	Drawn Date 04/03/20	
Approved By -	Approval Date 04/03/20	SACAP Number 7513		
Building Grid Reference		Scale		
Job No 0041	Discipline ARCH	Type SUB	Drawing No. 104	Revision B

SITE DEVELOPMENT PLAN - SECTIONAL COMPLETION SCOPE AND HOARDING
SCALE 1:200

Security barrier 2.40m high formed of IBR
sheeting or 19mm shutter board securely fixed
to 50 x 75mm purlins/ girts at 1200mm c/c
fixed to 200mm diameter gumpole posts at
1200mm c/c including concrete base,
excavation, carting
away etc

LEGEND

SECTIONAL COMPLETION SCOPE:

- SECTION 1
- SECTION 2
- SECTION 3
- SECTION 1 HOARDING
- SECTION 2 AND 3 HOARDING
- SECTION 1, 2 AND 3 HOARDING

Job No: 0041

Discipline: ARCH

Type: CON

Drawing No: 201

Revision: -

None: Model files attached

Notes:
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Location diagram

Staff Numbers for new extension
14 Staff members
10 Males
4 Females
Ablutions Required for new extension
Female:
WC = 2
WHB = 1
Male:
WC = 1
WHB = 1
URINAL = 1
Parking Calculations
1 BAY: 100m² GLA FOR MANUFACTURING
(MANUFACTURING: 50% REDUCTION ALLOWED FOR ELUD)
1 BAY: 100m² GLA FOR WAREHOUSING
2.5 BAY: 100m² GLA FOR OFFICE SPACE
New Factory Extension: 1703.18m²
Ablutions: 16m²
Oil Sump Building: 83.35m²
Parking required for the New Sections
Manufacturing: 17 bays - 9 (50%)
Parking bays: 17
Oil Sump: 1 Parking bay
Total New Bays Required: 10 Parking bays
Total Existing Required: 33
Total New Required: 43
Total on Site: 45
Building Classification
G1: Offices
J2: Moderate Risk Storage
Fire Regulations
SANS 10400 T
POPULATION: 1 PERSON PER 15m²
FIRE HYDRANT: 2 (1 REQUIRED @ 1/1000m²)
FIRE HOSE REEL: 4 OFF 30M FHR (1 REQUIRED @ 1/500m²)
FIRE EXTINGUISHER: 8 OFF 9 KG DCP (1 REQUIRED @ 1/1000m²)
FIRE EXTINGUISHER: 8 OFF 10 KG CO2 (1 REQUIRED @ 1/1000m²)
FIRE SPRINKLERS: DESIGNED IN ACCORDANCE TO ASIS 12th ED
NATURAL SMOKE VENTILATION: DESIGNED IN ACCORDANCE TO EN1201
FIRE DETECTION: L1/M1

LEGEND

☐ New Build

☐ Existing Building

☐ New Paved Areas

☐ New Concrete Hardstands

SCHEDULE OF AREA: ERF 60912, ZONE 1A, EAST LONDON INDUSTRIAL DEVELOPMENT ZONE

PORTABLE AREA	
SITE AREA	15 500m ²
ADDITIONAL OFFICE BLOCK	
GROUND FLOOR	240m ²
FIRST FLOOR	177m ²
ADDITIONAL OFFICE BLOCK	
GROUND FLOOR	240m ²
FACTORY FLOOR SPACE	
EXISTING FACTORY AREA 1	1 800m ²
EXISTING FACTORY AREA 2	1 400m ²
NEW FACTORY AREA 1	1 800m ²
NEW FACTORY AREA 2	1 400m ²
FACTORY TOTAL AREA	4 940m ²
GATE HOUSE	11 300m ²
REFUSE AREA	73 200m ²
FACTORY HARDSTAND AREA	
FACTORY HARDSTAND AREA	1 000m ²
PARKING TOTAL AREA	
EXISTING AREA	1 800m ²
TOTAL NEW AREA	2 070m ²
TOTAL AREA	4 870m ²
TOTAL USED	
TOTAL USED AREA	4 914m ²
BSF TOTAL	15 500m ²

SCHEDULE OF PROPOSED: ERF 60912, ZONE 1A, EAST LONDON INDUSTRIAL DEVELOPMENT ZONE

REQUIREMENTS		ACTUAL PROVIDED	
SITE AREA	ERF 60912	15 500m ²	15 500m ²
F.A.S.	15 500m ²	15 500m ²	15 500m ²
HEIGHT ZONE	4.010m	4.010m	4.010m
COVERAGE %	100%	100%	100%
COVERAGE m ²	15 500m ²	15 500m ²	15 500m ²
LANDSCAPED AREA +10 %	+10%	14 950m ²	14 950m ²
LANDSCAPED AREA +10 %	+10%	14 950m ²	14 950m ²
BUILDING LINES			
FRONT BOUNDARY	15 000m	15 000m	15 000m
REAR BOUNDARY	4 000m	4 000m	4 000m
BACK BOUNDARY	4 000m	4 000m	4 000m

SCHEDULE OF USE AREAS

USE	AREA	AREA
USE 1: OFFICE	1 800m ²	1 800m ²
USE 2: OFFICE	1 400m ²	1 400m ²
USE 3: OFFICE	1 800m ²	1 800m ²
USE 4: OFFICE	1 400m ²	1 400m ²
USE 5: OFFICE	1 800m ²	1 800m ²
USE 6: OFFICE	1 400m ²	1 400m ²
USE 7: OFFICE	1 800m ²	1 800m ²
USE 8: OFFICE	1 400m ²	1 400m ²
USE 9: OFFICE	1 800m ²	1 800m ²
USE 10: OFFICE	1 400m ²	1 400m ²
USE 11: OFFICE	1 800m ²	1 800m ²
USE 12: OFFICE	1 400m ²	1 400m ²
EXISTING TOTAL for all uses	1 800m ²	1 800m ²
Proposed	1 800m ²	1 800m ²
USE 1: OFFICE	1 800m ²	1 800m ²
USE 2: OFFICE	1 400m ²	1 400m ²
USE 3: OFFICE	1 800m ²	1 800m ²
USE 4: OFFICE	1 400m ²	1 400m ²
USE 5: OFFICE	1 800m ²	1 800m ²
USE 6: OFFICE	1 400m ²	1 400m ²
USE 7: OFFICE	1 800m ²	1 800m ²
USE 8: OFFICE	1 400m ²	1 400m ²
USE 9: OFFICE	1 800m ²	1 800m ²
USE 10: OFFICE	1 400m ²	1 400m ²
USE 11: OFFICE	1 800m ²	1 800m ²
USE 12: OFFICE	1 400m ²	1 400m ²
TOTAL for all uses	1 800m ²	1 800m ²

Rev: Dn: Date: Description:

CONSTRUCTION

info@smile.co.za www.smile.co.za

Telephone: 043 736 9327
Facsimile: 086 8406 155
123 Western Av. Vincent, East London, 5247

Project Name / Client:
SMITHSPLASTICS /AUTOMOULD
ERF 60912 - IDZ

Drawing Title:
SECTIONAL COMPLETION SCOPE PLAN
AND HOARDING PLAN

Drawing Originator:
S AND P ARCHITECTS cc

Checked By: JW
Approved By: JW
Approval Date: 2020/07/28
Approval Date: 2020/07/28
SACAP Number: 7513
Building Grid Reference: 1:200

Job No: 0041
Discipline: ARCH
Type: CON
Drawing No: 201
Revision: -

Note:

Location diagram

14 Staff members

- #### 4 Females

Example:

Male:

Parking Calculations

(MANUFACTURING: 50 %
DEFLECTION AT QUARTER POINT)

2.3 BA/T/100 MHz GLA FOR OFFICE SPACE

Oil Sump Building : 63.35m²

Parking days
Call 800-661-1144. Reservations have

Total Existing Required : 33

G1: Officers

SANS 10400 T

FINE HOSE REEL: 4 OFF 30M ROLL (1 REQUIRED @ 1/500m²)

FIRE EXTINGUISHER: 8 OZ-10 KG CO2 (1 REQUIRED @ 1000-2)

NATURAL SMOKE VENTILATION: DESIGNED IN

LEGEND

Resumen del curso

Handstands

PRINTABLE APPRA

GROUND FLOOR	2nd fl.

GAFF INCORP	11,308 1/2
GAFF INCORP	
GAFF INCORP	

7744 UNIT MONITORING AREA	1/2008
---------------------------	--------

TOTAL AREA	2 670 m ²
------------	----------------------

ERG TOTAL	15 000 W
-----------	----------

HTF AREA	REQUIREMENTS	ACTUAL PROVIDED
HTF AREA	1000000	1000000

COVERAGE m ²	11 940 m ²	9 711.20 m ²
-------------------------	-----------------------	-------------------------

FRONT BOUNDARY	15 000-mm
----------------	-----------

SCHEDULE OF USE AREAS		

Table 3	Bray-Curtis index	40, 200 m ²
Table 4	Number of species	0 to 1000

APRIL 7	CHRYSLER BANK (PUBL. CO.)	TOT. 2000 MT
APRIL 8	STANDARD OIL CO.	21,600 m ²

USE: 12	CLIMATE HOUSE 1	11,308 m ²
---------	-----------------	-----------------------

DATE	2019.12.03	100 mm ²
TIME	14:00	

011 2009/07/10 Circle over law

building lines

2000

info@smile.co.za www.smile.co.za

facsimile: 085 5405 195

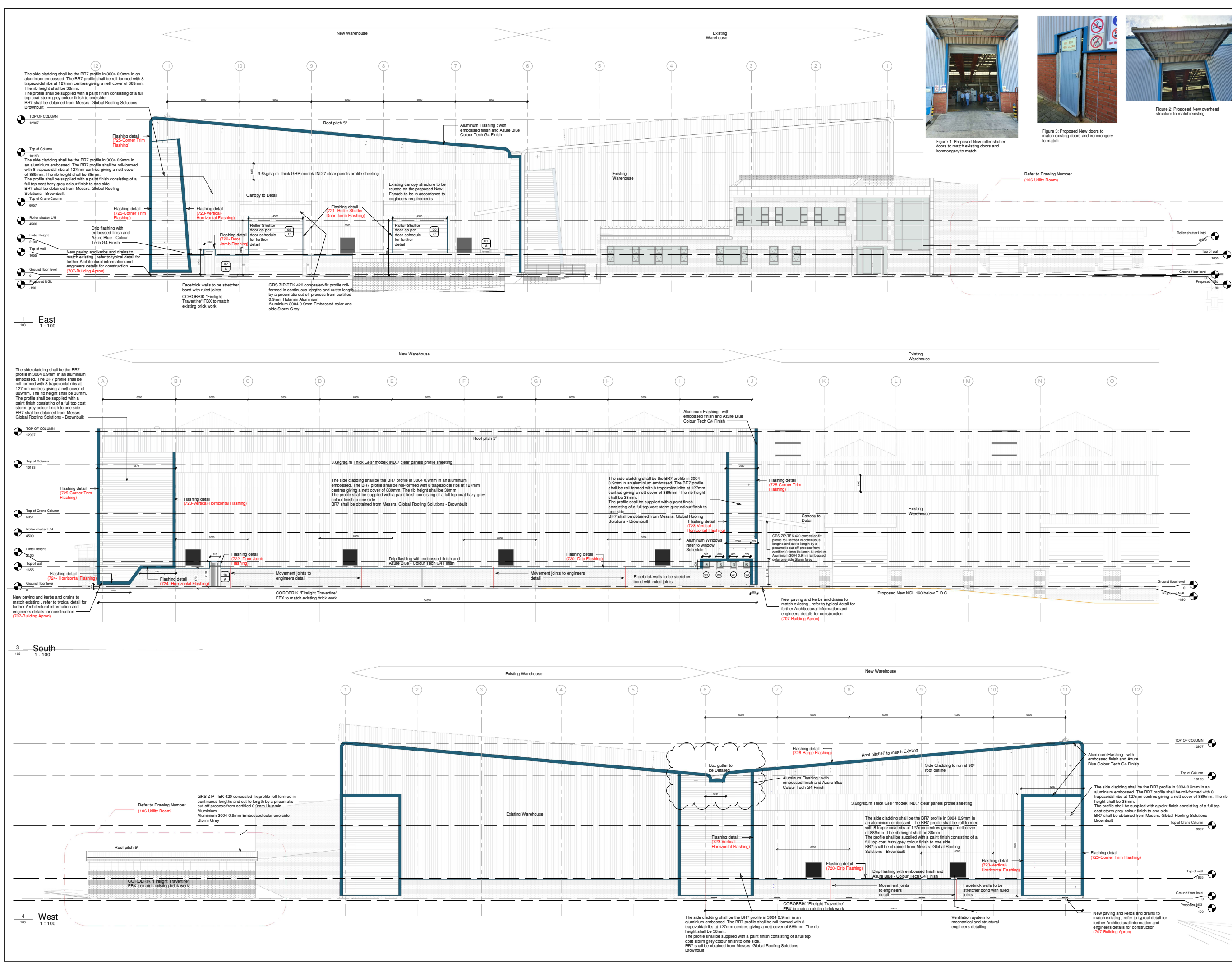
Project Name / Client

AD 1010000

STUDIO OF
SANDP ARCHITECTS OF

Approved By	Approval Date	SWCAP Number
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1:200



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Location Diagram

Overlay of Engineers Information	2020/07/01
Structural engineers model overlay and building the changes	2020/06/17
Removal of sky lights on the new section as per site meeting with team and Nadia on site (2020/05/15)	2020/05/15

Revision	Revision Description	1	2	3	4
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SUBMISSION



Project Name / Client
SMITHSPLASTICS/AUTOMOULD
ERF 78060 - East London

Drawing Title
Elevations

Drawing Originator SMALE AND PARTNERS ARCHITECTS				
Checked By JW	Checked Date 04/02/20	Drawn By TT	Drawn Date 04/02/20	
Approved By -	Approval Date 04/02/20	SACAP Number 7513	Scale 1 : 100	
Job No 0041	Discipline ARCH	Type SUB	Drawing No. 103	Revision C

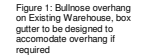
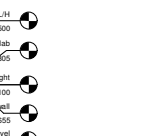


Figure 1. Section on Existing gutter to accommodate required

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Location Diagram



C	Overlay of Engineers Information	2020/07/01		
B	Structural engineers model overlay and building line changes	2020/06/17		
A	Removal of sky lights on the new section as per site meeting with team and Nwabisa on site (2020/05/15)	2020/05/15		
No	Revision Description	Date	By	Tr

Client



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East London,
5247

Project Name / Client

SMITHSPLASTICS/AUTOMOULD

ERF 78060 - East London

Drawing Title

Sections

Devising Originals

Checked By	Checked Date	Drawn By	
------------	--------------	----------	--

Approved By _____

•

Building Grid Refe

Job No	Dis
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0041	AI
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ISO A1 Landscape

2020/07/24
14:41:17

ARCHITECTURAL

STRUCTURAL

CIVIL

MECHANICAL AND FIRE

ELECTRICAL

GENERAL

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A	Removal of sky lights on the new section as per site meeting with team and Nwabisa on site (2020/05/15)	2020/05/15		

No	Revision Description	Iss	Rev	By
----	----------------------	-----	-----	----

Revision

SUBMISSION

Client



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Vincent
East London,
5247



Project Name / Client

SMITHSPLASTICS/AUTOMOULD

ERF 60912 - IDZ

Drawing Title

Option 1

Cartoon Section

STANDARD DESIGN, LOADS, SERVICES AND FINISHES

Drawing Originator

SMALE AND PARTNERS ARCHITECTS

Checked By	Checked Date	Drawn By	Drawn Date
JW	04/09/20	TT	04/09/20

Approved By	Approval Date	SACAP Number
-	04/09/20	7513

Building Grid Reference	Scale
	1 : 100

Job No	Discipline	Type	Drawing No.	Revision
0041	ARCH	SUB	105	C

M.2 Air-conditioning - Offices
Allowance of one air conditioning unit per 25m² of office space.
Allowance for air conditioning to Boardroom and Reception.

M.3 Fire Reticulation system
Single metered connection to each tenant separating into domestic and fire fighting systems.
Water supply for sprinklers is not metered and is provided by a pumped booster system.

M.4 Fire Protection
Internal fire hydrant connections, hose reels and fire extinguishers provided in accordance with SANS 10400 Part T

M.5 Sprinkler Protection
Extra High Hazard Automatic Supervised Sprinkler Extinguishing System provided for roof protection and protection of internal landroft spaces (Offices, Change Rooms etc.) designed in accordance with SANS 10287.

Maximum allowable stack height 3000mm for block stacking in maximum blocks of 150m² with the exception of foamed plastic off-cuts where storage height is limited to 1600mm. Other storage configurations (pallets, boxed goods and rack storage) to be discussed with landlord to verify maximum allowable storage height.

S.10 Gutters and Downpipes
GRP half-round gutters with integral fibreglass drop-outs at 12m c/c's with 'Geberit Pluvia' rainwater head at base of each drop-out. Each head to be serviced by 2 no. 'Geberit Pluvia' continuous HDPE welded pipes, suspended to approved Geberit detail from gutter support structure. Gutter support would be as per engineers specification

Rainwater heads and downpipes are located internal to the building on east and west extremities of the gables.

M.1 Ventilation
Ventilation in factory areas will be provided in terms of the stipulated minimums in SANS 10400 part O and the OHS Act under the Environmental Regulations for Workplaces.

Air extraction systems will be provided for ablation facilities, canteens and tea kitchens in accordance with SANS 10400 Part O.

A.3 Openings in Envelope - Windows
No openings in the steel structure will be made for windows as natural lighting is provided via roof lights described elsewhere.
Windows in office or other accommodation to be aluminum Sheerline 36 system built into brick walling.

S.7 Column Protection
Column protection will be provided to all centre row internal steel stanchions by means of 750 x 750mm steel lined, sand-cement filled barriers 1000mm high painted in diagonal black and yellow.

G.4 Exclusions
The following services, unless otherwise stated or agreed, are not provided by the landlord:
Standby diesel generators.
UPS and computer equipment.
Internal computer network cabling.
Purpose made computer access flooring.
Internal PABX, data and telephone networks, cabling.
Power factor correction equipment.
Electricity reticulation from the internal site electricity network to tenants plant components
Special foundations for tenants equipment.
Internal division walls within factory.
Catering and kitchen equipment.
Lockers.
Compressed air supply and equipment.
Gas suppression.
Floor drains.
Bulk storage tanks.
Compressor rooms.
Forklift refueling enclosures.
AC and ventilation plant including plant rooms to process areas.
Water supply, effluent control and other underfloor wet services to process areas.
Specific fire protection other than general industrial fire protection.
Steam generation.
Furniture, fixtures and fittings.
Building, operational and tenant signage.
Logistics equipment.
Dock levellers.
Protection of building and equipment from process or logistics equipment.
Special security systems and access control.
Specialised lifting equipment and crawler beams

S.12 Staircases
Staircases to upper levels of offices are reinforced concrete. There are no staircases leading to roof zones

S.9 Roof Cladding and Insulation
The roof sheeting shall be GRS ZIP-TEK 420 concealed-fix profile roll-formed in continuous lengths and cut to length by a pneumatic cut-off process from certified 0.9mm Hualamin Aluminium. Aluminium 3004 0.9mm Embossed color one side Storm Grey.
Owens Corning SA 100mm Factorylite insulation laid over purlins in single lengths and supported on galvanised straining wires at 300mm centres.

S.8 Roof Structure
The roof structure consists of a welded and bolted girder truss spanning 24000mm with horizontal tie and 5° slope top chord with HDG finish. Trusses are at 6000mm centres. Alternate trusses are supported internally on plate girder running the length of the building supported on stanchions at 12000mm centres.

Services load is 40 kg/m² with 20 kg/m² reserved for standard mechanical and electrical services and 20 kg/m² available for tenant services

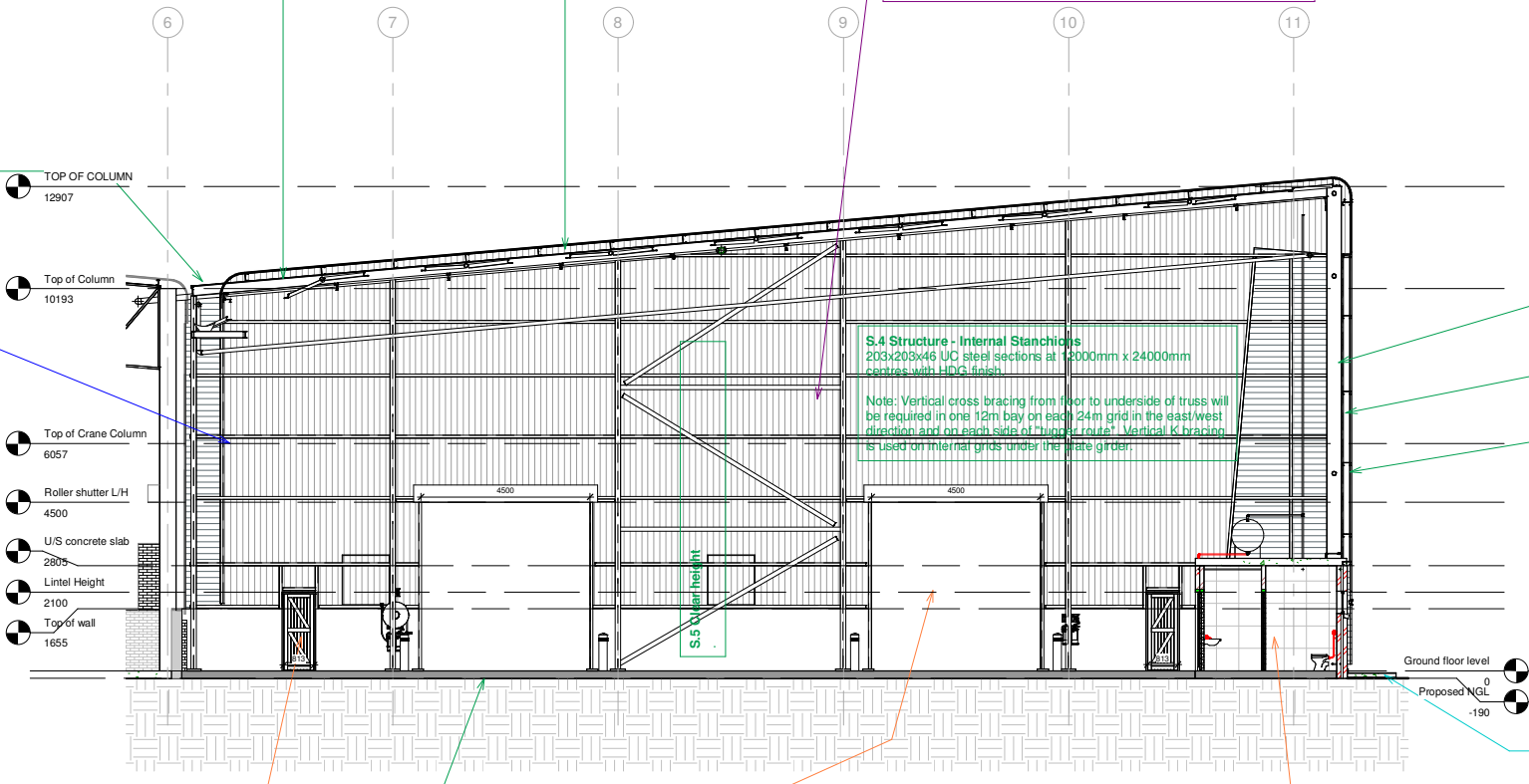
E.2 Artificial Lighting level - Offices
To office areas 600 x 600mm recessed or surface mounted as appropriate fluorescent luminaires to give maintained lighting level of 450 lux at 900mm above floor level. The lighting will be supplemented in meeting rooms, reception areas and toilet areas by using downlights.

E.3 Artificial Lighting level - Under Canopies
Lighting under canopies shall be provided to 160 lux. Corrosion proof fluorescent light fittings.

E.1 Artificial Lighting level - factories
The following artificial illumination will be provided:
To warehouse areas lighting installed at 8000mm height to give maintained lighting level of 160 lux at 900mm above floor level.
To factory production areas (deemed to be 50% of the building area) lighting installed at 8000mm height to give maintained lighting level of 400 lux at 900mm above floor level.
Maintained emergency lighting will be provided to allow for emergency evacuation of buildings.

S.4 Structure - Internal Stanchions
203x203x46 UC steel sections at 12000mm x 24000mm centres with HDG finish

Note: Vertical cross bracing from floor to underside of truss will be required in one 12m bay on each 24m grid in the east-west direction and on each side of "tugger route". Vertical K bracing is used on internal grids under the plate girder.



A.2 Openings in Envelope - Pedestrian and Double Doors
Standard 2032 x 813mm hardwood FLBB doors with flush panel internally in hardwood frame set in steel subframe and painted to match existing.

S.1 Concrete Surface Beds
Surface beds 200mm thick, unreinforced 30mpa concrete with power floated finish to floor classification FM3 as defined by Supplement to Concrete Society Technical Report No 37. Joints at 4000mm centres. 1200mm isolation panels on diagonal around steel stanchions. All joints sealed with polysulphide sealant. Surface will be treated with Abecron at a rate of 7kg/m² and cured with Duracure at a rate of 9m² per litre.
Maximum wall load on slab = 9.0 ton / m run.
Maximum uniformly distributed load = 6.4 ton / m².
Maximum racking post load = 6 ton at 2500mm intervals along aisles and 1000mm to 2500mm in opposite direction.
Maximum axle load = 10 ton assuming a nominal forklift lifting capacity of 4.5 tons.

A.1 Openings in Envelope - Roller Shutter Doors
4.5m high x 4.5m wide galvanised and manually operated by chain slatted doors will be provided on the basis of one per 2500m² area.

Door openings will be formed and framed using steel channel sections.
The doors will be protected by concrete filled bollards placed internally and externally on either side of the door opening.

G.1 Access Control
The ELIDZ operates an integrated access control system to monitor and control the entrance and egress of all staff and vehicles to and from each zone of the IDZ. The ELIDZ will provide tenants with the opportunity to subscribe to the central access control system subject to payment of a defined subscriber fee.

G.2 Logistic Facility
The Automotive Suppliers Zone has access to a logistic facility subject to tenants making their own contractual arrangements with the service provider of the logistic facility.

G.3 Landscaping
ELIDZ will provide site landscaping.

G.4 Effluent Disposal
Tenant is responsible for industrial effluent disposal and applications for Trade Effluent Permit

A.5 Offices and Ablutions - Single Story
Office, change room and Ablution space will be provided on the basis of 15% of the floor area of the factory floor area. Office and ablutions are generally external to the factory envelope.

External walls will be 280mm cavity brick on strip foundations to engineers detail. External finish in claybrick or concrete facings with square ruled joints. Internally finish with one coat wood floated plaster with undercoat and two coats Plascon "Wall n All" in light tint colour. Internal perimeter walls will be formed using 230mm clay or concrete brick walls with all exposed surfaces finished with one coat wood floated plaster with undercoat and two coats Plascon "Wall n All" in light tint colour.

Internal partition walls will be constructed to meet reasonable office configuration using 2700mm high x 90mm dry wall partitions with aluminum top track.

Floor finish will be concrete surface bed as for factory with: Entrance and reception area: Ceramic tiles Offices: Berberpoint carpet. Toilets or tea kitchens: Ceramic tiles Storerooms: 2mm Marley Supatlex vinyl sheet in "base range" colours.

Toilet and wet areas will be tiled with ceramic wall tiles to architects detail to ceiling height.

Ceilings to office accommodation will be 600 x 600mm suspended vinyl clad gypsum ceiling tiles laid in exposed aluminum T-grid. The ceiling height will be 2700mm above floor above.

Ceiling in wet areas will be underside of concrete slab filled and rubbed down and finished with primer followed by two coats water based enamel paint.

The concrete slab can carry a load of 500kg/m². Office and ablation surface beds are generally 100mm thick with mesh 193 re-inforcement.

Internal doors to be standard flush panel 2032 x 813mm solid core doors with concealed edges finished with primer and two coats "velvagio" or similar enamel.
Internal doors to change rooms and toilets to be hardwood FLBB finished with primer and two coats "velvagio" or similar enamel.

External doors to be hardwood 2032 x 813mm FLBB doors

S.11 Roof Lights
Double pitched roof lights are located along the apex (centreline of 24m column grid). Roof lights are continuous - including over tugger route - from gable end to gable end.

The south facing side of the roof light is clad in Modek opal polycarbonate sheeting with profile to match roof sheeting.

S.12 Canopies
6m wide cantilevered structural steel canopies will be provided above roller shutter doors except along "tugger route". Canopies will be nominally 6000mm in length on north and south elevations and 4800mm in length on east and west elevations.

E.4 External Lighting
Shall be metal halide lights provided on the external facade of buildings or to decorative post top fittings as appropriate. Lighting will be controlled by light sensitive relays.

E.5 Telephone Conections
A sleeve connection to the ELIDZ underground services shall be provided for each tenant. The tenant shall apply for connection to the Network Operators.

E.6 Internal telecommunications and Data services
Containment (sleeves, conduits and ducts etc.) shall be provided for internal telecommunication and data services. Cabling shall be provided by tenant.

E.7 Lighting Protection
All buildings shall be protected against lightning in accordance with SABS 10313:1999.

E.8 Electrical Reticulation - Site
Each tenant will receive a 150 ampere, 242/420 volt (three phase), metered point of supply and any nominated category of electricity demand exceeding this supply will be subject to a standard connection fee.

S.2 Structure - Modular Design and Expansion
The structure is designed to fit a 12 x 24m structural grid. It is possible to add additional structural modules to accommodate expansion of area.

S.3 Structure - Perimeter Stanchions
457x191x 67mm UB steel sections at 6000mm centres with HDG finish

S.6 Side Cladding
The side cladding shall be the BR7 profile in 3004 0.9mm in an aluminum embossed. The BR7 profile shall be roll-formed with 8 trapezoidal ribs at 127mm centres giving a nett cover of 889mm. The rib height shall be 38mm. and standard backing coat on inside from eaves to finished floor level fixed to galvanised steel girt rails to all external walls except along tugger route where sheeting is to be full height sheeting (default) or 230mm brickwork up to 4m height with 2 hour rated drywall above if required.

400mm high x 200mm concrete bund dowelled to concrete surface bed located along the edge of the surface bed except where door openings required. Bund to encase and protect base of all external wall stanchions.

850mm high protection barrier formed from 2 No. 178x64mm galv. channels on 178x64mm supports bolted to surface bed finished with black and yellow diagonal stripes (where required at pluvia pipework).
No side wall insulation is provided..

C.1 External Hard standing
Generally 200 mm thick unreinforced 30MPa surface bed with broomed finish to falls not exceeding 1 : 20. Toggle joints at formed edges and saw-cut joints across continuous pours, both at maximum 4.8 m centres. Expansion joints against building edges or underground structures. All joints sealed with polysulphide joint sealant.

Surface drains with heavy duty grill covers generally located 48 m centres to underground stormwater pipes sized to take 5 year event. Heavier rain will result in surface water drainage across site to entrances and onto external roads

C.2 Curbing and Access Ramps
Distance from building to edge of external hardstanding is generally 3.64 m. Hardstand edges finished with 180 mm high precast kerbs. Space from building to back of kerb is finished with bond paved sidewalks of varying widths with lawns or planted areas in between.

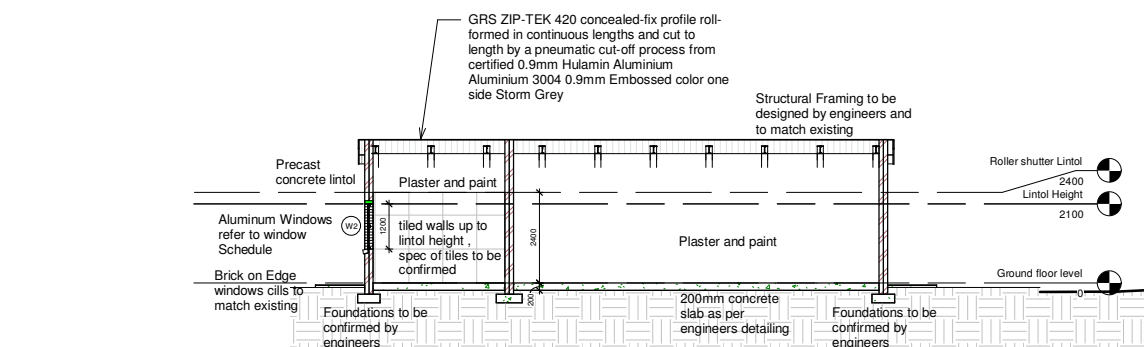
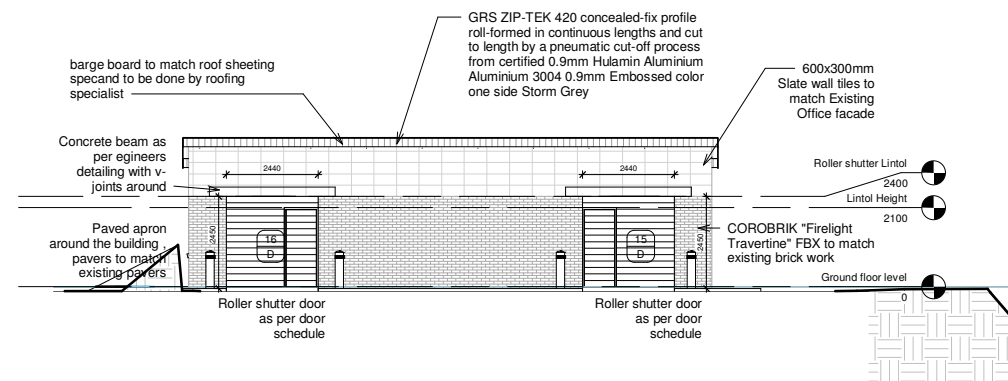
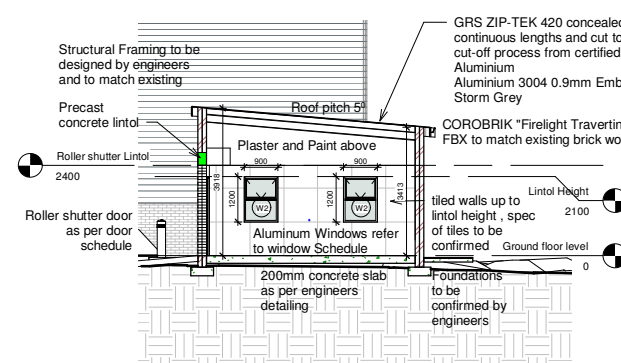
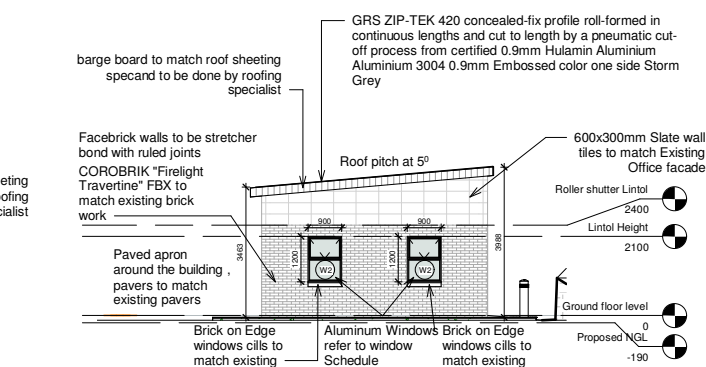
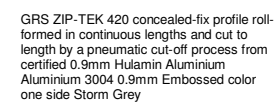
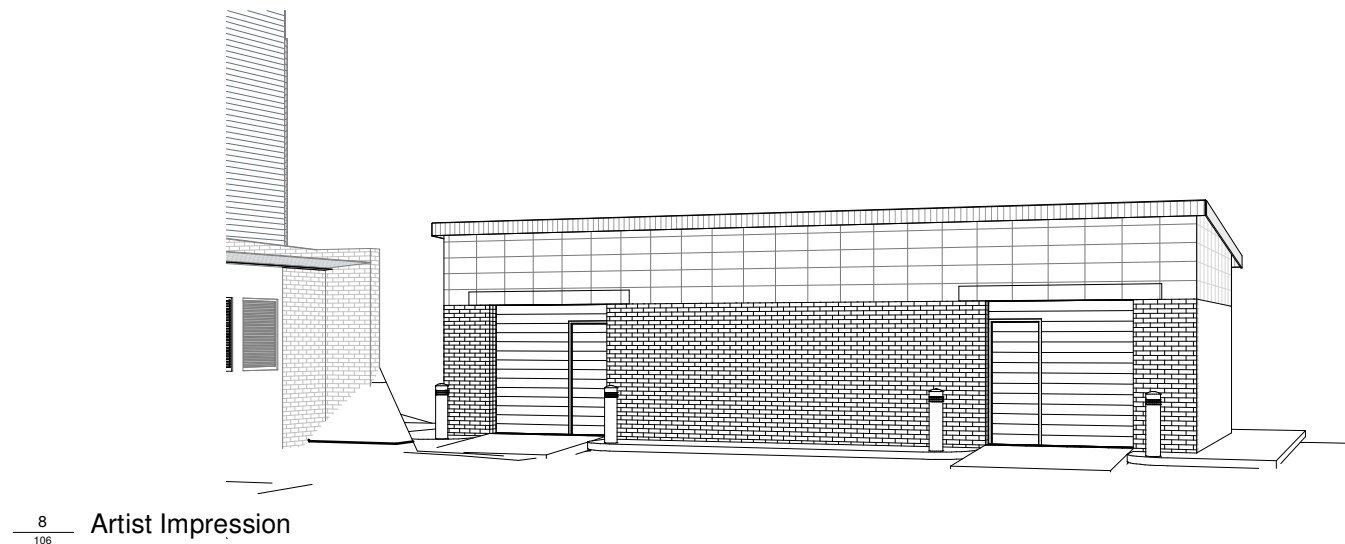
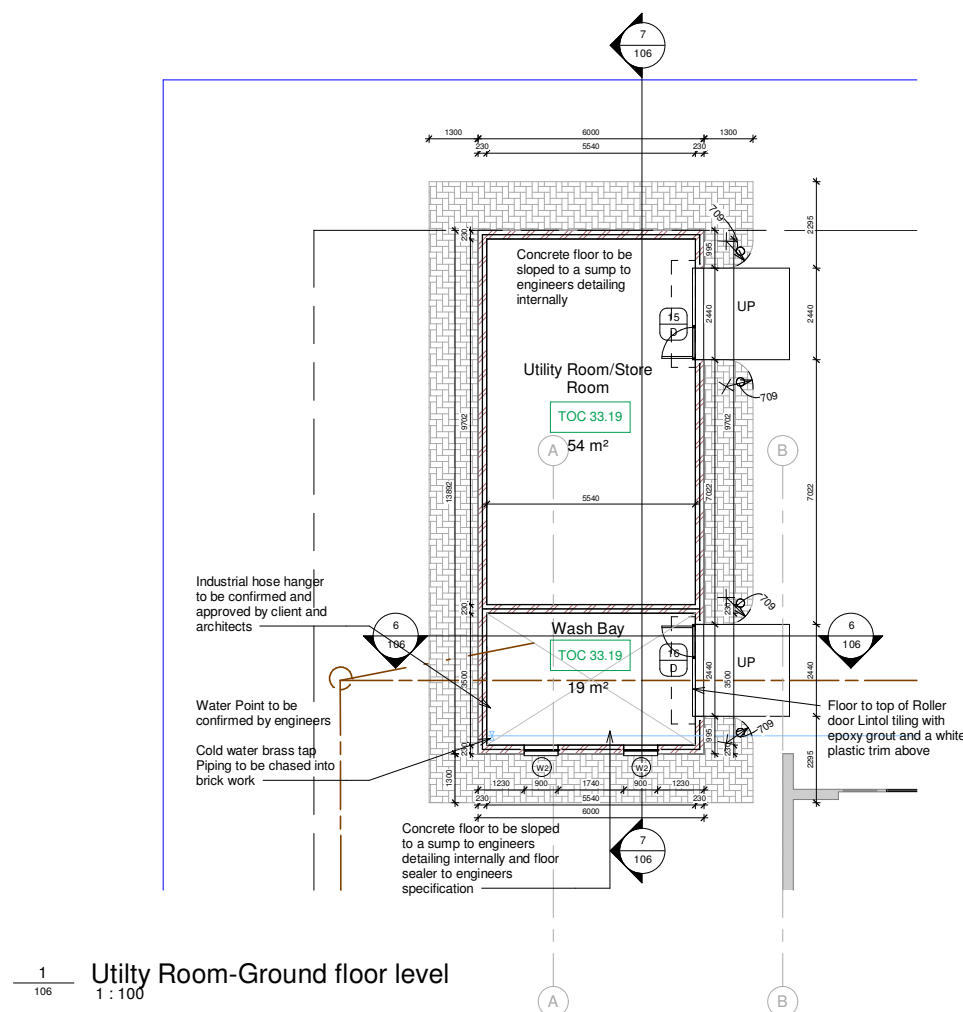
Entrances have a 1 : 13 slope from the hardstanding to factory floor level with a 10 mm step weather sill aligned with inner face of the door. Step is formed with a galvanised steel angle set into concrete

C.3 Access to Sewage and Water Reticulation
Underground sewers are provided parallel to the east-west structural gridlines, either just north or just south of the building edges. For buildings exceeding 24 m width, intermediate sewers are laid under the floors with rodding eyes at 24 m centres.

Provision has been made for future industrial effluent sewers, required by the tenants, to connect to a separate manhole offset from the main sewer.

Water supply mains provide separate metered connections each building at a rate of 20 kl per day per hectare of erf area.

1
105
Section E-E Cartoon
1 : 100



Note:
Do not scale from this drawing. Check all given dimensions and site dimensions and/or levels prior to any pricing, manufacture or construction of any item.
Greater detail drawings take preference.
Please report any discrepancies to the architect.

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Location Diagram

D	Overlay of Engineers Information	2020/07/01		
C	Removal of windows in storage room and removal of single doors on Utility room and inclusion of personnel doors in roller shutter door	2020/06/23		
B	Adjusting size to fit within building line	2020/06/17		
A	Structural engineers model overlay and building line changes	2020/06/17		

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Project Name / Client


SMITHSPLASTICS/AUTOMOULD

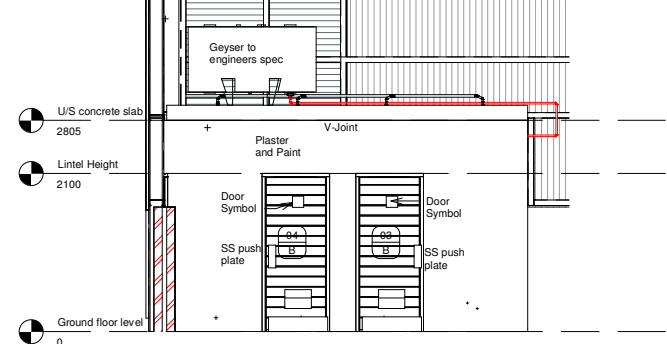
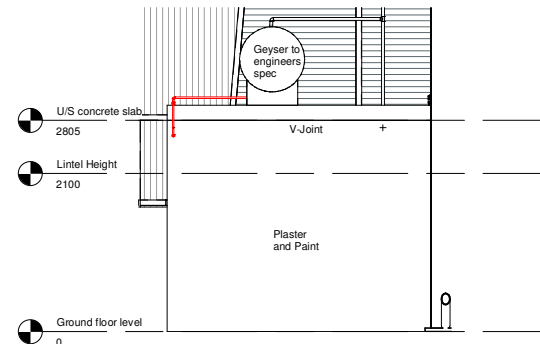
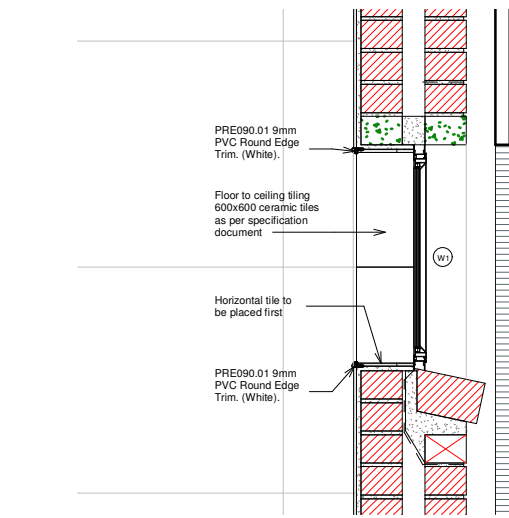
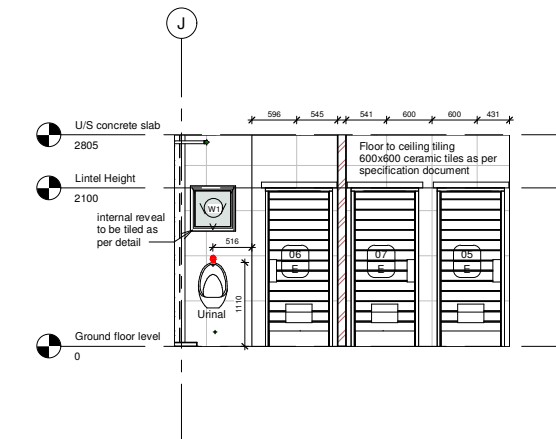
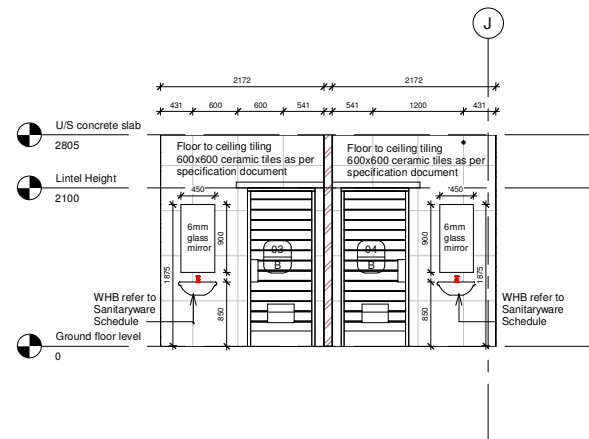
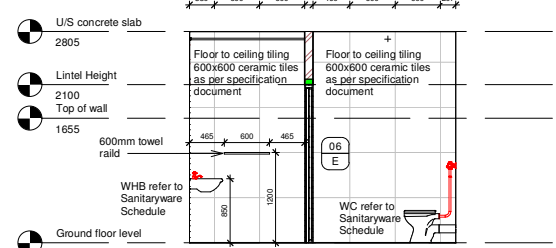
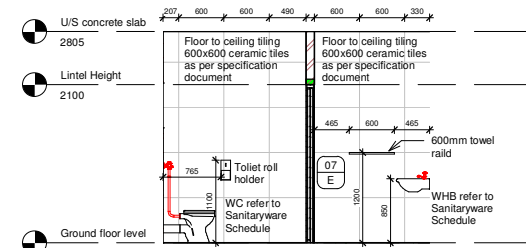
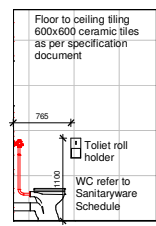
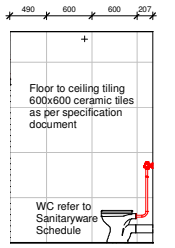
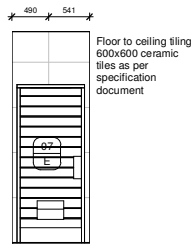
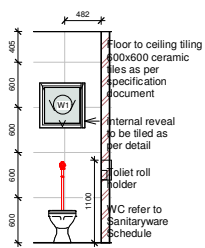
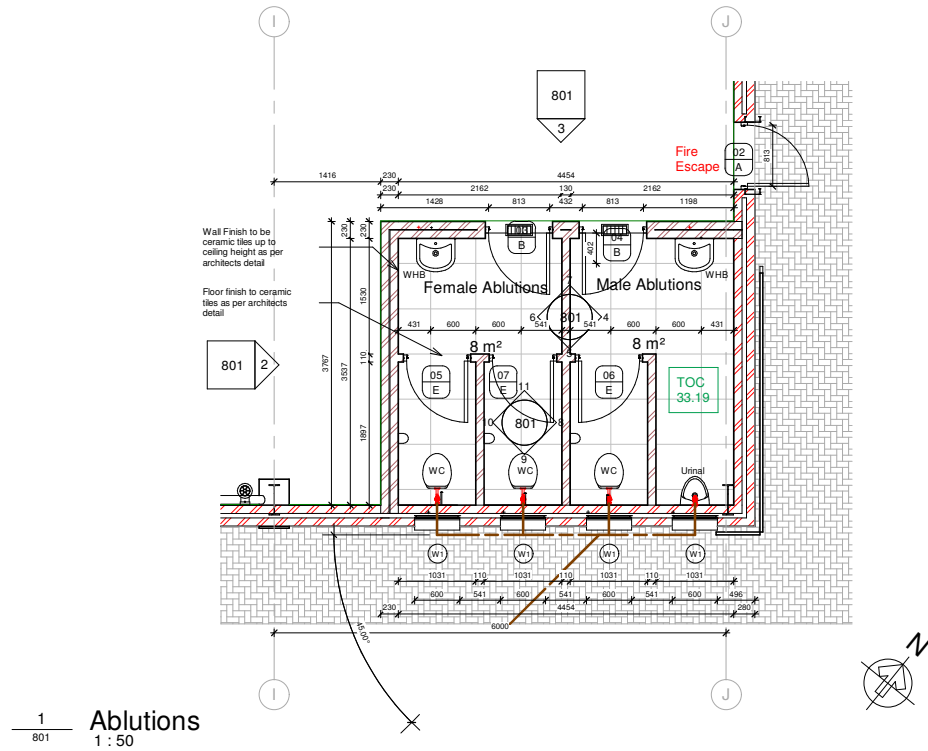
ERF 60912 - IDZ

Drawing Title

Option 1
Utility Room

Drawing Originator
SMALE AND PARTNERS ARCHITECTS

Checked By Checker	Checked Date 05/29/20	Drawn By Author	Drawn Date 05/29/20
Approved By Approver	Approval Date 05/29/20	SACAP Number 7513	
Building Grid Reference		Scale 1 : 100	
Job No 0041	Discipline ARCH	Type SUB	Drawing No. 106
			Revision D



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Location Diagram

No	Revision Description	Rev	By	Date
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ERF 60912 - IDZ

Drawing Title

Option 1

Ablutions

Drawing Originator
SMALE AND PARTNERS ARCHITECTS

Checked By
Checker

Checked Date
07/21/20

Drawn By
Author

Drawn Date
07/21/20

Approved By
Approver

Approval Date
07/21/20

SACAP Number
7513

Building Grid Reference

Scale
As indicated

Job No
0041

Discipline
ARCH

Type
SUB

Drawing No.
801

Revision

GENERAL STRUCTURAL NOTES

1. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTS, ENGINEERS AND SERVICES DRAWINGS AS WELL AS SPECIFICATION.
2. ANY DISCREPANCIES AND AMBIGUITIES ON THE ENGINEERS DRAWINGS TO BE REPORTED TO THE ENGINEER IMMEDIATELY BY MEANS OF AN RFI (REQUEST FOR INFORMATION).
3. LEVELS AND DIMENSIONS TO BE CHECKED BEFORE ANY WORK COMMENCES. DIMENSIONS ARE NOT TO BE SCALED.

GENERAL SITE INSPECTION NOTES

1. NO APPROVAL WILL BE GIVEN FOR THE CASTING OF CONCRETE OR ANY OTHER STAGE OF WORK UNLESS SO INSPECTED AND APPROVED BY THE ENGINEER.
2. FOR THE APPROVAL OF THE CONTINUATION OF THE NEXT STAGE OF CONSTRUCTION, ENSURE THE ENGINEER IS NOTIFIED OF THE INSPECTION WELL IN TIME TO MAKE NECESSARY TRAVEL ARRANGEMENTS.

CONCRETE NOTES

1. GENERALLY ALL CONCRETE WORK IS TO BE IN ACCORDANCE WITH EITHER THE CONTRACT SPECIFICATIONS, SANS 2001 AND SANS 1200.
2. ALL REINFORCEMENT STEEL TO BE CHECKED BY THE ENGINEER BEFORE ANY CONCRETE IS CAST. ENSURE THAT THE ENGINEER IS NOTIFIED OF THE INSPECTION DATE IN REASONABLE TIME BEFORE THE CAST TO ALLOW FOR TRAVEL ARRANGEMENTS.
3. CONCRETE STRENGTH TO BE AS FOLLOWS, UNLESS OTHERWISE INDICATED:
- | | |
|----------------------------------|-------|
| REINFORCED STRIPFOOTINGS: | 30MPa |
| GENERAL SURFACE BED SLABS: | 35MPa |
| R.C. SLABS, BEAMS, STAIRS WALLS: | 30MPa |
| R.C. COLUMNS: | 30MPa |
| COLUMN BASES: | 30MPa |
- THE ABOVE MENTIONED STRENGTH IS TO BE ACHIEVED AT 28 DAYS WITH 19mm APPROVED STONE
4. UNLESS OTHERWISE INDICATED, THE MINIMUM CONCRETE COVER TO MAIN REINFORCEMENT SHALL BE:
- | | |
|--------------------|------|
| STRIP FOOTINGS | 50mm |
| BEAMS AND COLUMNS: | 40mm |
| SLABS AND STAIRS: | 40mm |
| BASES: | 50mm |
5. ALL CONCRETE TO BE MOIST CURED FOR MINIMUM OF 7 DAYS AFTER FINAL SET OF CONCRETE USING A METHOD APPROVED BY THE ENGINEER.
6. NO HOLES OR CHASES SHALL BE CUT OR FORMED IN CONCRETE UNLESS INDICATED ON DRAWINGS, DETAILED IN SPECIFICATIONS OR APPROVED BY ENGINEER
7. NO CONDUITS, PIPES OR ELECTRICAL OR MECHANICAL EQUIPMENT SHALL BE CAST INTO CONCRETE UNLESS INDICATED ON DRAWINGS, DETAILED IN SPECIFICATIONS OR APPROVED BY ENGINEER
8. ALL EXPOSEED CONCRETE EDGES TO BE CHAMFERED 25X25mm .
9. FINISHES OF CONCRETE ACCORDING TO ARCHITECTS SPECIFICATIONS.
10. MIN 6 TEST CUBES TO BE TAKEN PER POUR PER DAY + 3 CUBES PER EVERY 50m³ OVER 100m³ CAST PER DAY. CUBES TO BE CAREFULLY MARKED, AN INDEPENDENT SANAS APPROVED LAB TO TEST 2 CUBES AT 7 DAYS AND 2 AT 28 DAYS. THE REST TO BE STORED FOR POSSIBLE FUTURE CRUSHING.

GENERAL BRICKWORK NOTES

1. ALL BRICKWORK NOTES TO BE READ IN CONJUNCTION WITH THE SANS 10400K - 2011.
2. WIRE TIES TO DOUBLE SKIN AND CAVITY WALLS AT 1 PER m²
3. DO NOT USE STEEL NAILS WITH STAINLESS STEEL OR GALVANISED IRON TIES.
4. LOADBEARING BRICKWORK/BLOCKWORK STRENGTH AS FOLLOWS:
- MASONRY UNITS: 14MPa (MIN)
 - MORTAR: CLASS II
 - ALLOW MOVEMENT JOINT AT MAXIMUM SPACING OF 10m OR AS SHOWN
 - MORTAR JOINTS TO BE FILLED PROPERLY
 - TOP OF LOADBEARING WALLS TO BE PLASTERED SMOOTH.
5. BRICKFORCE TO BE IMPLEMENTED AT EVERY AT EVERY 3rd COURSE AS WELL AS IN THE FIRST 3 COURSES ABOVE AND BELOW CONCRETE SLABS.
6. USE 2x38x750mm LONG GALVANISED HOOP IRON TIES AT THE SAME SPACING AS BRICKFORCE, NAILED TO CONCRETE COLUMNS AND BUILT INTO BRICKWORK.
7. WIRE TIES TO 2 SKIN SOLID WALLS TO BE 3.15mm DIA GALVANISED IRON SINGLE WIRE TIES AT 3 TIES PER 1 METER.
8. NO HOLES OR CHASES ALLOWED IN BRICKWALL UNLESS INDICATED ON DRAWING, SPECIFICATIONS OR APPROVED BY THE ENGINEER.

GENERAL FOUNDATION NOTES

1. ALL FOUNDATION EXCAVATIONS ARE TO BE INSPECTED AND APPROVED BY ENGINEER BEFORE FIXING STEEL REINFORCING AND BEFORE CASTING CONCRETE.
5. WHERE SUITABLE FOUNDING MATERIAL IS NOT ENCOUNTERED AT THE DEPTH SHOWN ON THE FOUNDATION DRAWINGS, EXCAVATION IS TO PROCEED TO A DEPTH AS APPROVED BY ENGINEER ON SITE
6. EXCAVATION TO BE BACKFILLED TO LEVEL WITH MASS CONCRETE OF 10/19 STRENGTH IF SO ORDERED BY THEENGINEER.
7. EXCAVATIONS WITHOUT THE AID OF SIDE SHUTTERS NOT TO EXCEED THE SPECIFICATIONS OF THE SANS 1200.
8. A MINIMUM OF 50mm THICK BLINDING LAYER. 15 MPa/19mm, TO BE CAST UNDER ALL REINFORCED BASES AND FOUNDATIONS. NO BLINDING LAYER IS REQUIRED FOR UN-REINFORCED BRICKWORK FOOTINGS OR MASS CONCRETE FOUNDATIONS. OVER-EXCAVATED FOUNDATIONS TO BE MASS CONCRETE FILLED (15MPa/19mm) TO THE CONTRACTOR COST.

STRUCTURAL STEELWORK NOTES

1. A FULL AND COMPREHENSIVE SET OF SHOP-DRAWINGS IS TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO COMMENCEMENT OF FABRICATION. THESE SHOP DRAWINGS WILL BE CHECKED FOR COMPLIANCE WITH THE DESIGN INTENT ONLY AND NOT FOR LAYOUTS AND DIMENSIONS. NO DIMENSIONAL CHECKS, OR CHECKS ON CLEATS, BOLTS, WELDS AND GUSSETS WILL BE UNDERTAKEN
2. ALL STRUCTURAL STEELWORK SHALL BE MINIMUM GRADE 300W, COLD-FORMED OPEN STEEL SECTIONS ARE TO HAVE A MINIMUM YIELD STRESS OF 240 MPa. THE CONTRACTOR IS TO ACQUIRE TENSILE STRENGTH TESTING RESULTS FOR EACH BATCH OF STEEL FROM WHICH COLD-FORMED SECTIONS ARE SOURCED.
3. THE CONTRACTOR IS TO SUBMIT A CERTIFICATE VERIFYING THE STRUCTURAL STEEL GRADE FROM THE STEEL MANUFACTURER.
4. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN, ERECTION, MAINTENANCE AND REMOVAL, IF NECESSARY, OF ALL TEMPORARY BRACING AND/OR PROPPING, WHERE REQUIRED DUE TO TRANSPORT CONSTRAINTS, THE CONTRACTOR IS TO SUBMIT A PROPOSAL FOR THE ENGINEERS APPROVAL OF THE SPLICING OF TRUSSES AND LARGER MEMBERS.
5. STRUCTURAL BOLTS SHALL BE GRADE 8.8 HOT-DIPPED-GALVANISED UNLESS OTHERWISE NOTED.
6. ALL STRUCTURAL TO BE HOT-DIPPED- GALVANISED UNLESS OTHERWISE NOTED
7. PROVIDE CEMENTITIOUS NON-SHRINK GROUT UNDER BASE PLATES PRIOR TO ANY LOADS BEING APPLIED. HOT-DIP GALVANISED LAMINATED FINGER SHAPED PACKING TO BE PROVIDED UNDER BASE PLATES

STRUCTURAL SURFACEBED NOTES

1. THE CONTRACTOR IS TO PROVIDE A DETAILED METHOD STATEMENT OUTLINING THE CONSTRUCTION OF SURFACE BEDS, SIZE OF POURS, SEQUENCE OF POURS, POSITION OF CONSTRUCTION JOINTS, PROPOSED SAW-CUT JOINTS, CURING, PROPOSED ACHIEVING OF FINISHES, INCLUDING FLOOR HARDENERS, ETC FOR APPROVAL BY THE ENGINEER.
2. UNLESS OTHERWISE INDICATED, A 350 MICRON DAMP PROOF MEMBRANE IS TO BE INSTALLED BELOW THE SURFACE BED. THE JOINTS OF THE MEMBRANE ARE TO BE LAPPED AND THOROUGHLY SEALED.
3. ISOLATE ALL COLUMNS AND WALLS FROM THE SURFACE BED USING 10mm JOINTEX FILLED ISOLATION OR (EXPANSIONS) JOINTS (I.J.), ONCE THE CONCRETE IS SET TO RAKE OUT THE TOP 10mm OF JOINTEX AND SEAL WITH APPROVED POLYSULPHIDE OR SIMILAR JOINT SEALANT.
4. ONCE THE CONCRETE IS FIRMLY SET, 7 TO 15 HOURS AFTER POURING, COMMENCE THE SAW-CUT JOINTS. JOINTS IN FINISHES TO BE PLACED DIRECTLY OVER ALL JOINTS IN THE SURFACE BEDS.
5. ALL BACKFILLING TO SURFACE BEDS TO COMPLY WITH SABS 1200 DM CLAUSE 3.2.4. IMPORTED APPROVED COHESIONLESS BACKFILL, IN LAYERS NOT EXCEEDING 150mm, TO BE COMPACTED TO 98% MOD AASHTO

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C	ISSUED FOR TENDER	25/07/2020		
A	ISSUED FOR INFORMATION	26/06/2020		

No	Revision Description	ISS	BY	TC
Revision				

TENDER

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
ERF 78060 - East London

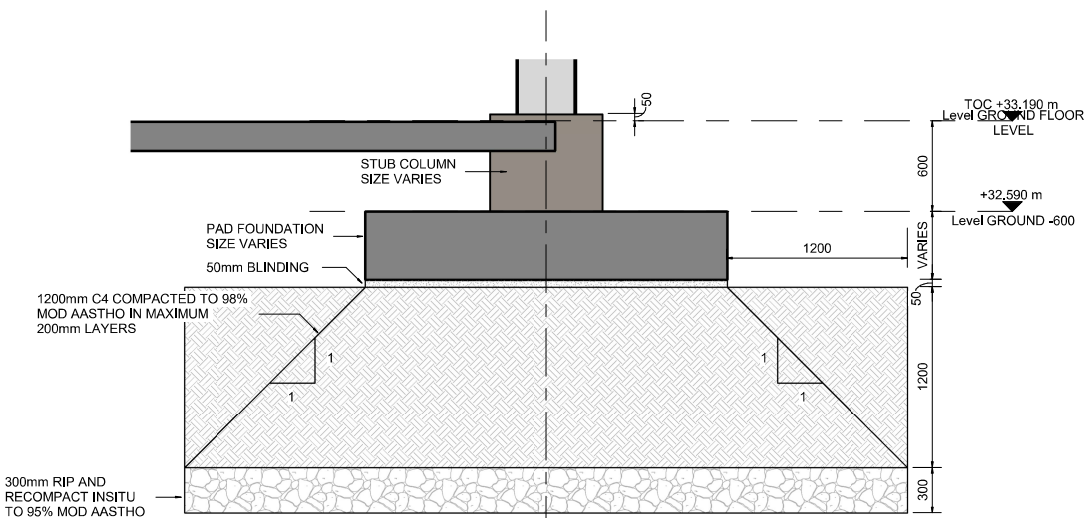
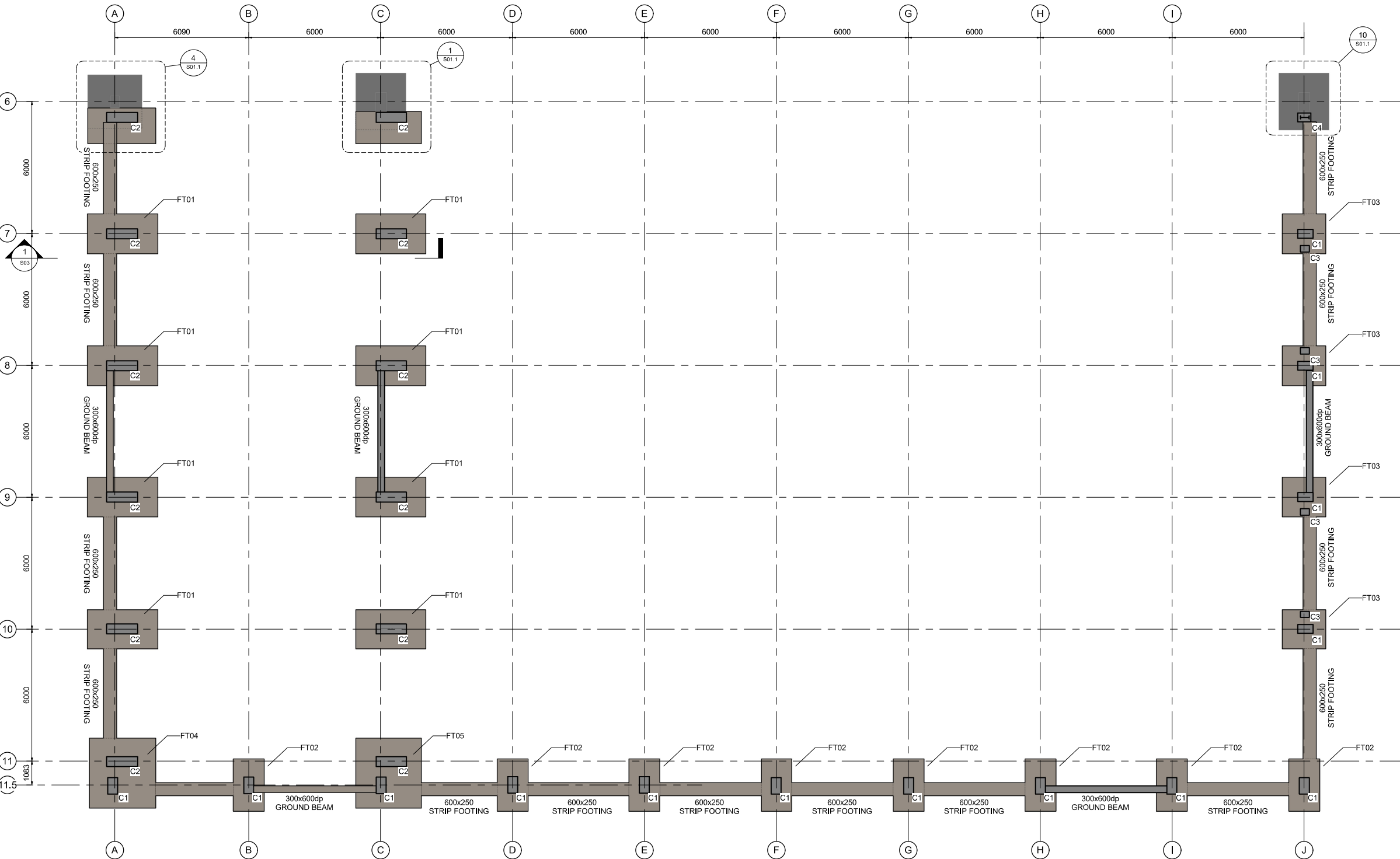
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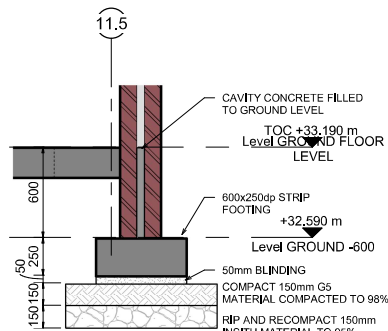
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HSC CONSULTING ENGINEERS

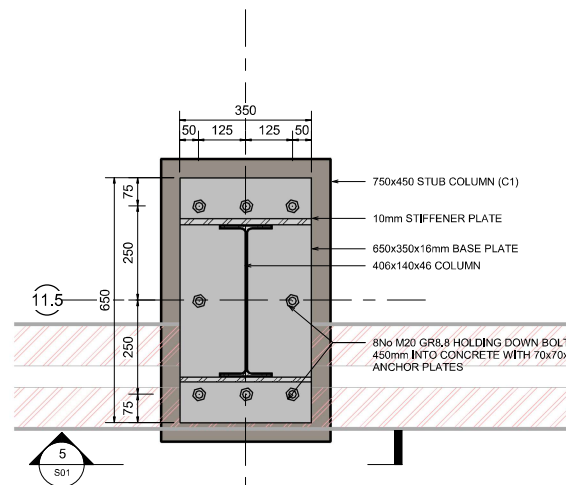
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Approved By	Approval Date	Approved Signature		
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Building Grid Reference		Scale		
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Job No	Discipline	Type	Drawing No.	Revision
P1947	STRUCT	SUB	S00	C



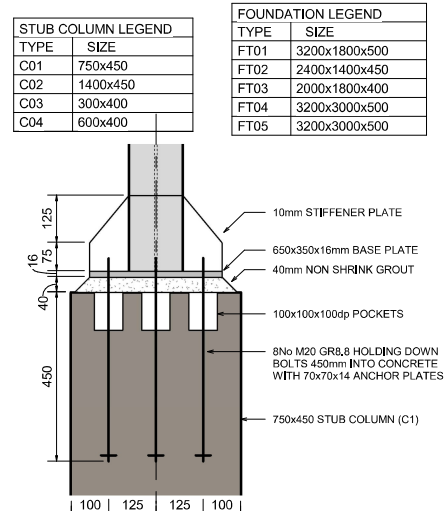
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Scale 1 : 25



Detail 1
TYPICAL STRIP FOUNDATION
Scale 1 : 25



Detail 4
BASEPLATE LAYOUT
Scale 1 : 10



Section 5-5
BASE PLATE
Scale 1 : 10

STUB COLUMN LEGEND	
TYPE	SIZE
C01	750x450
C02	1400x450
C03	300x400
C04	600x400

FOUNDATION LEGEND	
TYPE	SIZE
FT01	3200x1800x500
FT02	2400x1400x450
FT03	2000x1800x400
FT04	3200x3000x500
FT05	3200x3000x500

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C	ISSUED FOR TENDER	25/07/2020		
A	ISSUED FOR INFORMATION	26/06/2020		

No	Revision Description	Rev	By	Date
Revision				

TENDER




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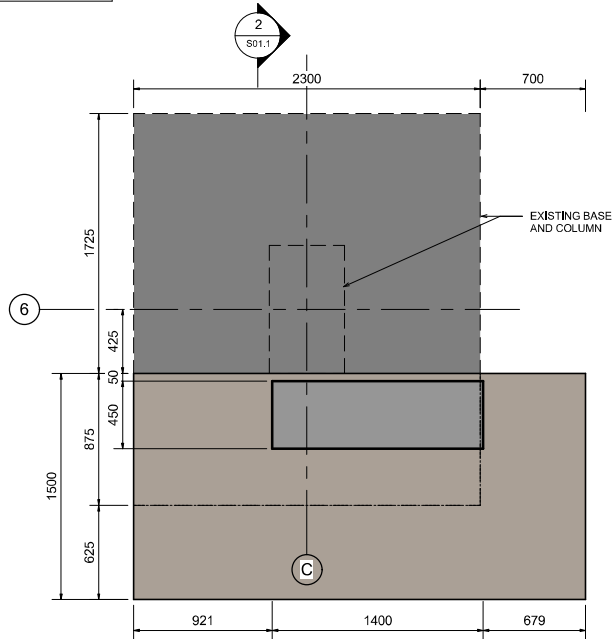
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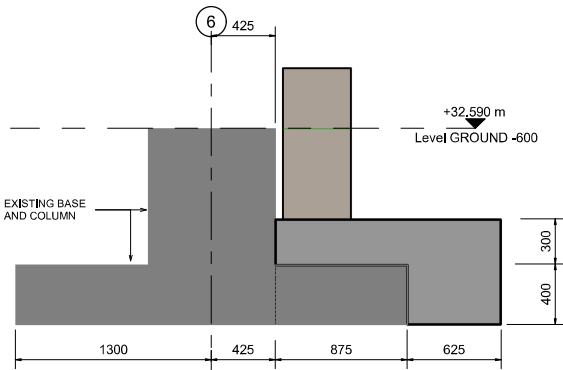
Project Name / Client
SMITH PLASTICS/AUTOMOULD
ERF 78060 - East London

Drawing Title
FOUNDATION LAYOUT

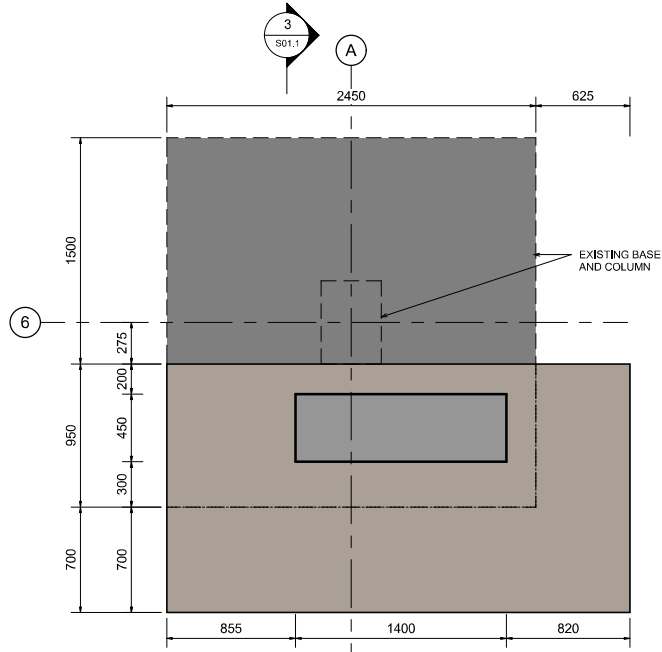
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Building Grid Reference		Scale As indicated		
Job No P1947	Discipline STRUCT	Type SUB	Drawing No. S01	Revision C



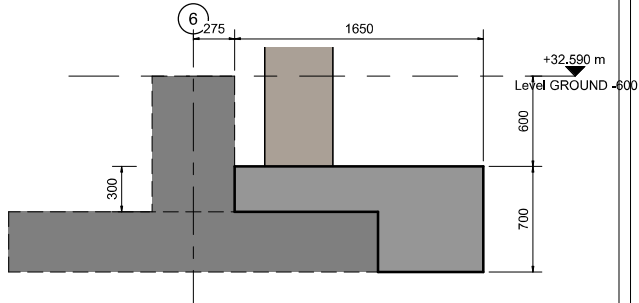
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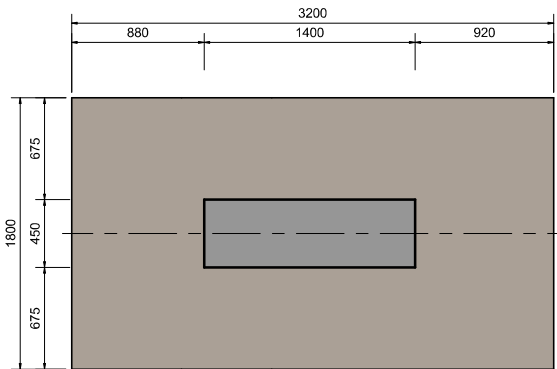
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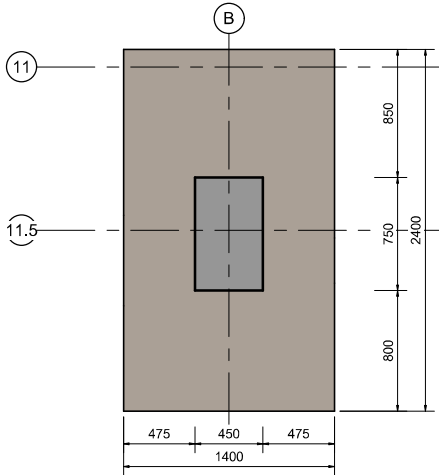
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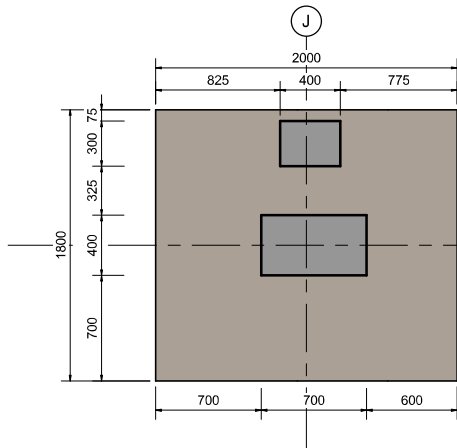
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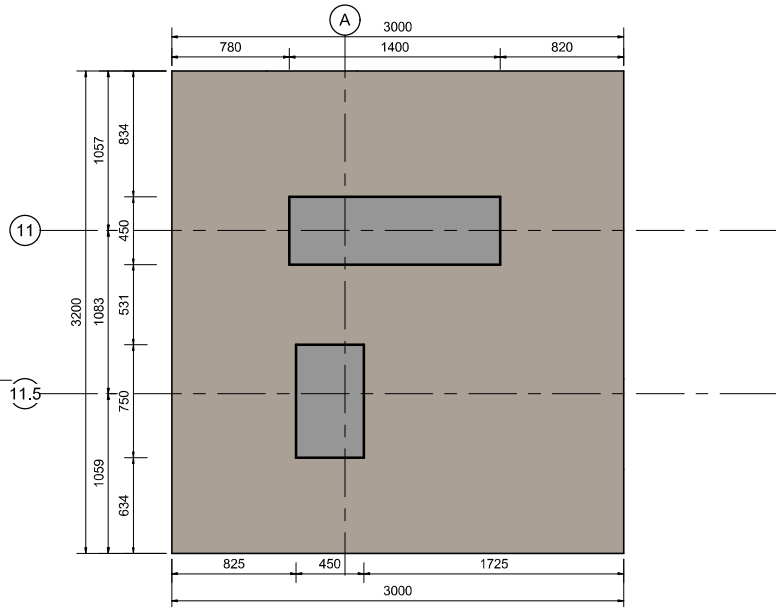
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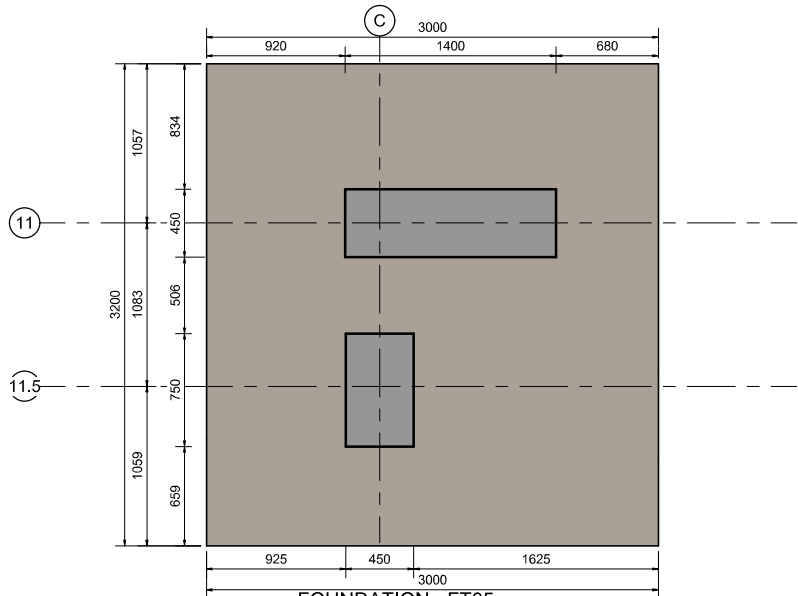
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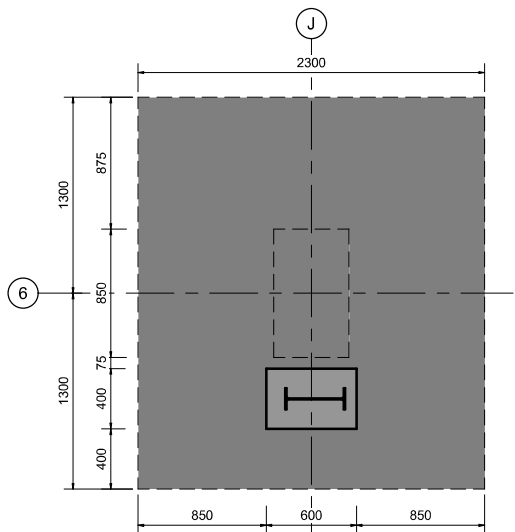
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FOUNDATION - FT04
Scale 1 : 25



FOUNDATION - FT05
Scale 1 : 25



FOUNDATION @ J - 6
Scale 1 : 25

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C	ISSUED FOR TENDER	25/07/2020		
A	ISSUED FOR INFORMATION	26/06/2020		
No	Revision Description	SW	BY	TC

Revision

TENDER

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Project Name / Client

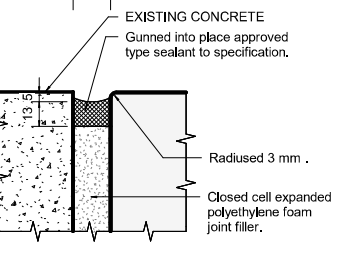
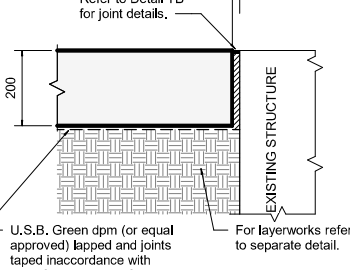
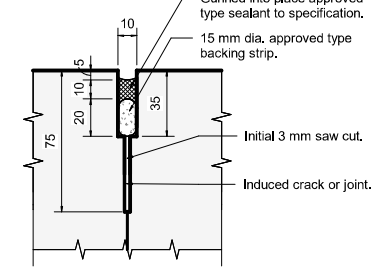
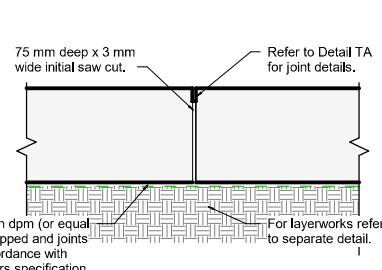
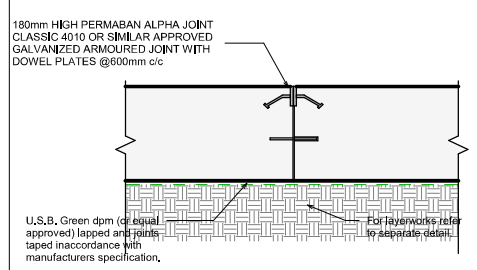
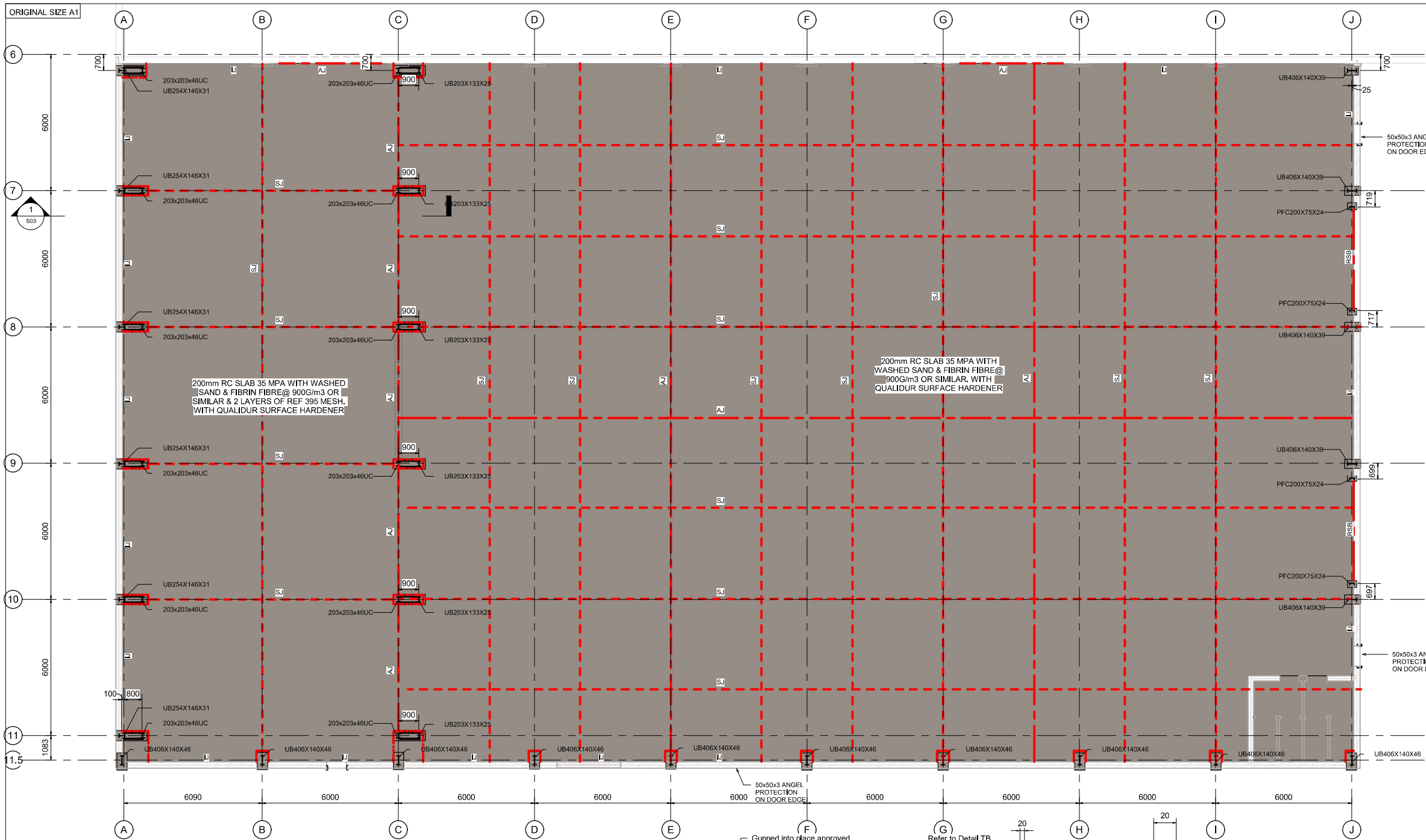
SMITH PLASTICS/AUTOMOULD

ERF 78060 - East London

Drawing Title

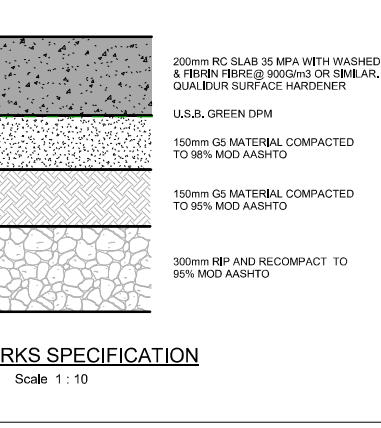
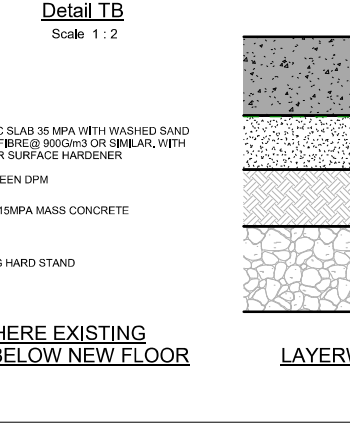
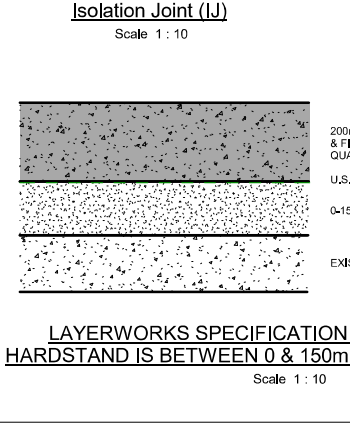
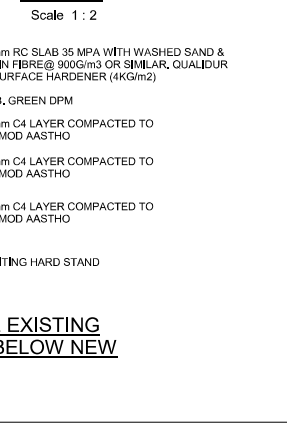
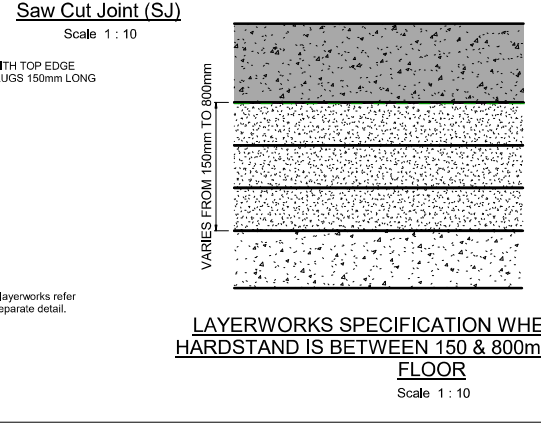
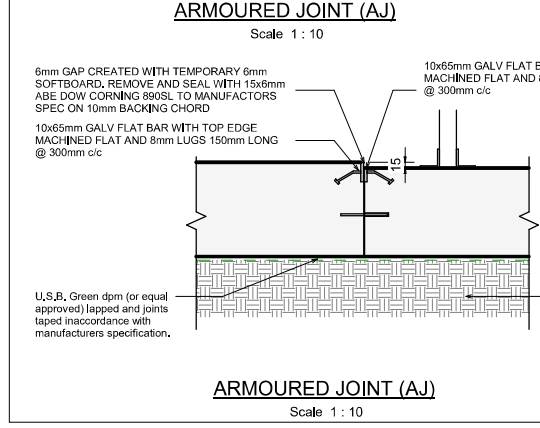
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Drawing Originator HSC CONSULTING ENGINEERS				
Checked By AS	Checked Date 06/22/20	Drawn By BB	Drawn Date 06/22/20	
Approved By A SCOTT	Approval Date 06/22/20	Approved Signature 		
Building Grid Reference		Scale 1 : 25		
Job No P1947	Discipline STRUCT	Type SUB	Drawing No. S01.1	Revision C



ESTIMATED LAYERWORK VOLUMES UNDER SURFACE BED:

G5	=	20m3
C4	=	128m3
15MPA MASS CONCRETE	=	680m3



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C	ISSUED FOR TENDER	25/07/2020		
A	ISSUED FOR INFORMATION	26/06/2020		

No	Revision Description	Rev	By	Date
Revision				
TENDER				

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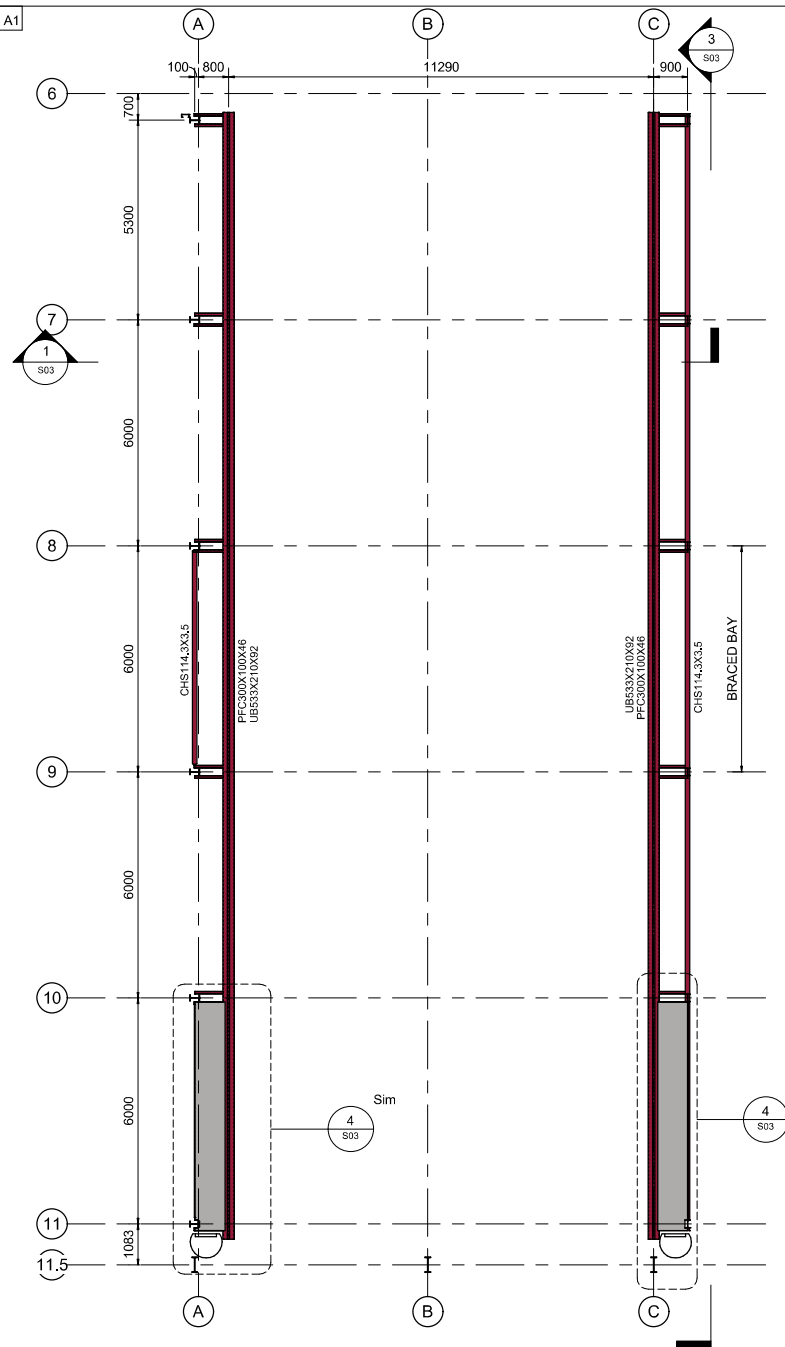
HSC CONSULTING

Project Name / Client

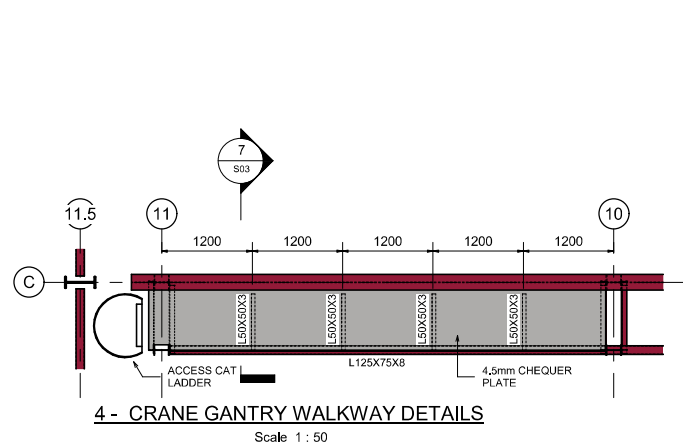
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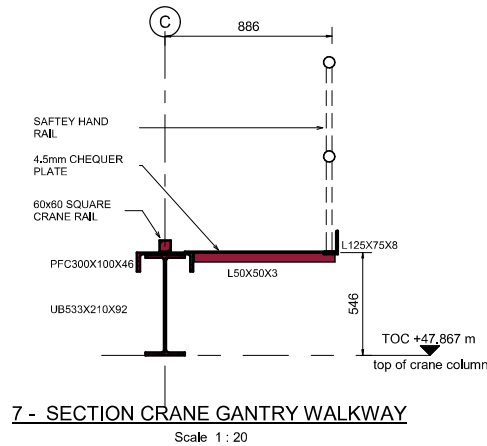
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Checked By AS	Checked Date 06/19/20	Drawn By BB	Drawn Date 06/19/20	
Approved By A SCOTT	Approval Date 06/19/20	Approved Signature 		
Building Grid Reference		Scale As indicated		
Job No P1947	Discipline STRUCT	Type SUB	Drawing No. S02	Revision C



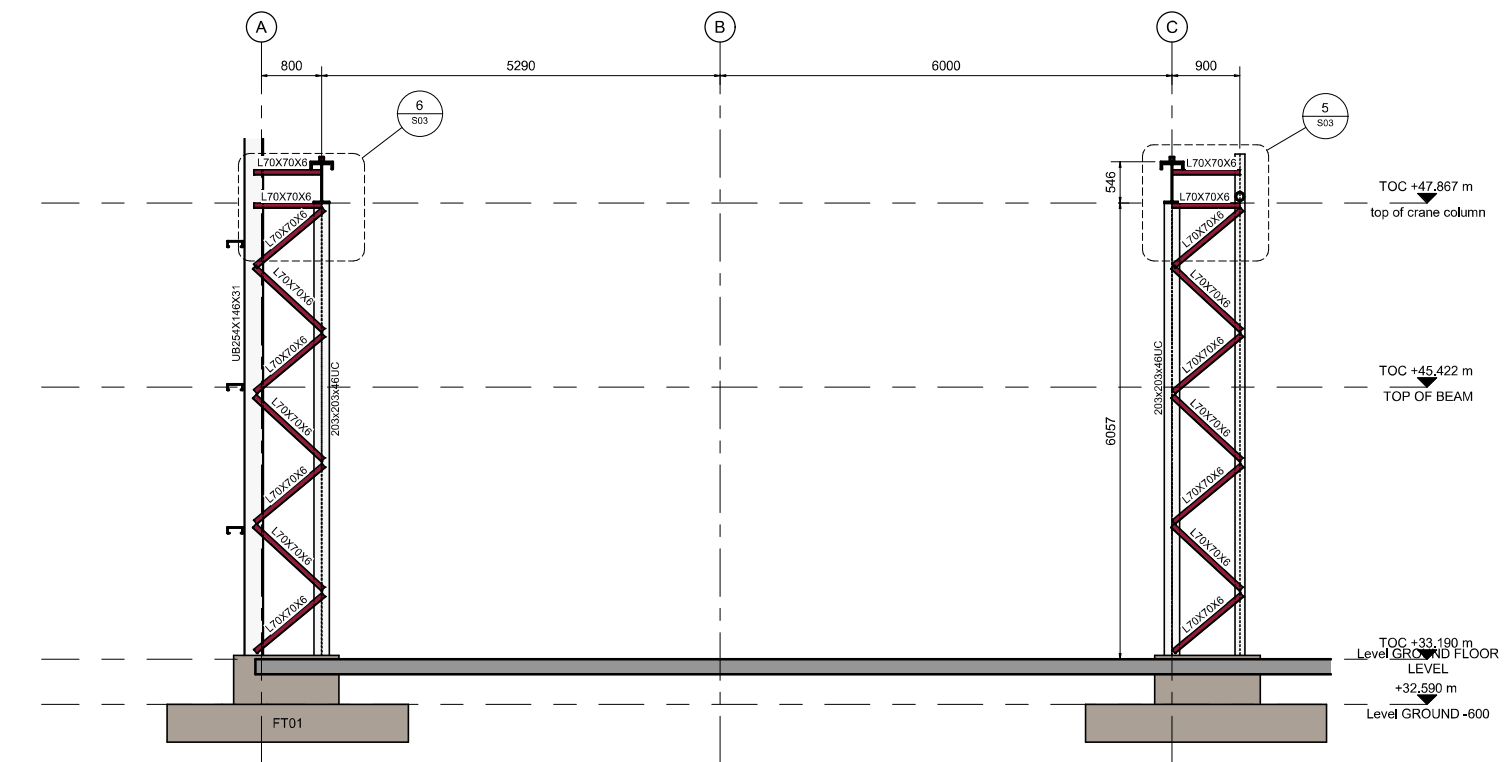
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Scale 1 : 100



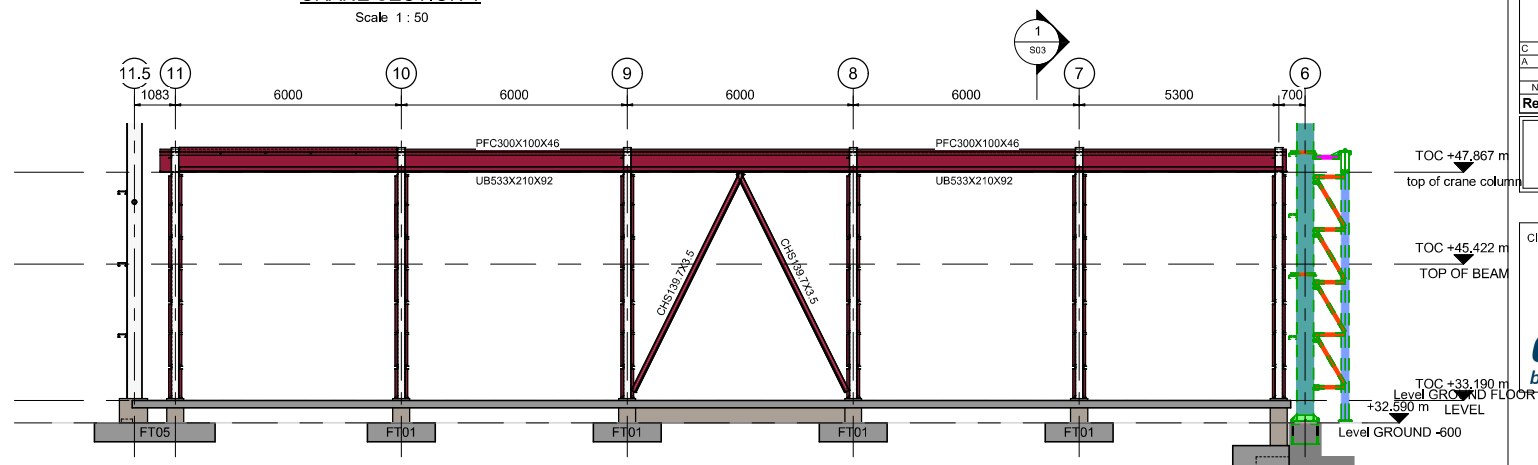
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Scale 1 : 50



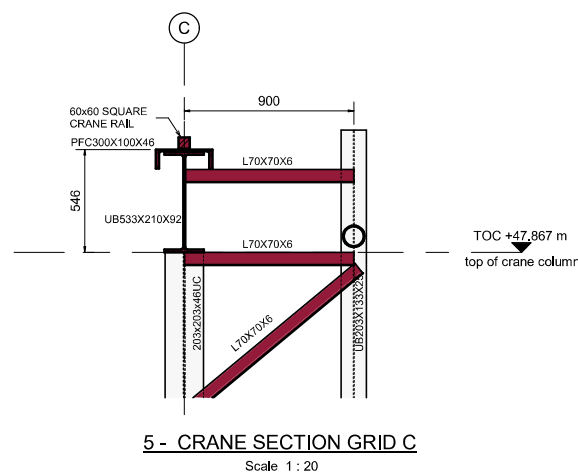
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Scale 1 : 20



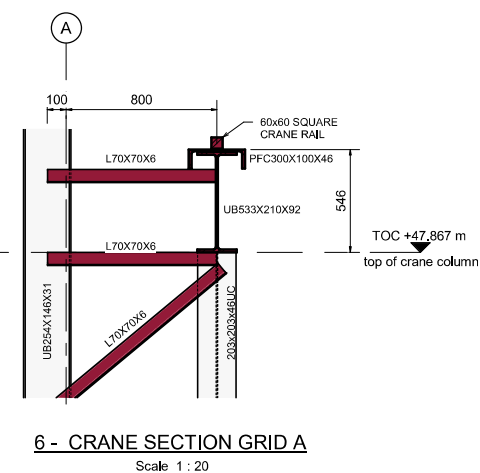
CRANE SECTION 1
Scale 1 : 50



Section 14
Scale 1 : 100



5 - CRANE SECTION GRID C
Scale 1 : 20



6 - CRANE SECTION GRID A
Scale 1 : 20

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C	ISSUED FOR TENDER	25/07/2020		
A	ISSUED FOR INFORMATION	26/06/2020		

No	Revision Description	Rev	By	Date
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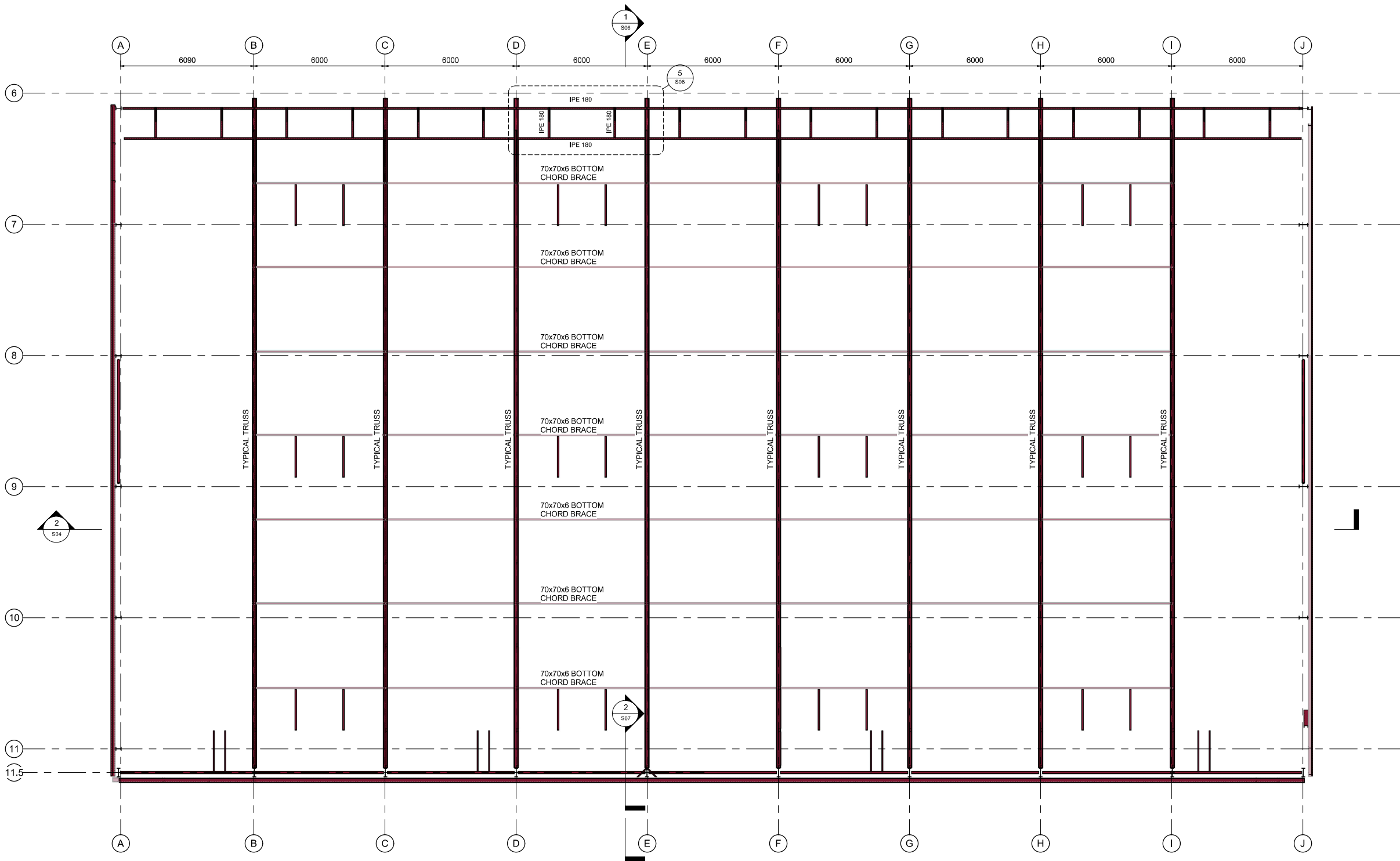
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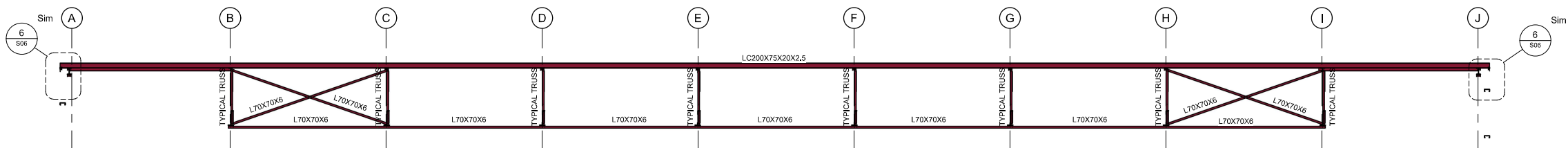
Project Name / Client
SMITH PLASTICS/AUTOMOULD
ERF 78060 - East London

Drawing Title
GANTRY CRANE LAYOUT AND DETAILS

Drawing Originator HSC CONSULTING ENGINEERS				
Checked By AS	Checked Date 06/19/20	Drawn By BB	Drawn Date 06/19/20	
Approved By A SCOTT	Approval Date 06/19/20	Approved Signature <i>[Signature]</i>		
Building Grid Reference		Scale As indicated		
Job No P1947	Discipline STRUCT	Type SUB	Drawing No. S03	Revision C



1 - ROOF BOTTOM CHORD LAYOUT
Scale 1 : 100



Section 2-2
BOTTOM CHORD BRACING
Scale 1 : 100

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C	ISSUED FOR TENDER	25/07/2020		
A	ISSUED FOR INFORMATION	26/06/2020		

No	Revision Description	Rev	By	Date
Revision				

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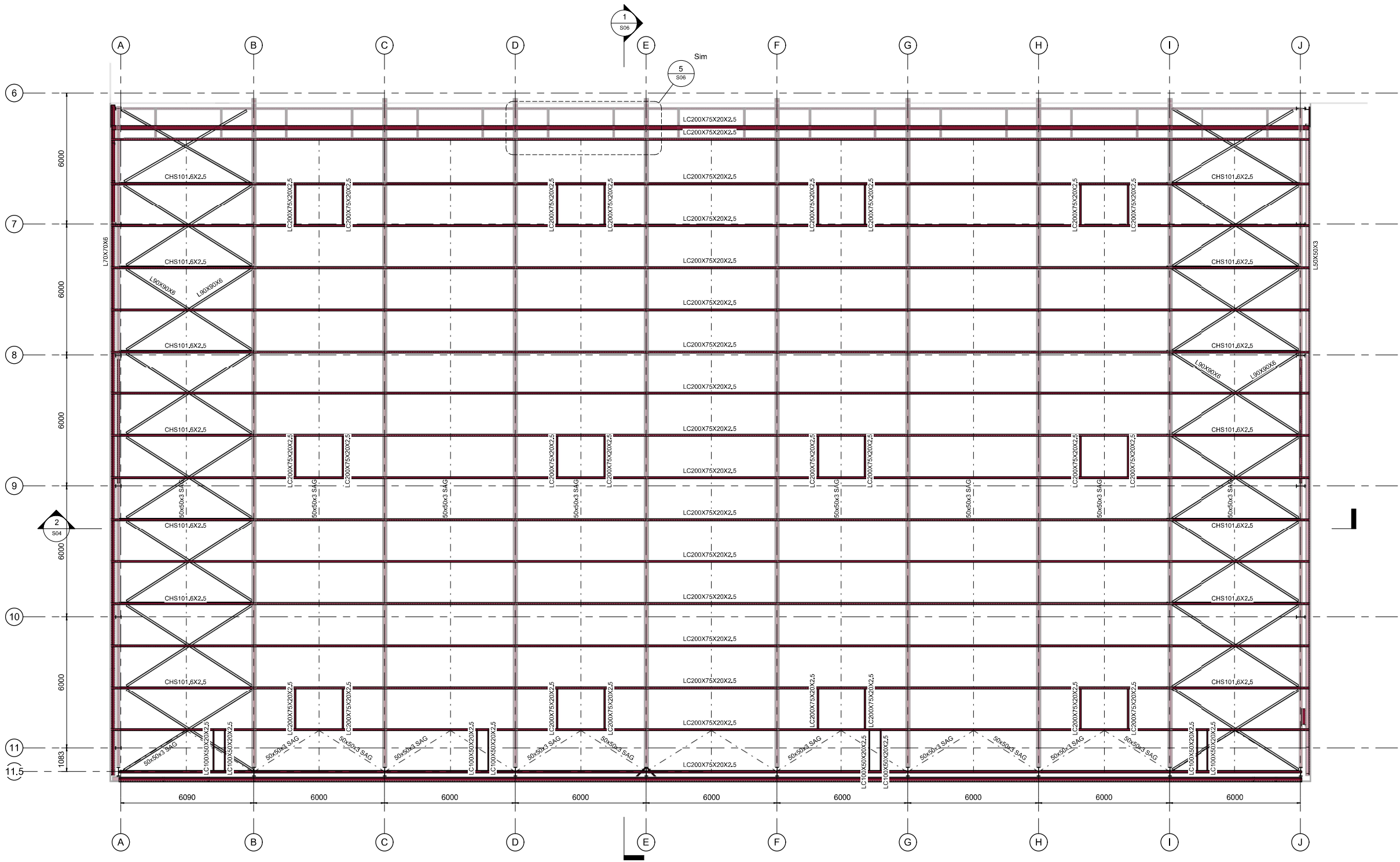


Project Name / Client
SMITH PLASTICS/AUTOMOULD

ERF 78060 - East London

Drawing Title
ROOF BOTTOM CHORD LAYOUT

Drawing Originator HSC CONSULTING ENGINEERS				
Checked By AS	Checked Date 06/19/20	Drawn By BB	Drawn Date 06/19/20	
Approved By A SCOTT	Approval Date 06/19/20	Approved Signature 		
Building Grid Reference		Scale 1 : 100		
Job No P1947	Discipline STRUCT	Type SUB	Drawing No. S04	Revision C



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C	ISSUED FOR TENDER	22/07/2020		
B	ISSUED FOR INFORMATION	29/07/2020		
A	ISSUED FOR INFORMATION	26/06/2020		

No	Revision Description	Rev	By	Date
1	TENDER			




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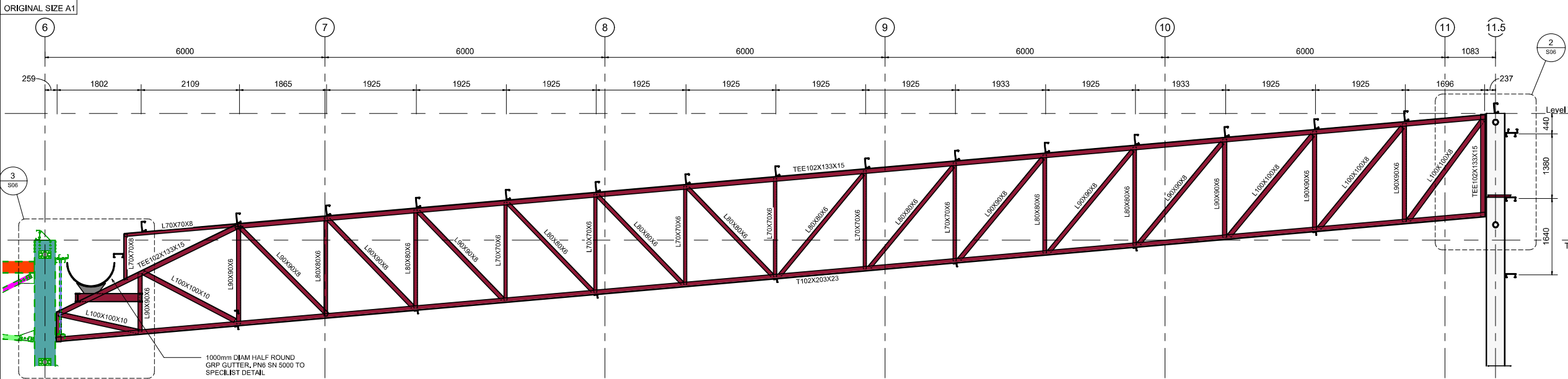
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fax : (043) 743 5347



Project Name / Client
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ERF 78060 - East London

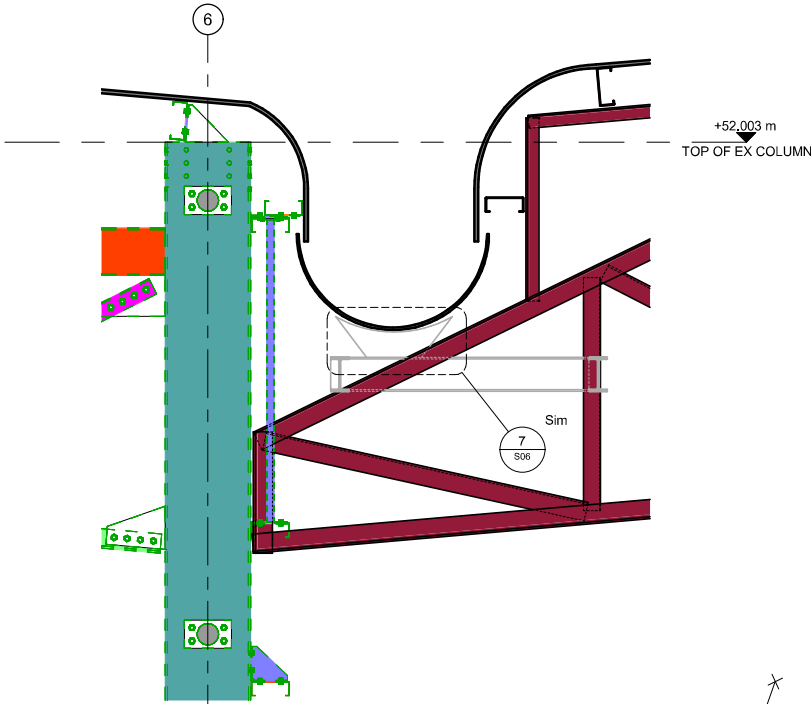
Drawing Title
ROOF LAYOUT PURLINS AND BRACING

Drawing Originator HSC CONSULTING ENGINEERS				
Checked By AS	Checked Date 06/19/20	Drawn By BB	Drawn Date 06/19/20	
Approved By A SCOTT	Approval Date 06/19/20	Approved Signature 		
Building Grid Reference		Scale 1 : 100		
Job No P1947	Discipline STRUCT	Type SUB	Drawing No. S05	Revision C



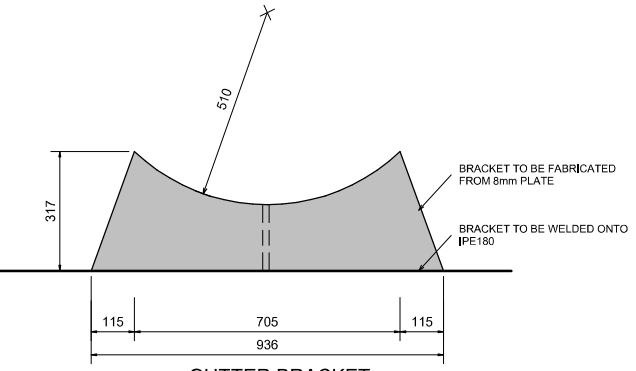
TYPICAL TRUSS

Scale 1 : 50



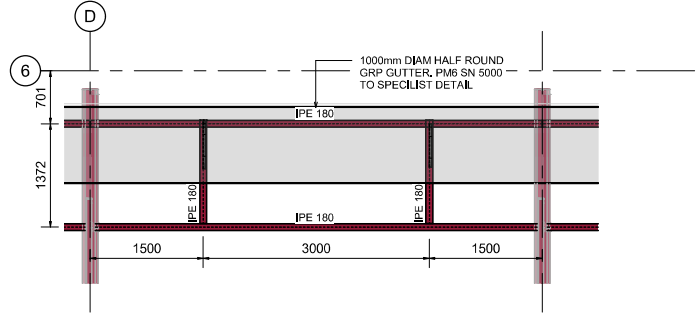
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Scale 1 : 20



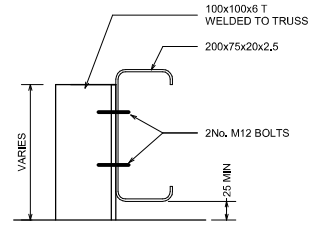
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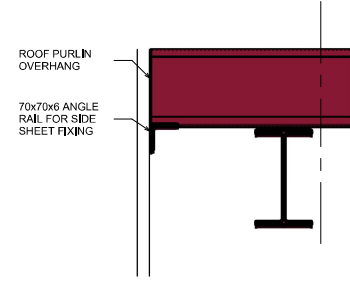
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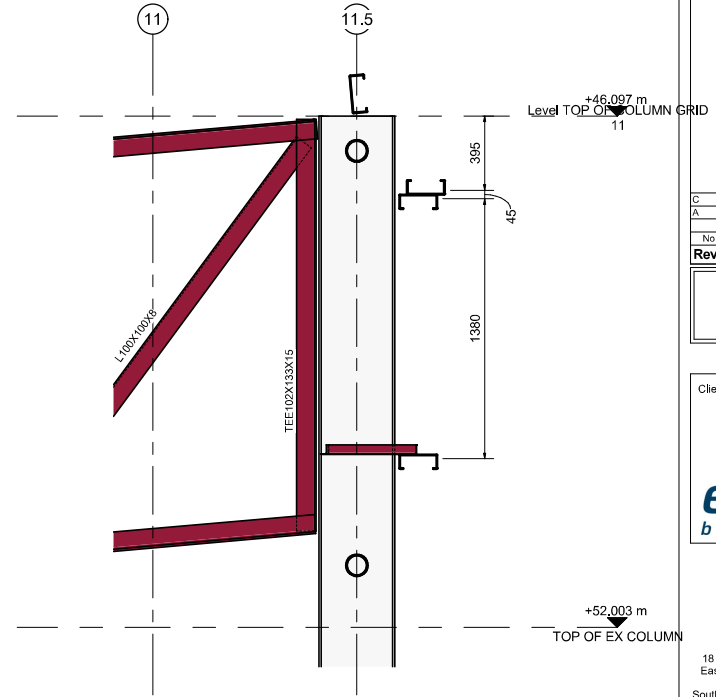
TYPICAL PURLIN/GIRT CONNECTION

Scale 1 : 5



6 - SIDE RAIL FIXING

Scale 1 : 10



TRUSS CONNECTION @ GL11.5

Scale 1 : 20

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C	ISSUED FOR TENDER	25/07/2020		
A	ISSUED FOR INFORMATION	26/06/2020		

No	Revision Description	Rev	By	Date
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Revision

TENDER

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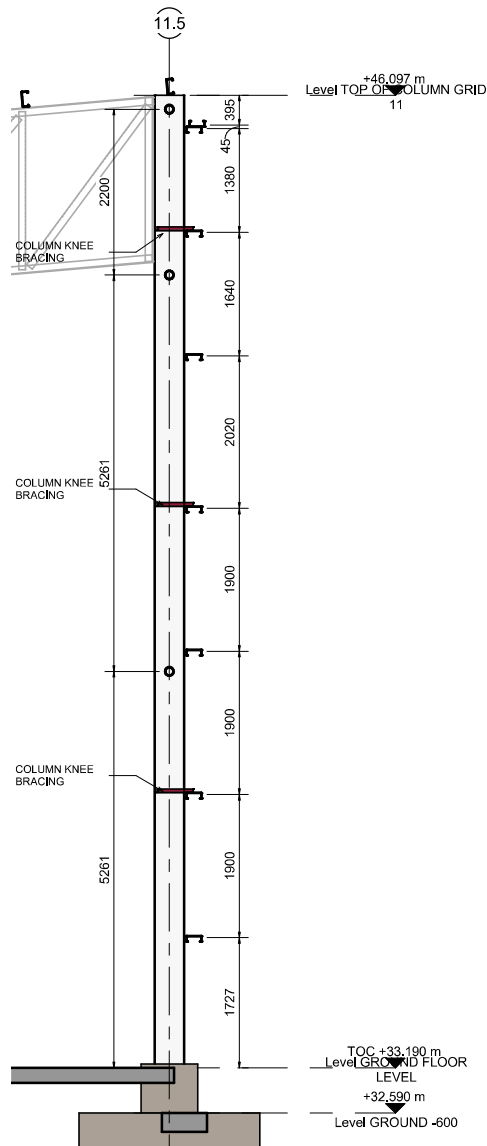
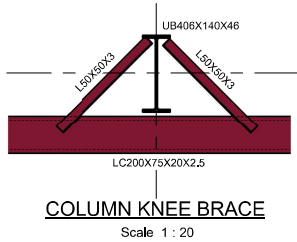
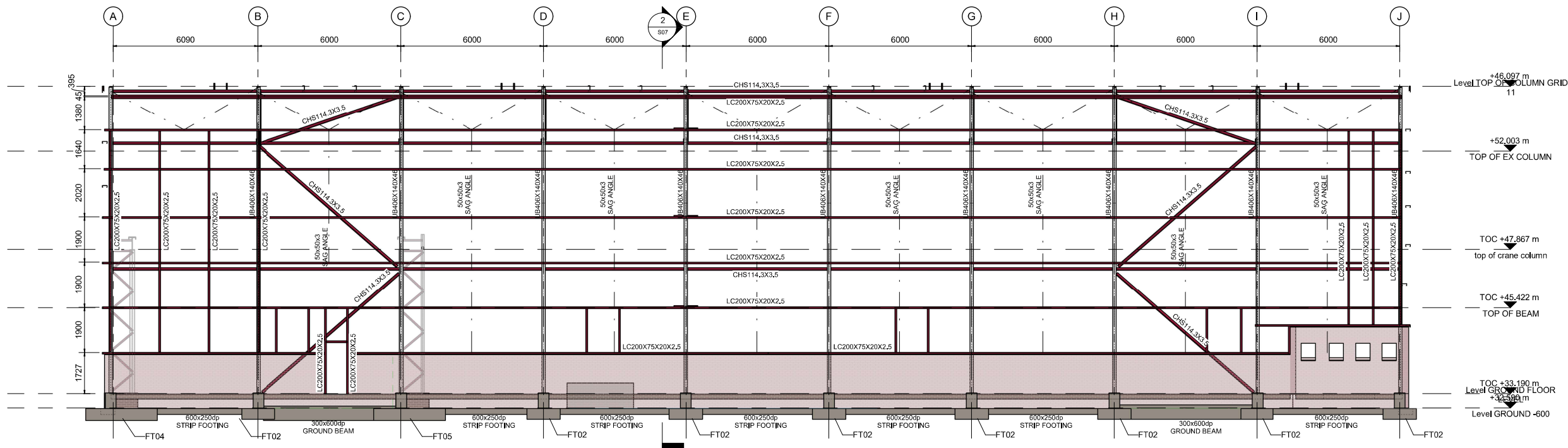
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Drawing Title

TRUSS SECTIONS AND CONNECTIONS

Drawing Originator HSC CONSULTING ENGINEERS				
Checked By AS	Checked Date 06/19/20	Drawn By BB	Drawn Date 06/19/20	
Approved By A SCOTT	Approval Date 06/19/20	Approved Signature 		
Building Grid Reference		Scale As indicated		
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Section 2-2
ELEVATION 11.5
Scale 1:50

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
C	ISSUED FOR TENDER	25/07/2020		
No	Revision Description	Rev	By	Date

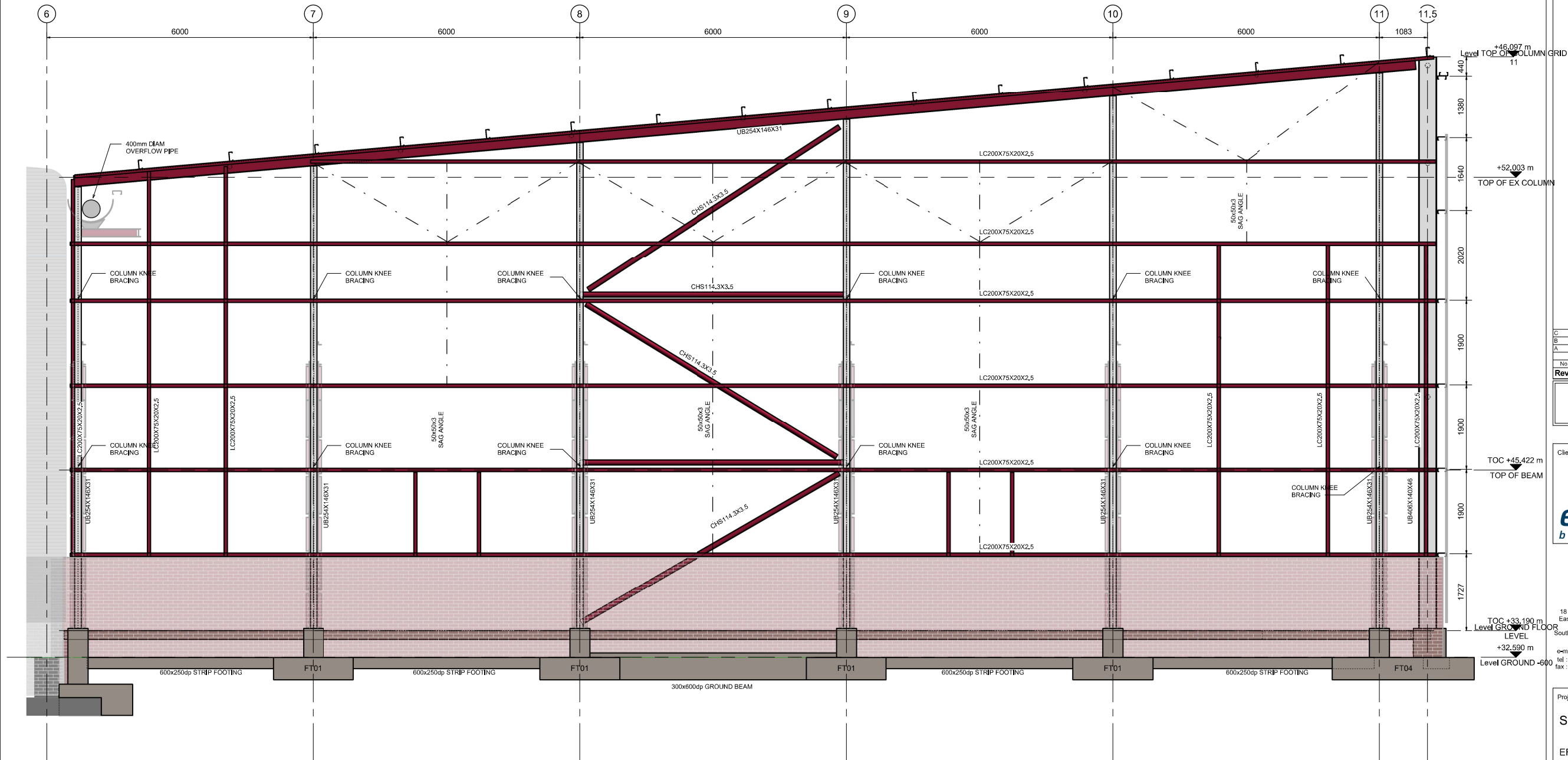
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Project Name / Client
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ERF 78060 - East London

Drawing Title
ELEVATION GRID 11.5

Drawing Originator HSC CONSULTING ENGINEERS				
Checked By AS	Checked Date 06/22/20	Drawn By BB	Drawn Date 06/22/20	
Approved By A SCOTT	Approval Date 06/22/20	Approved Signature 		
Building Grid Reference		Scale As indicated		
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C	ISSUED FOR TENDER	23/07/2020		
B	ISSUED FOR INFORMATION	09/07/2020		
A	ISSUED FOR INFORMATION	26/06/2020		

No	Revision Description	SW	BY	TC
Revision				

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
Project Name / Client

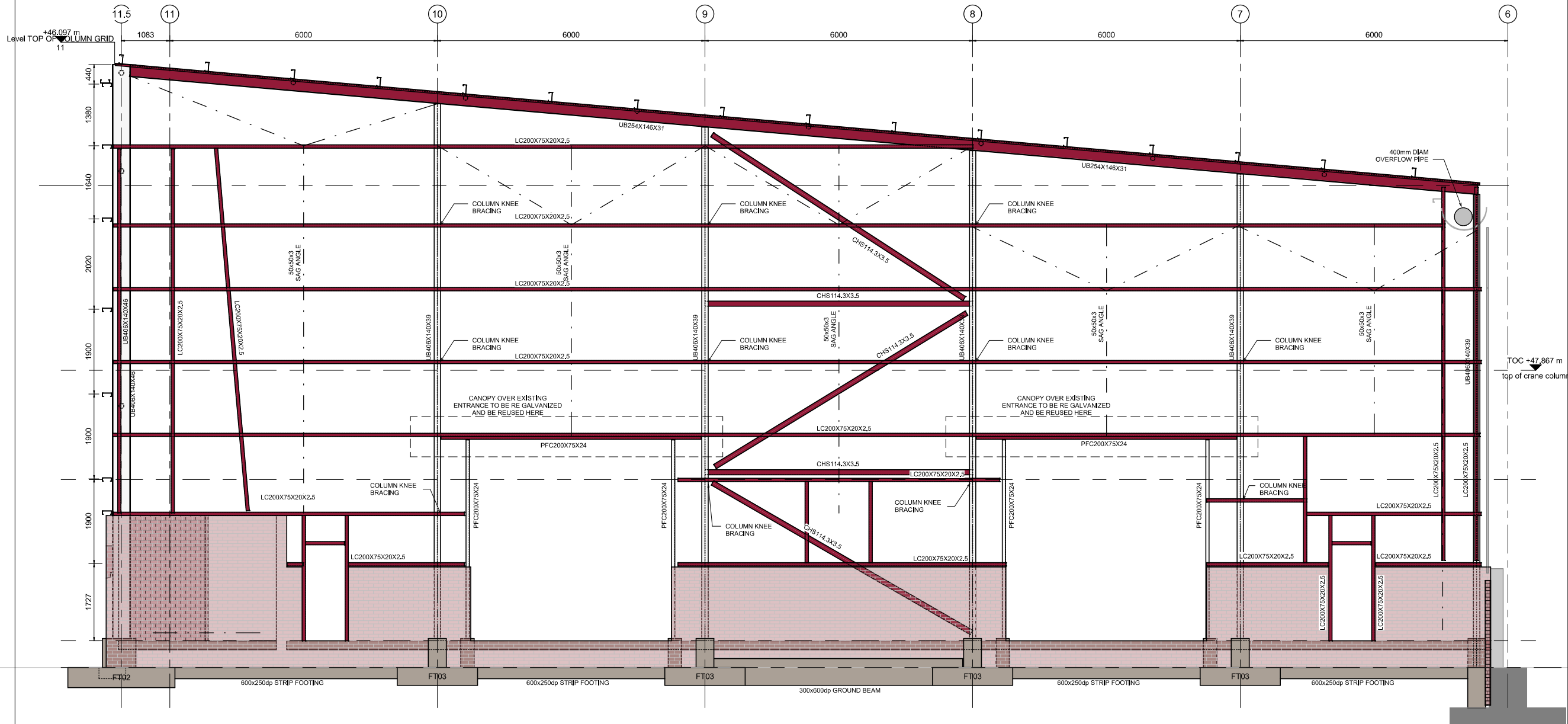
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Drawing Title

ELEVATION GRID - A

Drawing Originator HSC CONSULTING ENGINEERS				
Checked By AS	Checked Date 06/22/20	Drawn By BB	Drawn Date 06/22/20	
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C	ISSUED FOR TENDER	22/07/2020		
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A	ISSUED FOR INFORMATION	26/06/2020		

No	Revision Description	Rev	By	Date

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
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tel : (043) 743 9528
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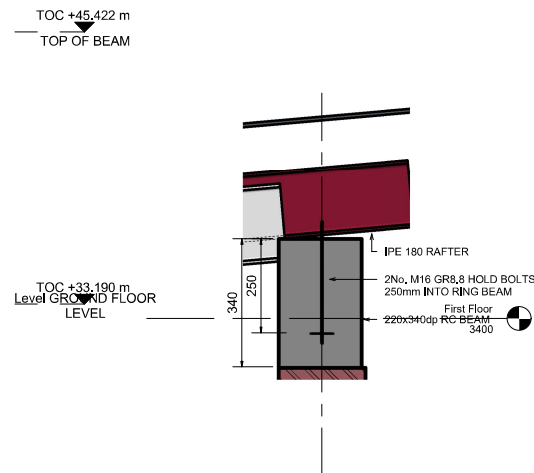
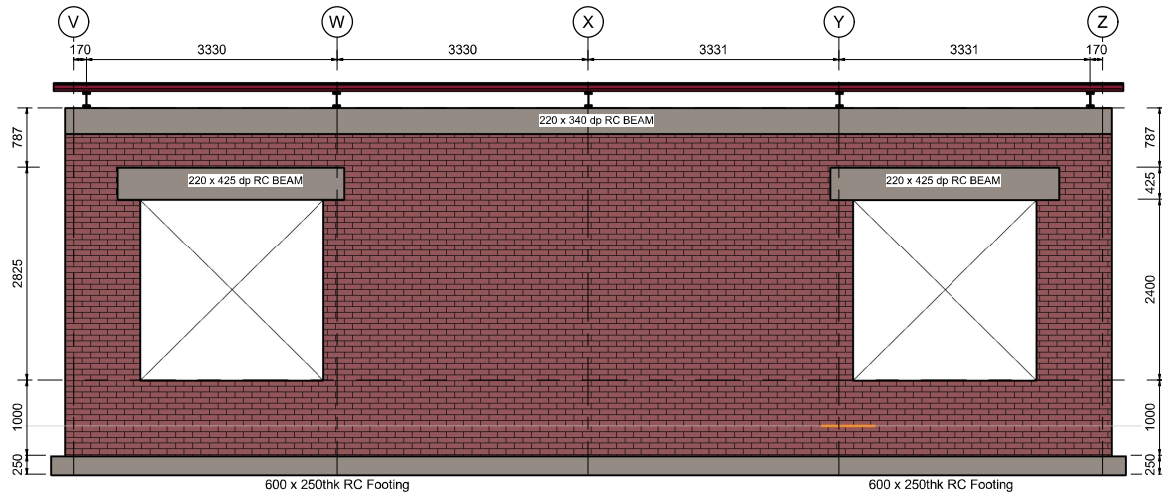
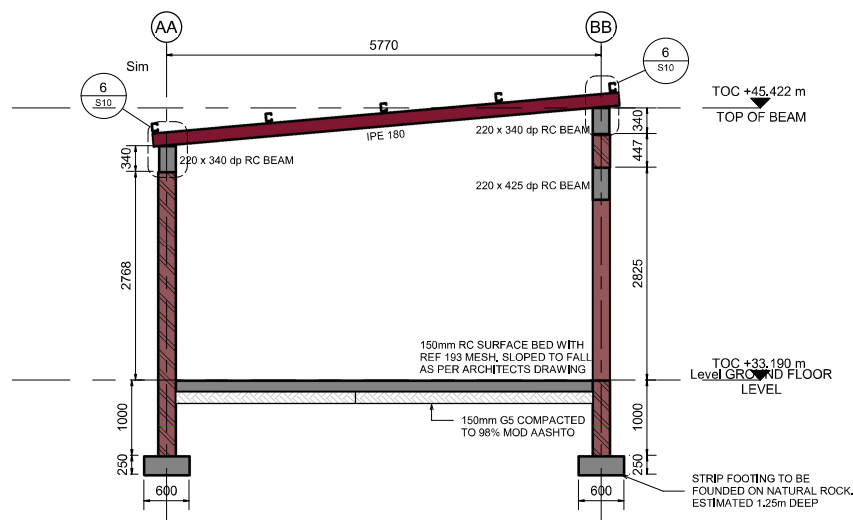
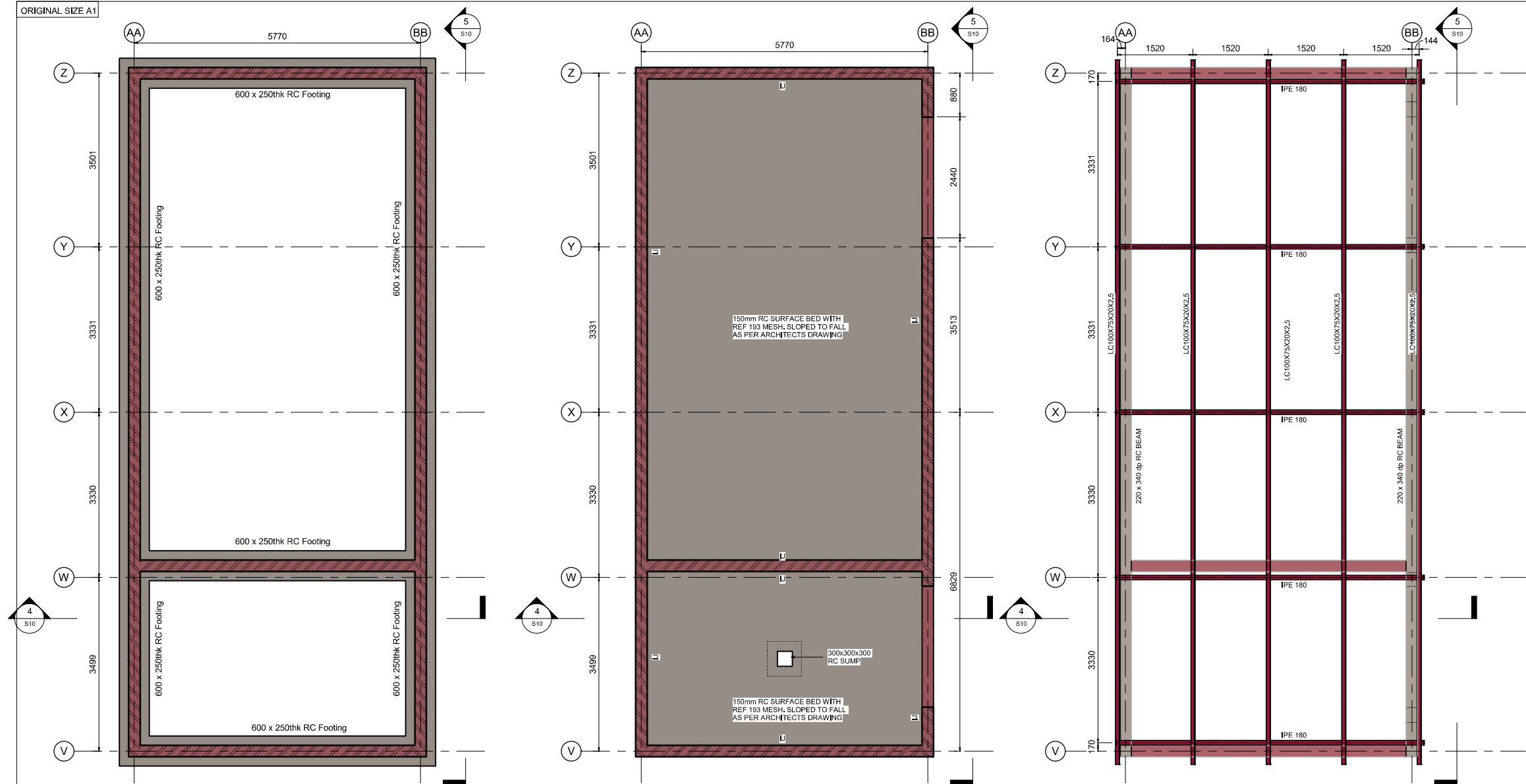
Project Name / Client
SMITH PLASTICS/AUTOMOULD

ERF 78060 - East London

Drawing Title
ELEVATION GRID - J

Drawing Originator HSC CONSULTING ENGINEERS				
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Approved By A SCOTT	Approval Date 06/22/20	Approved Signature 		
Building Grid Reference		Scale 1 : 50		
Job No P1947	Discipline STRUCT	Type SUB	Drawing No. S09	Revision C

ORIGINAL SIZE A1



- GENERAL NOTES
- 1.1. THIS DRAWING IS COPYRIGHT AND SHOULD NOT BE REPRODUCED IN WHOLE OR PART WITHOUT THE WRITTEN CONSENT OF HSC DO NOT SCALE FROM THIS DRAWING.
 - 1.2. ALL DIMENSIONS TO BE CHECKED ON SITE AND CO-ORDINATED WITH RELEVANT ARCHITECT'S DRAWINGS. ANY DISCREPANCIES TO BE REPORTED TO ENGINEER PRIOR TO FABRICATION.
 - 1.3. ALL DIMENSIONS IN mm UNLESS NOTED OTHERWISE.
 - 1.4. STRUCTURAL SIZES HEREON SHALL NOT BE MODIFIED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.
 - 1.5. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEERS, ARCHITECTS AND SPECIALISTS DRAWINGS TOGETHER WITH THE SPECIFICATIONS
 - 1.6. FOR FURTHER NOTES PLEASE REFER TO GENERAL NOTES DRAWING No.S-00

C	ISSUED FOR TENDER	29/07/2020		
B	ISSUED FOR INFORMATION	29/07/2020		
A	ISSUED FOR INFORMATION	29/06/2020		

No	Revision Description	Rev	By	Date

TENDER




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East London, 6201
P.O. Box 11166
Southernwood, 5213

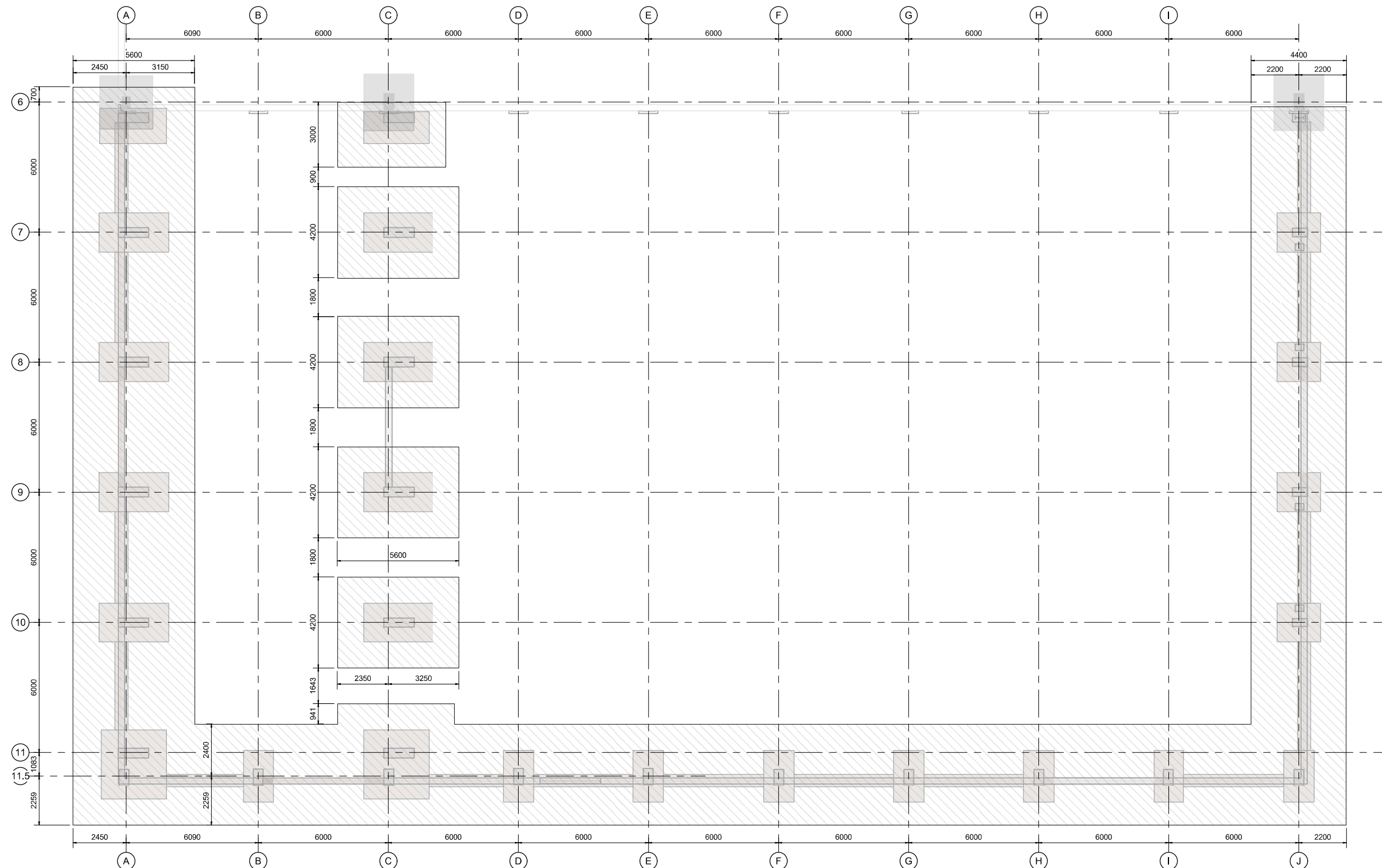
e-mail : hsc@hsc.co.za
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fax : (043) 743 5347



Project Name / Client
SMITH PLASTICS/AUTOMOULD
ERF 78060 - East London

Drawing Title
UTILITY ROOM DETAILS

Drawing Originator HSC CONSULTING ENGINEERS				
Checked By AS	Checked Date 06/30/20	Drawn By BB	Drawn Date 06/30/20	
Approved By A SCOTT	Approval Date 06/30/20	Approved Signature 		
Building Grid Reference		Scale		
		As indicated		
Job No P1947	Discipline STRUCT	Type SUB	Drawing No. S10	Revision C



GENERAL NOTES

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- 1.2. DO NOT SCALE FROM THIS DRAWING.
- 1.3. ALL DIMENSIONS TO BE CHECKED ON SITE AND CO-ORDINATED WITH RELEVANT ARCHITECT'S DRAWINGS, ANY DISCREPANCIES TO BE REPORTED TO ENGINEER PRIOR TO FABRICATION.
- 1.4. ALL DIMENSIONS IN mm UNLESS NOTED OTHERWISE.
- 1.6. STRUCTURAL SIZES HEREON SHALL NOT BE MODIFIED WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.
- 1.7. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL RELEVANT ENGINEERS, ARCHITECTS AND SPECIALISTS DRAWINGS TOGETHER WITH THE SPECIFICATIONS
- 1.8. FOR FURTHER NOTES PLEASE REFER TO GENERAL NOTES DRAWING No.S-00

C	ISSUED FOR TENDER	25/07/2020		
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No	Revision Description	Date	By	To
Revision				

No.	
Revision	

TENDER

Client



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fax : (043) 743 5347



Project Name / Client


SMITH PLASTICS/AUTOMOULD

ERF 78060 - East London

	Drawing Title
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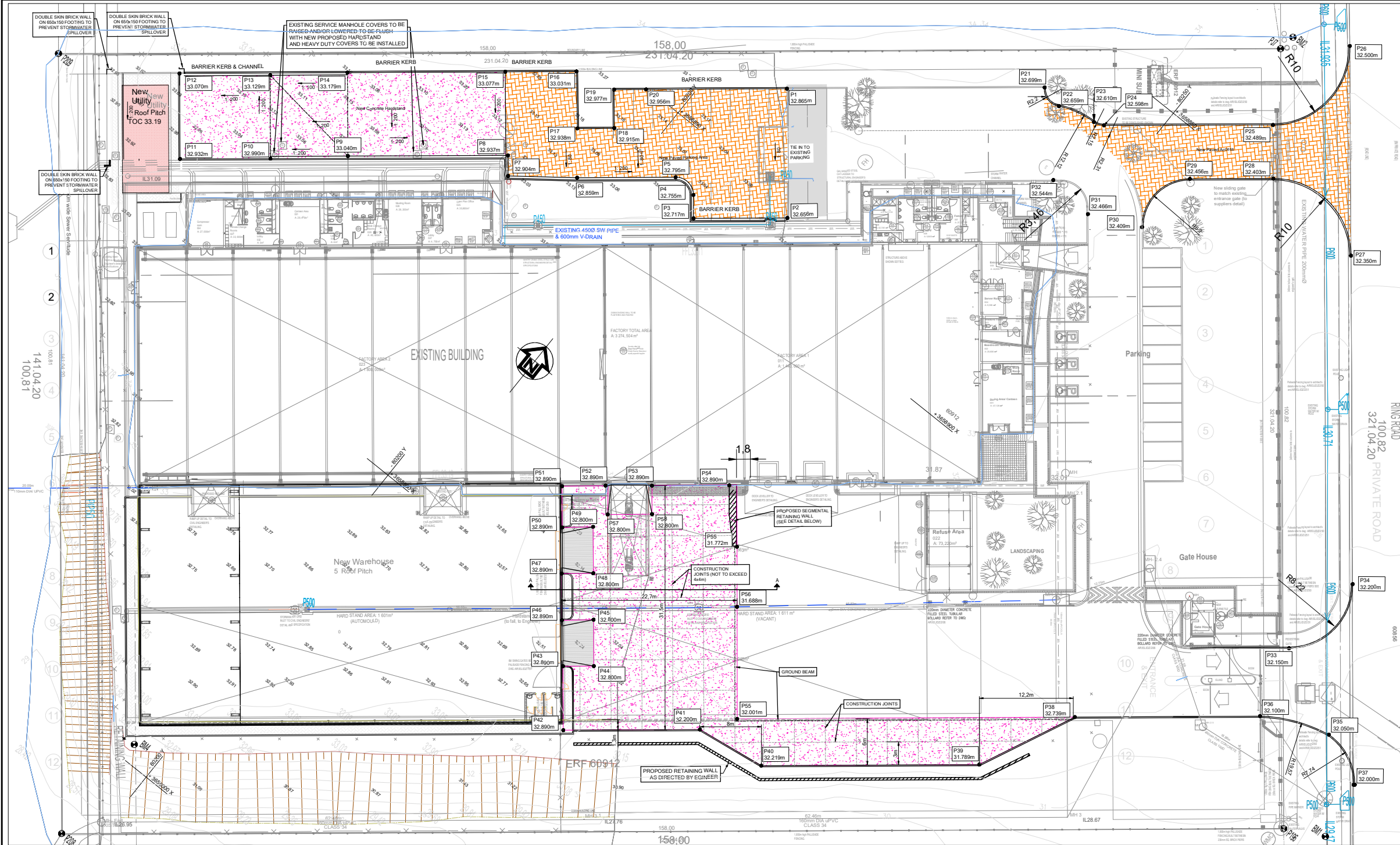
EXCAVATIONS THROUGH EXISTING HARDSTAND FOR FOUNDATIONS

Drawing Originator
HSC CONSULTING ENGINEERS

Checked By AS	Checked Date 07/25/20	Drawn By BB	Drawn Date 07/25/20
Approved By AS	Approval Date 07/25/20	Approved Signature 	

Building Grid Reference	Scale 1 : 100
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Job No	Discipline	Type	Drawing No.	Revision
P1947	STRUCT	SUB	S11	C



ACCESS AND PARKING LAYOUT PLAN

SCALE 1:200

NOTE: CONCRETE TO BE CAST IN ALTERNATE PANELS AND CONSTRUCTION JOINTS BE CONSTRUCTED EVERY 9m x 9m PANEL.

Parking & Hardstand Coordinates		
Point	Y Coordinate	X Coordinate
P1	-80209.031	3658878.758
P2	-80219.519	3658891.757
P3	-80210.087	3658899.375
P4	-80208.187	3658897.022
P5	-80204.950	3658896.680
P6	-80195.049	3658904.697
P7	-80187.945	3658910.097
P8	-80186.277	3658908.037
P9	-80170.172	3658921.038
P10	-80162.566	3658927.563
P11	-80153.470	3658934.906
P12	-80146.515	3658926.317
P13	-80155.802	3658919.184
P14	-80163.385	3658912.657
P15	-80179.238	3658899.820
P16	-80186.397	3658894.024
P17	-80191.096	3658899.710
P18	-80194.807	3658896.697
P19	-80191.662	3658892.822
P20	-80194.872	3658890.224
P21	-80234.906	3658857.827
P22	-80237.869	3658858.520
P23	-80242.715	3658857.303
P24	-80243.981	3658856.829
P25	-80261.009	3658843.124
P26	-80262.376	3658828.941
P27	-80279.430	3658850.002
P28	-80265.367	3658848.506
P29	-80256.976	3658855.284
P30	-80256.054	3658864.008
P31	-80249.528	3658867.076
P32	-80243.293	3658866.439
P33	-80304.908	3658894.610
P34	-80306.146	3658882.996
P35	-80315.890	3658900.109
P36	-80307.471	3658903.795
P37	-80322.571	3658903.058
P38	-80288.865	3658918.861
P39	-80283.056	3658931.372
P40	-80261.152	3658949.108
P41	-80252.029	3658950.429
P42	-80238.302	3658961.539
P43	-80233.074	3658965.082
P44	-80236.204	3658952.613
P45	-80232.428	3658947.950
P46	-80229.276	3658950.567
P47	-80225.469	3658945.865
P48	-80228.652	3658943.287
P49	-80224.876	3658938.624
P50	-80221.815	3658941.177
P51	-80218.459	3658937.032
P52	-80222.814	3658933.449
P53	-80227.470	3658929.689
P54	-80235.267	3658923.429
P55	-80241.007	3658928.995
P56	-80245.864	3658935.045
P57	-80225.359	3658936.196
P58	-80229.799	3658932.571

- NOTES:**
- ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THE RELEVANT SECTIONS OF SANS 1200. STANDARDISED SPECIFICATIONS FOR CIVIL ENGINEERING CONSTRUCTION.
 - SPECIAL ATTENTION IS TO BE DRAWN TO CLAUSE SANS 1200-5.7. SAFETY.
 - THE POSITIONS & LEVELS OF EXISTING SERVICES ARE APPROXIMATE AND ARE TO BE VERIFIED ON SITE BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF PROPOSED CONSTRUCTION.
 - THE CONTRACTOR IS TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF PROPOSED CONSTRUCTION.
 - A SITE INSPECTION IS TO BE ARRANGED WITH THE RELEVANT SERVICE PROVIDERS, POINTING OUT THE EXTENT OF THE WORKS, TO ENSURE THAT ALL SERVICES ARE ACCOUNTED FOR PRIOR TO THE COMMENCEMENT OF PROPOSED CONSTRUCTION.
 - CONTRACTOR TO LIAISE WITH THE BUFFALO CITY MUNICIPALITY, W.A.T. THE REINSTATEMENT OF ROAD SURFACING AND SIDEWALKS.
 - EARTHWORKS**
 - REMOVE ALL VEGETATION & ROOTS.
 - REMOVE TOPSOIL TO AN APPROPRIATE DEPTH OF 150mm.
 - REMOVE UNSUITABLE SUBGRADE MATERIAL IF ORDERED BY THE ENGINEER, ALL IN ACCORDANCE WITH SANS 1200 C.
 - COMPACT IN-SITU MATERIAL TO 95% MOD AASHTO DENSITY.
 - 67 MATERIAL FOR FILL TO BE IMPORTED OR SOURCED FROM ON SITE OPERATIONS AND COMPACTED TO 98% MOD AASHTO DENSITY IN MAX. 100mm LAYERS.
 - DENSITY TESTS TO BE UNDERTAKEN BY THE CONTRACTOR AND APPROVED BY THE ENGINEER PRIOR TO PLACING OF CONSECUTIVE LAYERS.
 - ALL CUT AND FILL EMBANKMENT SLOPES AT 1:3.
 - ROADS**
 - ALL ROAD DETAILS AND SPECIFICATIONS TO BE IN ACCORDANCE WITH SANS 1200.
 - ALL ROAD DETAILS AND SPECIFICATIONS TO BE IN ACCORDANCE WITH THE BUFFALO CITY MUNICIPALITY STANDARD SPICS, WHERE APPLICABLE.
 - KERBING**
 - ALL KERBING DETAILS AND SPECIFICATIONS TO BE IN ACCORDANCE WITH SANS 1200.
 - ALL KERBING DETAILS AND SPECIFICATIONS TO BE IN ACCORDANCE WITH THE BUFFALO CITY MUNICIPALITY STANDARD INFRASTRUCTURE DETAILS.
 - ALL KERBS AND CHANNELS TO BE 25MPa STRENGTH CONCRETE.
 - SCHEDULE**
 - USE 1:8 MORTAR UNDER PRE-CAST KERB FOR THICKNESS UP TO 30mm. ABOVE 30mm, USE 25MPa CONCRETE.
 - BACKING CONCRETE**
 - (MIN. 20MPa) TO BE ROUGH-SHUTTERED TO THE OUTSIDE FACE. CAST IN ONE POUR AND WELL CONSOLIDATED BY MECHANICAL VIBRATION.
 - CHANNEL**
 - CONSTRUCTED AFTER BACKING CONCRETE HAS SET, SMOOTH FINISH AND R10 ARISE TO CORNER.
 - ROAD MARKINGS**
 - ALL ROAD MARKINGS TO BE IN ACCORDANCE WITH SACD ROAD TRAFFIC MANUAL AND THE NATIONAL ROAD TRAFFIC REGULATION.
 - THE SETTING OUT AND PRE-MARKING OF THE LINES AND SYMBOLS SHALL BE APPROVED PRIOR TO ANY FINAL MARKINGS.
 - ROAD MARKING SHALL BE AN APPLICATION OF REFLECTIVE CEMENTITIOUS ROAD MARKING COMPOUND IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATION AND SPECIFICATION.

LEGEND :	
	BENCHMARK
	PROPOSED PAVED AREA
	PROPOSED CONCRETE HARDSTAND
	BARRIER KERB AND CHANNEL (LOW SIDE)
	BARRIER KERB (HIGH SIDE)
	EXISTING STORMWATER
	FINISHED ROAD LEVEL

BENCHMARK CO-ORDINATES			
(SYSTEM WGS 84 Lx + 27)			
12mm IRON PEG IN CONCRETE (BM1, BM2, BM4)			
16mm ROUND IRON PEG (P196)			
20mm ROUND IRON PEG (P17, P208, P209)			
Name	Y Cord	X Cord	Height
BM1	-80323.78	3658910.66	30.24
BM2	-80255.93	3658832.67	33.65
BM3	-80196.17	3658907.67	33.03
P17	-80255.81	3658844.82	33.66
P196	-80318.95	3658913.24	30.79
P208	-80196.04	3658912.52	28.26
P209	-80132.69	3658934.10	31.72

FOR TENDER ONLY

1	OMIT DETAILS & ADDED ACCOMMODATE SECTIONS A-A	2020-08-03
2	ISSUED FOR TENDER	2020-08-28

No.	DESCRIPTION / REVISIONS	DATE
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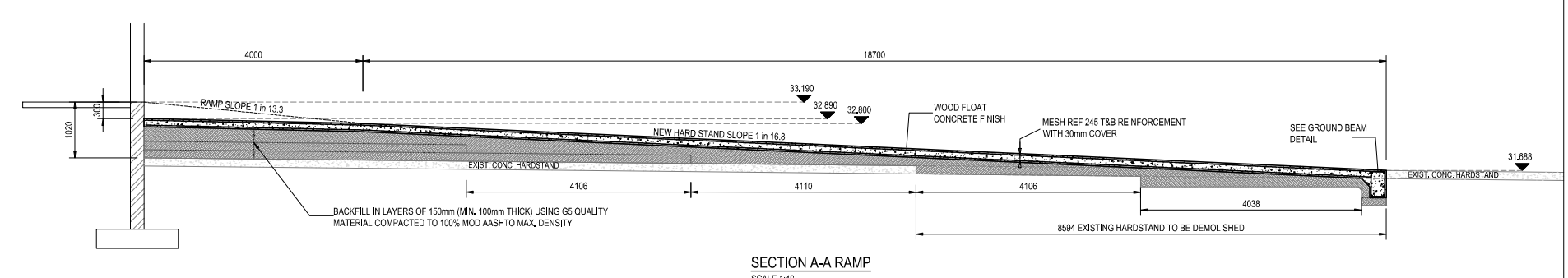
COMPUTER FILE NAME: <http://www.nako-iliso.com>

DATE	INITIALS AND SURNAME	SIGNATURE AND DATE
DESIGNED BY	Z L MTSHATSHA	
REVIEWED BY	G P JOUBERT	
DRAWN BY	Z L MTSHATSHA	
VERIFIED BY	G P JOUBERT	
QUALITY VALIDATION	A J WHITE	
NAKO ILISO	PR REG NUMBER: 96432	
APPROVED BY		
NMM		

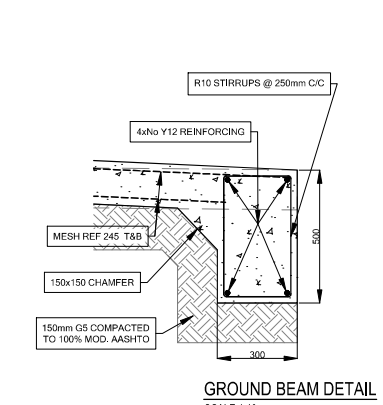
SMITHSPLASTICS / AUTOMOULD

PROPOSED PARKING AND HARDSTAND AREA LAYOUT

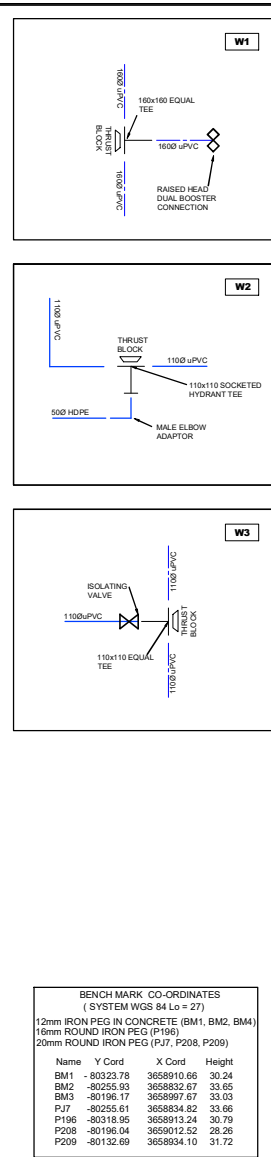
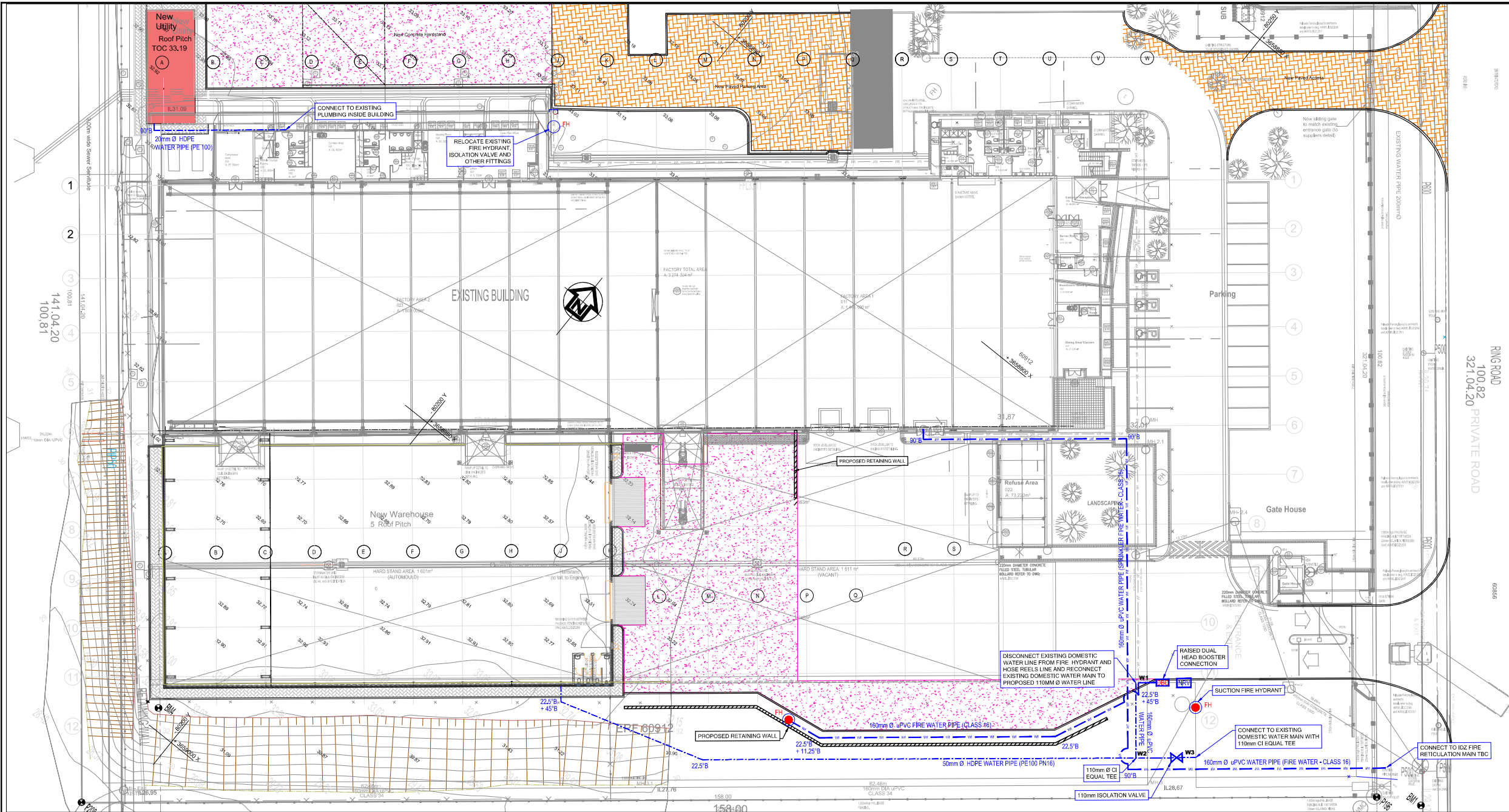
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A0	1900321-CIV-0000		B



SECTION A-A RAMP
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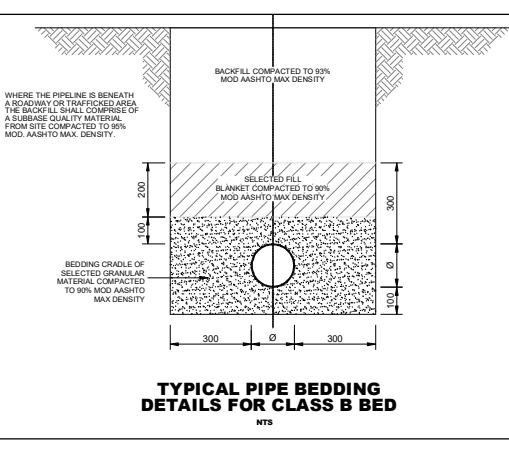
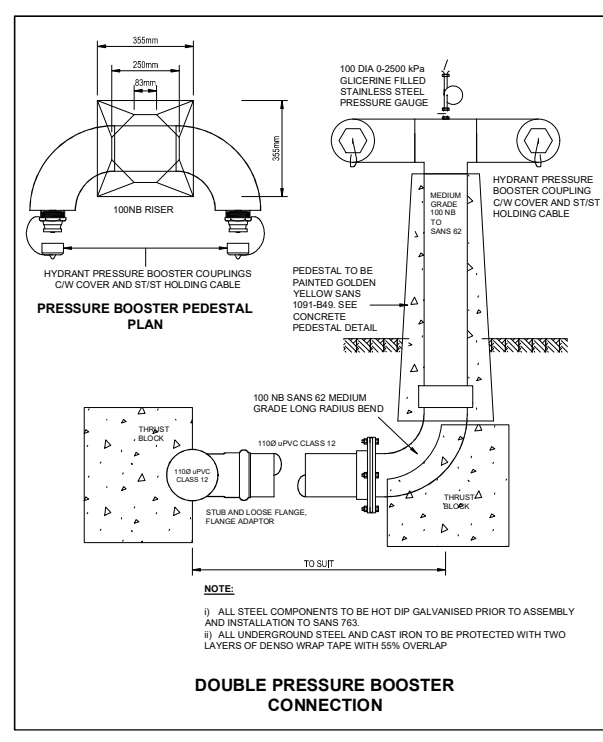
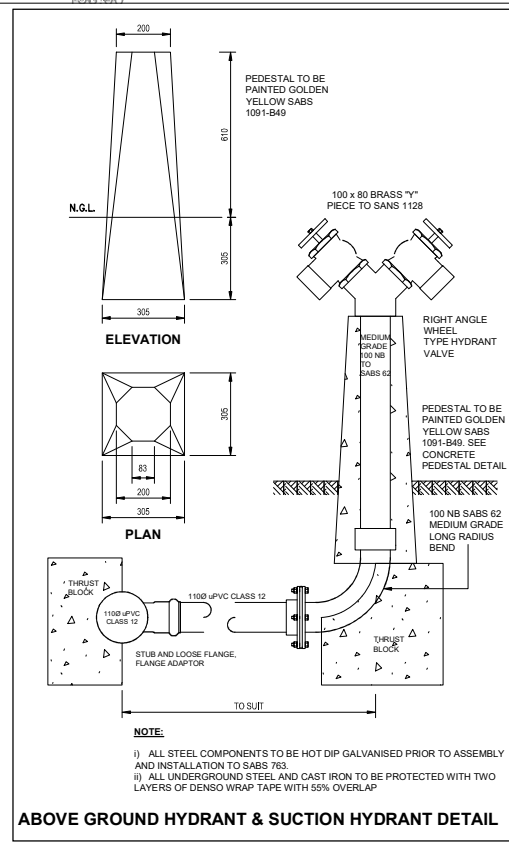
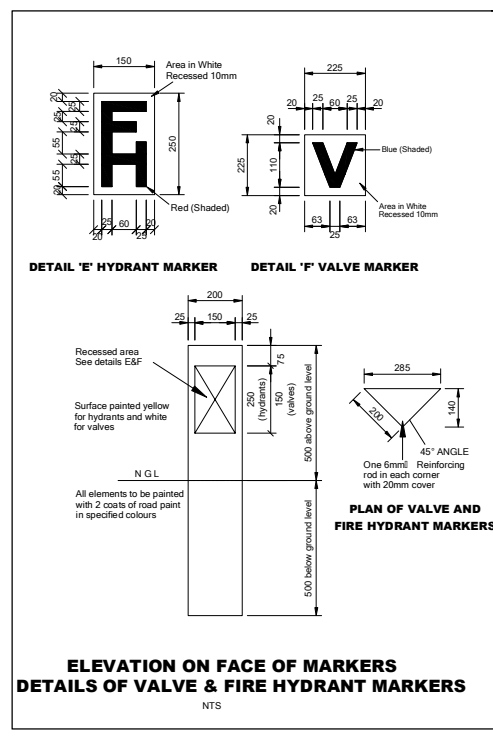
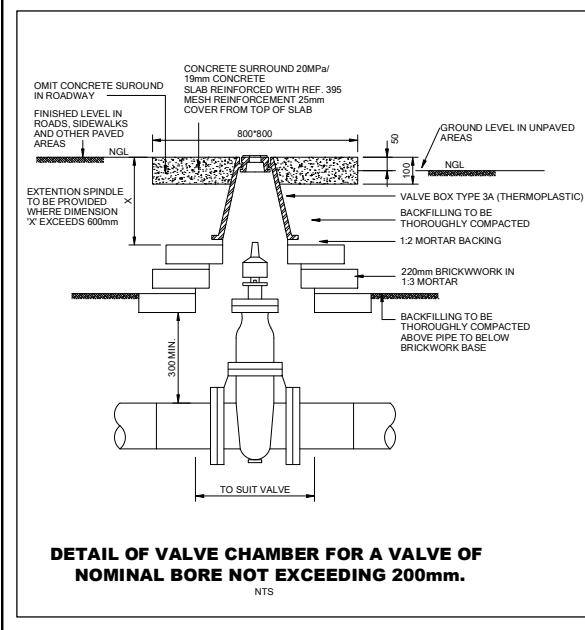
GROUND BEAM DETAIL
SCALE 1:10



BENCH MARK CO-ORDINATES (SYSTEM WGS 84 Lo = 27)				
12mm IRON PEG IN CONCRETE (BM1, BM2, BM4) 16mm ROUND IRON PEG (P100) 20mm ROUND IRON PEG (P100, P208, P209)				
Name	Y Cord	X Cord	Height	
BM1	-80323.78	3658910.66	30.24	
BM2	-80255.93	3658852.67	33.65	
BM3	-80196.17	3658907.67	33.03	
P107	-80255.61	3658834.82	33.66	
P106	-80318.85	3658913.24	30.79	
P209	-80196.04	3658912.52	28.25	
P208	-80132.69	3658934.10	31.72	

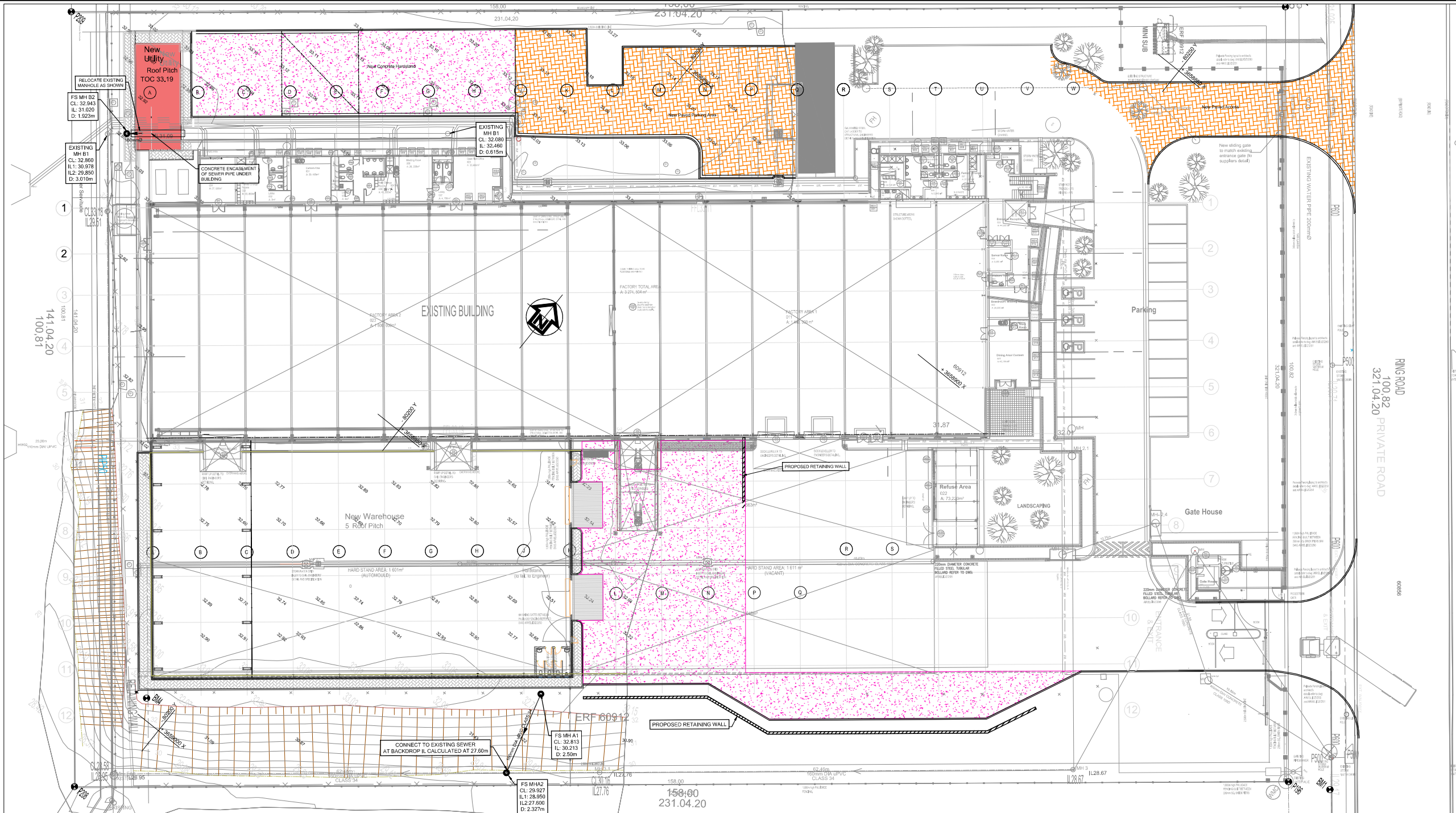
- NOTES:**
1. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THE RELEVANT SECTIONS OF SANS 1200 STANDARDISED SPECIFICATIONS FOR CIVIL ENGINEERING CONSTRUCTION.
 2. SPECIAL ATTENTION IS TO BE DRAWN TO CLAUSE SANS 1200-5.7, SAFETY.
 3. THE POSITIONS & LEVELS OF EXISTING SERVICES ARE APPROXIMATE AND ARE TO BE VERIFIED ON SITE BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF PROPOSED CONSTRUCTION.
 4. THE CONTRACTOR IS TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF PROPOSED CONSTRUCTION.
 5. A SITE INSPECTION IS TO BE ARRANGED WITH THE RELEVANT SERVICE PROVIDERS, POINTING OUT THE EXTENT OF THE WORKS, TO ENSURE THAT ALL SERVICES ARE ACCOUNTED FOR PRIOR TO THE COMMENCEMENT OF PROPOSED CONSTRUCTION.
 6. CONTRACTOR TO liaise WITH THE BUFFALO CITY MUNICIPALITY - W.R.T THE REINSTATEMENT OF ROAD SURFACING AND SIDEWALKS.
 7. WATER.
 - 7.1 ALL WATER DETAILS AND SPECIFICATIONS TO BE IN ACCORDANCE WITH SANS 1200.
 - 7.2 ALL WATER DETAILS AND SPECIFICATIONS TO BE IN ACCORDANCE WITH THE BUFFALO CITY MUNICIPALITY STANDARDS DETAILS WHERE APPLICABLE.
 - 7.3 ALL WATER MAINS ARE TO BE SET OUT FROM BUILDING FACE AS SHOWN ON THE LAYOUT DRAWING.
 - 7.4 COVER TO ALL WATER MAINS IN SIDEWALK & OPEN SPACES - MIN. 0.75m; MAX 1.25m - IN ROADWAY - MIN. 1.00m; MAX 1.25m.
 - 7.5 ALL WATER MAINS 75mm Ø AND OVER TO BE uPVC CLASS 9.
 - 7.6 ALL WATER MAINS 63mm Ø AND UNDER TO BE HDPE ISO SANS 4427, PE100, PN16.
 - 7.7 uPVC MAINS Laid UNDER CONTRACT TO END 2 METERS SHORT OF EXISTING WATER MAINS.
 - 7.8 HDPE MAINS TO BE LAID TO A MINIMUM OF 300mm PAST THE CONNECTION POINT TO THE EXISTING RETICULATION.
 - 7.9 VALVES AND HYDRANTS TO BE INSTALLED AS PER THE LAYOUT DRAWING.
 - 7.10 ALL VALVES TO BE ANTI-CLOCKWISE CLOSING CLASS 16, CI WEDGE TYPE GATE VALVE WITH NON-RISING SPINDLE.
 - 7.11 HYDRANTS TO HAVE A LONDON ROUND THREAD OUTLET WITH RISING SPINDLE, CLOSING CLOCKWISE AND A MAXIMUM OVERALL HYDRANT HEIGHT OF 330mm OR AS PER LOCAL MUNICIPAL SPECIFICATION.
 - 7.12 FIRE HYDRANT SPACING CONFORMS WITH SANS 900-1972 FOR MODERATE RISK CATEGORY.
 - 7.13 THRUST BLOCK DESIGN TO SANS 1200-L.
 - 7.14 ALL CAST IRON FITTINGS TO BE "RELIN" COATED.
 - 7.15 PRIOR TO CONNECTION TO THE EXISTING WATERMANS, A WATER TEST TO 1.5 TIMES WORKING PRESSURE IS TO BE PERFORMED BY THE CONTRACTOR WITH THE ENGINEER AND A REPRESENTATIVE OF THE IDZ.
 - 7.16 ALL WATER CONNECTION DETAILS ARE AS INDICATED ON THIS DRAWING.
 - 7.17 ALL WATER CONNECTION DETAILS ARE AS INDICATED ON THIS DRAWING.
 - 7.18 ALL WATER CONNECTION DETAILS ARE AS INDICATED ON THIS DRAWING.
 - 7.19 ALL WATER CONNECTION DETAILS ARE AS INDICATED ON THIS DRAWING.
 - 7.20 ALL SADDLES AND FLANGES TO BE SUPPLIED WITH STAINLESS STEEL BOLTS AND NUTS.

LEGEND :	
	BENCHMARK
	PROPOSED SPRINKLER WATER MAIN
	PROPOSED DOMESTIC WATER MAIN
	PROPOSED FIRE WATER MAIN
	EXISTING WATER MAIN
	PROPOSED WATER VALVE
	PROPOSED FIRE HYDRANT
	WATER PIPE BENDS
	PROPOSED RAISED DUAL BOOSTER CONNECTION
	PROPOSED NON RETURN VALVE
	PROPOSED REDUCER



- CHAMBER NOTES:**
- ALL SPECIALS AND FITTINGS IN CHAMBERS SHALL BE WRAPPED IN DENSO TAPE AFTER APPLYING A LAYER OF DENSO PASTE IN ORDER TO FILL ALL VOIDS.
 - ALL FLANGES SHALL BE DRILLED TO SANS 1123 FLANGES TABLE 1600/5 FOR STEEL AND 18 FOR CAST IRON.
 - GASKETS SHALL BE 3mm RUBBER INSERTION GASKET FOR POTABLE WATER AND COVER THE FULL FACE OF THE FLANGE.
 - STAINLESS STEEL BOLTS, NUTS AND WASHERS SHALL BE USED IN VALVE CHAMBERS.
 - CONCRETE: CONCRETE APRON 25MPa / 19mm STONE.
 - CHAMBER CONCRETE BASES 25MPa / 19mm STONE.
 - THRUST / ANCHOR BLOCKS 25MPa / 19mm STONE.
 - WALLS 25MPa / 19mm STONE.

FOR TENDER ONLY			
A	ISSUED FOR TENDER	2020-06-28	
NO.	DESCRIPTION / REVISIONS	DATE	
ENGINEERS • PROJECT MANAGERS • ENVIRONMENTAL MANAGERS			
ILISO House 102 Park Drive, St George's Park P.O. Box 5888, Worcester 9505 E-mail: info@iliso.com			
Tel: 041-582 3006 Fax: 041-582 3007 www.iliso.com			
COMPUTER FILE NAME: 1900321-CIV-0001A, 2020-07-07-0912.mxd			
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DESIGNED BY	Z L MTSHATSHA		
REVIEWED BY	G P JOUBERT		
DRAWN BY	Z L MTSHATSHA		
VERIFIED BY	G P JOUBERT		
QUALITY VALIDATION	A J WHITE		
NAKO ILISO	PR GR NUMBER: 1900321		
APPROVED BY			
NBIB			
SMITHSPLASTICS / AUTOMOULD			
TITLE			
PROPOSED DOMESTIC WATER, FIRE WATER & SPRINKLER WATER LAYOUT			
PAPER SIZE	PROJECT NO.	DWG. NO.	REV.
A0	1900321-CIV-0001	A	



- NOTES:**
1. ALL CONSTRUCTION IS IN ACCORDANCE WITH THE RELEVANT SECTIONS OF SANS 1200, STANDARDISED SPECIFICATIONS FOR CIVIL ENGINEERING CONSTRUCTION.
 2. SPECIAL ATTENTION IS DRAWN TO CLAUSE SANS 1200-A - 5.7, SAFETY.
 3. THE POSITIONS OF EXISTING SERVICES ARE APPROXIMATE AND ARE TO BE VERIFIED ON SITE BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION. A SITE INSPECTION IS TO BE ARRANGED WITH THE RELEVANT SERVICE PROVIDERS, POINTING OUT THE EXTENT OF THE WORKS, TO ENSURE THAT ALL SERVICES ARE ACCOUNTED FOR.
 4. THE CONTRACTOR IS TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF PROPOSED CONSTRUCTION.
 5. A SITE INSPECTION IS TO BE ARRANGED WITH THE RELEVANT SERVICE PROVIDERS, POINTING OUT THE EXTENT OF THE WORKS, TO ENSURE THAT ALL SERVICES ARE ACCOUNTED FOR PRIOR TO THE COMMENCEMENT OF PROPOSED CONSTRUCTION.
 6. SETTING OUT CO-ORDINATES ARE PROVIDED FOR CROSS CHECKING PURPOSES. ALL WORKS ARE TO BE SET OUT FROM THE BUILDING FOOTPRINT. ENSURE ALL SETTING OUT LINES ARE DOUBLE CHECKED BY CONTRACTORS SURVEYOR.
- 7. SEWER**
- 7.1 ALL SEWER LINES AND MANHOLES ARE LOCATED AS SHOWN.
 - 7.2 ALL PIPES ARE 160mm Ø PVC CLASS 34-400KPa FLEXIBLE PIPE BEDDING.
 - 7.3 ALL PIPES TO BE FITTED WITH FLEXIBLE JOINTS.
 - 7.4 RISING EYES & MANHOLES, PLACED IN ROAD CARRIAGEWAYS AND PARKING AREAS TO HAVE HEAVY DUTY COVERS.
 - 7.5 FINISHED COVER LEVELS:
CARRIAGEWAYS - COVER TO BE FLUSH WITH FINISHED ROAD SURFACE. MIDBLOCK - COVER TO BE 100mm ABOVE FINISHED GROUND LEVEL.
 - 7.6 CONNECTIONS INTO EXISTING MANHOLES TO BE MADE ONLY AFTER ENGINEERS APPROVAL.
 - 7.7 ALL PRECAST MANHOLE COMPONENT TO CONTAIN DOLOMITIC AGGREGATE ONLY.

LEGEND :

- BENCHMARK
- PROPOSED SEWER LINE
- PROPOSED SEWER MANHOLE
- EXISTING SEWER LINE
- EXISTING SEWER MANHOLE
- EXISTING STORMWATER

BENCHMARK CO-ORDINATES
(SYSTEM WGS 84 Lo = 27)

12mm IRON PEG IN CONCRETE (BM1, BM2, BM4)
16mm ROUND IRON PEG (P196)
20mm ROUND IRON PEG (P17, P208, P209)

Name	Y Cord	X Cord	Height
BM1	-80323.78	3658910.86	30.24
BM2	-80255.63	3658832.67	33.55
BM3	-80196.17	3658997.67	33.03
P17	-80255.61	3658834.82	33.56
P196	-80318.95	3658913.24	30.79
P208	-80196.04	3659012.52	28.26
P209	-80132.69	3658934.10	31.72

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NAKO ILISO

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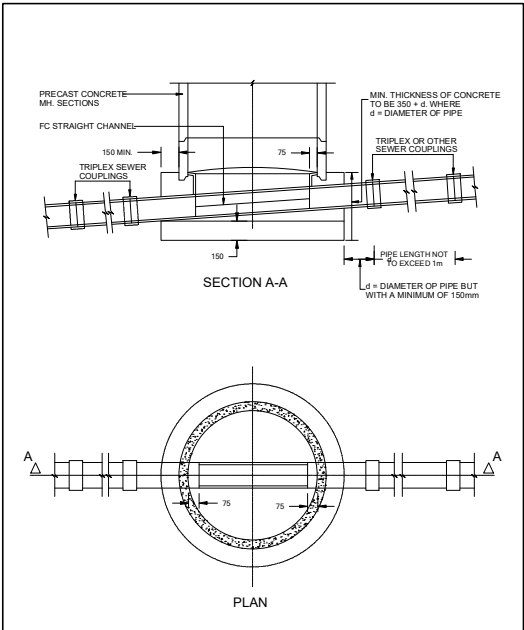
COMPUTER FILE NAME: 1900321-CIV-0002-REV 01-07-2020

DATE	INITIALS AND SURNAME	SCALE	SIGNATURE AND DATE
DESIGNED BY	Z L MTSHATSHA	1 IN 200	
REVIEWED BY	G P JOUBERT		
DRAWN BY	Z L MTSHATSHA		
VERIFIED BY	G P JOUBERT		
QUALITY VALIDATION	A J WHITE		
NAKO ILISO	PR REG NUMBER: 1900321		
APPROVED BY			
NBIB			

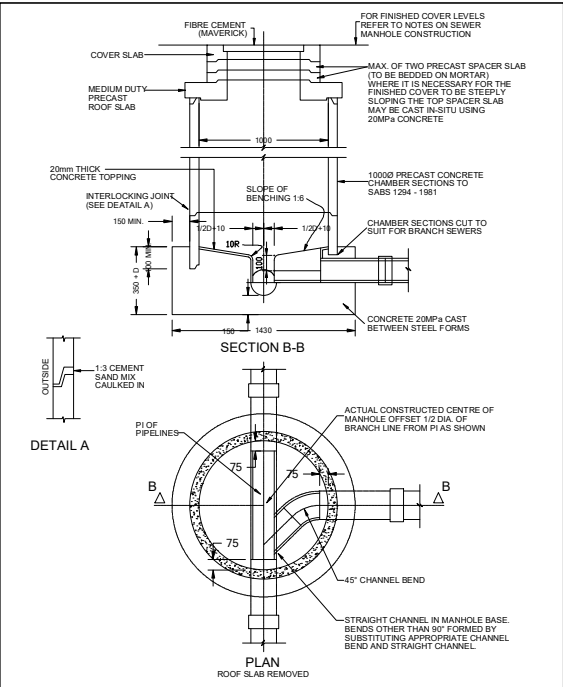
SMITHSPLASTICS / AUTOMOULD

PROPOSED FOUL SEWER LAYOUT

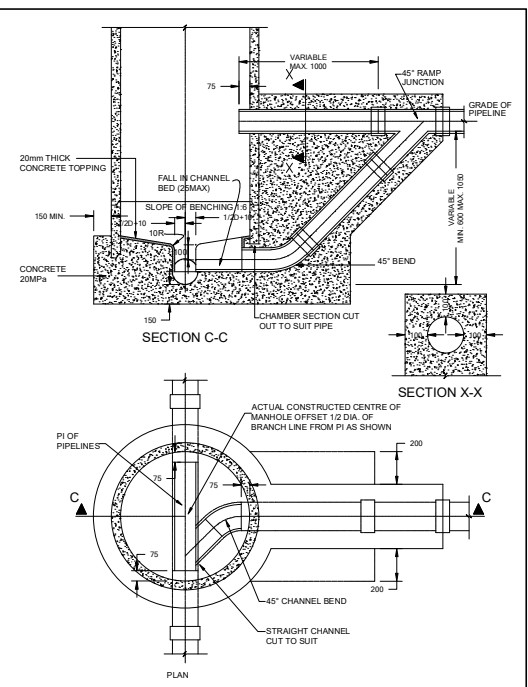
PAPER SIZE	PROJECT NO.	DRWG. NO.	REV.
A0	1900321-CIV-0002		A



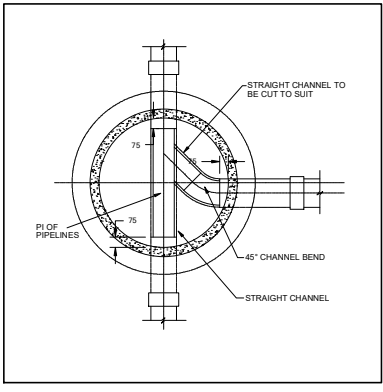
DETAIL OF FLEXIBLE CONNECTION TO PRECAST CONCRETE MANHOLES



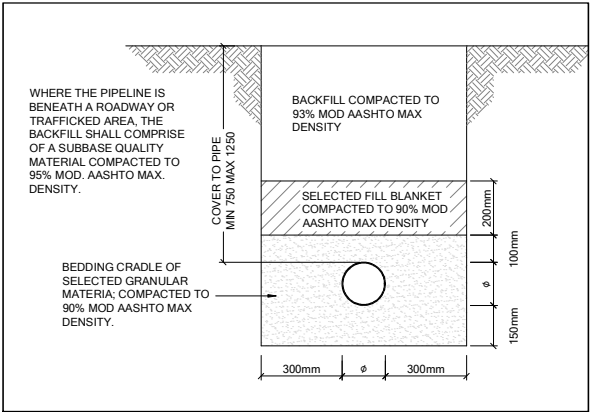
TYPICAL SEWER MANHOLE DETAIL USED IN MIDBLOCK AND ON SIDEWALKS, PRECAST CONCRETE CHAMBER SECTIONS FOR PIPES UP TO 300mmØ



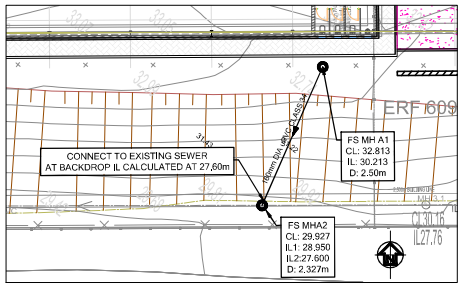
TYPICAL DETAIL OF RAMP JUNCTION MANHOLE PRECAST CONCRETE CHAMBER SECTIONS FOR PIPES UP TO 300mmØ



SEWER MANHOLE BRANCH MANHOLE FOR PIPES UP TO 300mmØ

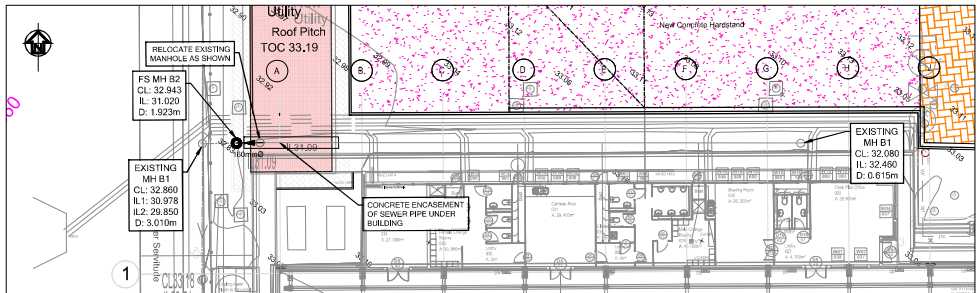


TYPICAL CLASS B FLEXIBLE PIPE BEDDING DETAIL



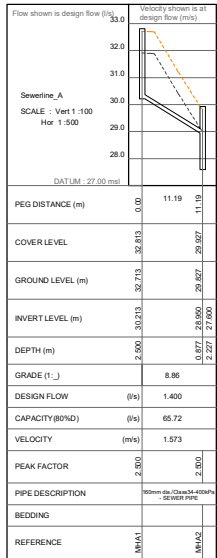
SEWER LINE-A LAYOUT PLAN

SCALE 1 : 200



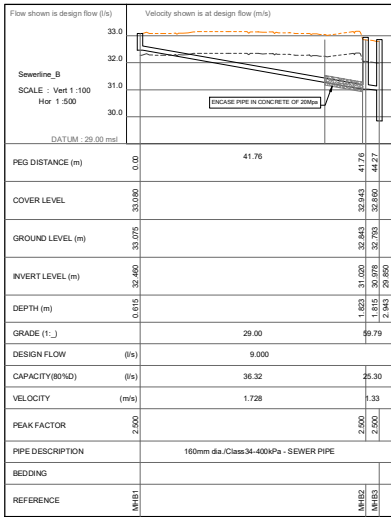
SEWER LINE-B LAYOUT PLAN

SCALE 1 : 200



Pipe lengths (m)				
Reference		Horiz.	Slope	
MH A1	-	MH A2	11.188	11.259

Pipe design data				
Reference	Y	X	IL in / out	DEPTH in / out
MH A1	-80235.873	3658865.158	30.213	30.213
MH A2	-80238.782	3658875.961	28.950	27.600



Pipe lengths (m)				
Reference		Horiz.	Slope	
MH B1	-	MH B2	41.759	41.784
MH B2	-	MH B3	2.511	2.511

Pipe design data				
Reference	Y	X	IL in / out	DEPTH in / out
MH B1	-80180.843	3658915.862	32.460	0.815
MH B2	-80148.243	3658941.561	31.020	1.823
MH B3	-80146.313	3658943.566	30.978	1.815

NOTES:
1. REFER TO DRAWING NUMBER 1900321-CIV-0002.

LEGEND :	
	BENCHMARK
	PROPOSED SEWER LINE
	PROPOSED SEWER MANHOLE
	EXISTING SEWER LINE
	EXISTING SEWER MANHOLE
	NATURAL GROUND LINE
	SEWER LINE AND MANHOLE

BENCHMARK CO-ORDINATES (SYSTEM WGS 84 Lo = 27)			
12mm IRON PEG IN CONCRETE (BM1, BM2, BM4)			
16mm ROUND IRON PEG (P196)			
20mm ROUND IRON PEG (P17, P208, P209)			
Name	Y Cord	X Cord	Height
BM1	-80323.78	3658910.66	30.24
BM2	-80255.63	3658832.67	33.55
BM3	-80196.17	3658997.67	33.03
P17	-80255.61	3658834.62	33.56
P196	-80318.95	3658913.24	30.79
P208	-80196.04	3659012.52	28.26
P209	-80132.69	3658934.10	31.72

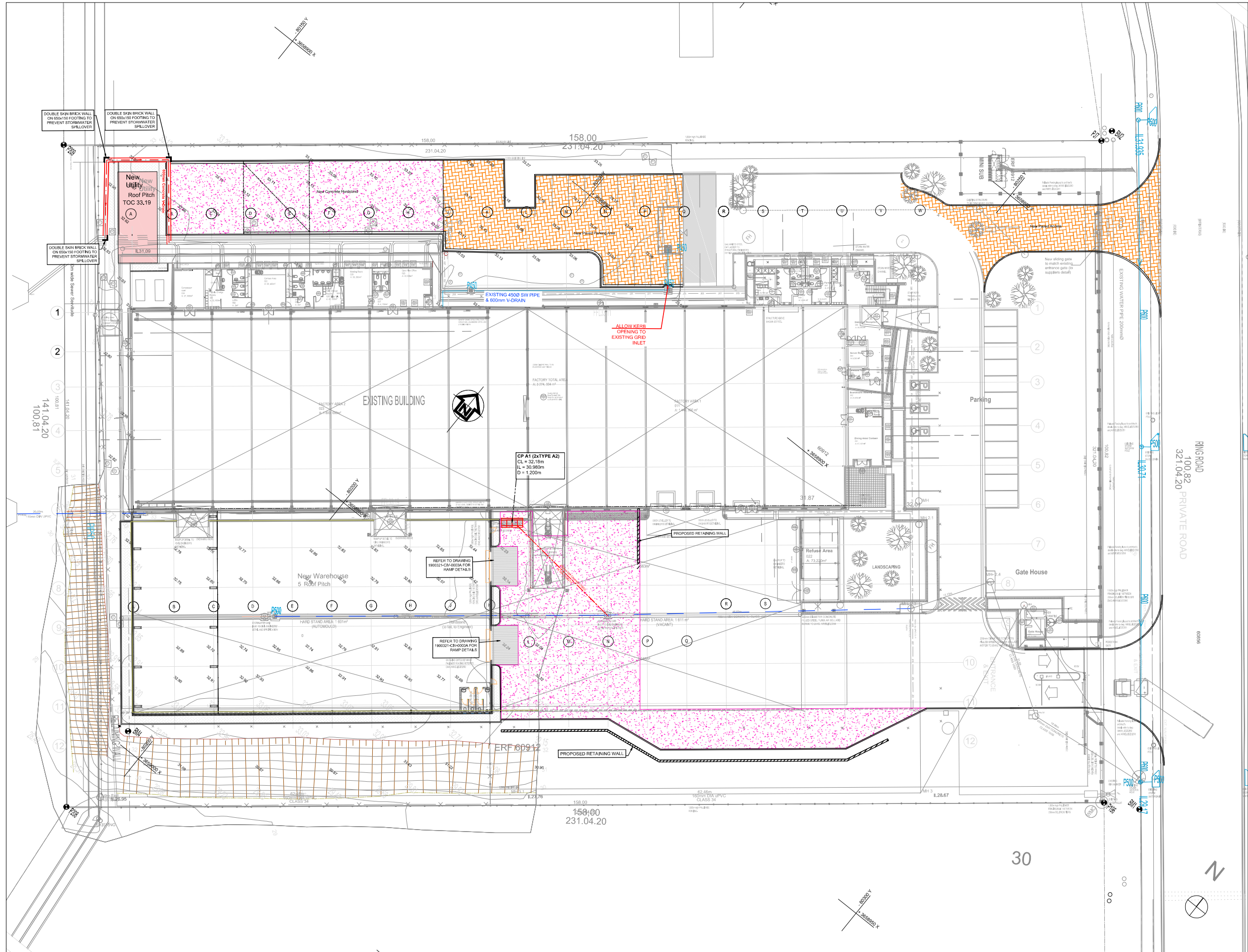
FOR TENDER ONLY

A	ISSUED FOR TENDER	2020-06-28
No.	DESCRIPTION / REVISIONS	DATE
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COMPUTER FILE NAME: 1900321-0002-PEVA_2020-05-07-0012.dwg			
DATE	Jul 2020	SCALE	AS SHOWN
INITIALS AND SURNAME	SIGNATURE AND DATE		
DESIGNED BY	Z L MTSHATSHA		
REVIEWED BY	G P JOUBERT		
DRAWN BY	Z L MTSHATSHA		
VERIFIED BY	G P JOUBERT		
QUALITY VALIDATION	A J WHITE		
NAKO ILISO	PR REG NUMBER: 1900321		
APPROVED BY			
NBIB			

SMITHSPLASTICS / AUTOMOULD

TITLE			
SEWER LONG SECTIONS LINES A & B			
PAPER SIZE	PROJECT NO.	DRWG. NO.	REV.
A0	1900321-CIV-0002A		A



- NOTES:**
1. ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THE RELEVANT SECTIONS OF SANS 1200, STANDARDISED SPECIFICATIONS FOR CIVIL ENGINEERING CONSTRUCTION.
 2. SPECIAL ATTENTION IS TO BE DRAWN TO CLAUSE SANS 1200 - 5.7, SAFETY.
 3. THE POSITIONS & LEVELS OF EXISTING SERVICES ARE APPROXIMATE AND ARE TO BE VERIFIED ON SITE BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF PROPOSED CONSTRUCTION.
 4. THE CONTRACTOR IS TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF PROPOSED CONSTRUCTION.
 5. A SITE INSPECTION IS TO BE ARRANGED WITH THE RELEVANT SERVICE PROVIDERS, POINTING OUT THE EXTENT OF THE WORKS, TO ENSURE THAT ALL SERVICES ARE ACCOUNTED FOR PRIOR TO COMMENCEMENT OF PROPOSED CONSTRUCTION.
 6. CONTRACTOR TO LIAISE WITH THE BUFFALO CITY MUNICIPALITY - W.R.T THE REINSTATEMENT OF ROAD SURFACING AND SIDEWALKS.
 7. **STORMWATER**
 - 7.1 ALL STORMWATER DETAILS AND SPECIFICATIONS TO BE IN ACCORDANCE WITH SANS 1200E.
 - 7.2 ALL STORMWATER PIPES TO BE LAD IN CLASS B BEDDING AS INDICATED.
 - 7.3 STORMWATER PIPES CROSSING ROADS TO BE CLASS 1000. ALL OTHER STORMWATER PIPES TO BE CLASS 500.
 - 7.4 STORMWATER CHANNELS AND CONCRETE CHANNELS: CONSTRUCTION JOINTS ARE TO BE PROVIDED AT 3m CENTRES. EXPANSION JOINTS ARE TO BE PROVIDED AT 1m CENTRES.

LEGEND :

	BENCHMARK
	PROPOSED STORMWATER MAIN
	EXISTING STORMWATER MAIN
	PROPOSED 600mm CONCRETE V-DRAIN

BENCHMARK CO-ORDINATES
(SYSTEM WGS 84 Lo = 27)

12mm IRON PEG IN CONCRETE (BM1, BM2, BM4)			
16mm ROUND IRON PEG (P196)			
20mm ROUND IRON PEG (P17, P208, P209)			
Name	Y Cord	X Cord	Height
BM1	-80323.78	3658910.86	30.24
BM2	-80255.93	3658832.67	33.65
BM3	-80196.17	3658997.67	33.03
P17	-80255.61	3658834.82	33.66
P196	-80318.95	3658913.24	30.79
P208	-80196.04	3659012.52	28.26
P209	-80132.69	3658934.10	31.72

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A	ISSUED FOR TENDER	2020-05-29
No.	DESCRIPTION / REVISIONS	DATE

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COMPUTER FILE NAME: 1900321-CIV-0003-2020-05-29 - 0011.dwg

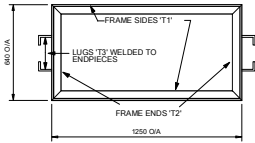
DATE	JUL 2020	SCALE	1 IN 200
DESIGNED BY	Z.L. MTSHATSHA	INITIALS AND SURNAME	SIGNATURE AND DATE
REVIEWED BY	G.P. JOUBERT		
DRAWN BY	Z.L. MTSHATSHA		
VERIFIED BY	G.P. JOUBERT		
QUALITY VALIDATION	A. J. WHITE		
APPROVED BY	NAKO ILISO	PR REG NUMBER	26432
NMBM			

SMITHSPLASTICS / AUTOMOULD

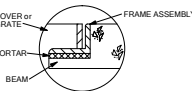
PROPOSED STORMWATER LAYOUT

PAPER SIZE	PROJECT NO.	DWG. NO.	REV.
A0	1900321-CIV-0003	A	

STEEL SCHEDULE				
REF. MARK	DIA. OR SECTION (mm)	NO. REQD.	LENGTH O/A (mm)	BENDING/CUTTING and LOCATION
T1	60x6x8 ANGLE	2	1250	1250 FRAMESIDE
T2	60x6x8 ANGLE	2	640	640 FRAME END
T3	R10	4	125	75 50

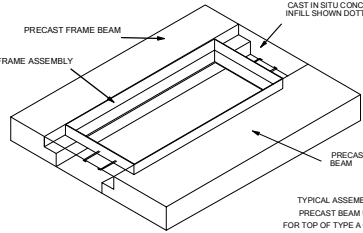


DETAIL OF FRAME ASSEMBLY



NOTES:

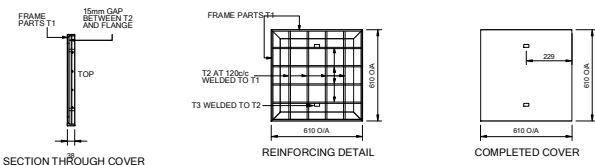
1. TOLERANCE ON CUTTING DIMENSIONS OF STEELWORK IS 2mm.
2. FRAME ASSEMBLY TO BE HEAVY DUTY, HOT DIPPED GALVANISED AFTER MANUFACTURE.
3. WELDED FRAME ASSEMBLY TO BE FLAT WITH NO WARPS OR TWISTS.
4. ALL BEAMS TO BE BEDDED ON MORTAR OVER FULL AREA OF CONTACT WITH SUPPORT KERBS AND BRICKWORK AND/OR SLABS.



TYPICAL ASSEMBLY OF PRECAST BEAM UNITS FOR TOP OF TYPE A CATCHPIPS

STEEL FRAME ASSEMBLY AND INSTALLATION OF PRECAST BEAMS TO TOP OF CATCHPIPS

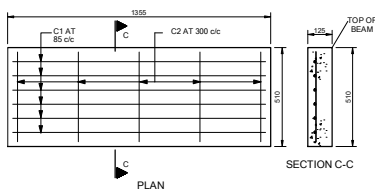
NTS



LOCATION	REF. MARK	DIA. OR SECTION (mm)	LENGTH O/A (mm)	NO. REQD.	BENDING/CUTTING
SUBSOIL MANHOLE FRAME	S1	60x6x8 ANGLE	640	4	OVERALL DIMENSIONS CRITICAL
	S2 OR T2	R10	125	4	WELDED TO S1 AND FULLY UP VERTICAL FLANGE
MILD STEEL GRATE	G1	50x10 FLAT	810	4	STRAIGHT: 45° MITRED ENDS
	G2	50x10 FLAT	VARIABLE BETWEEN 810 & 775	2 EACH	CONC. REINFORCEMENT OF 100mm TO 125mm LONG
PRECAST CONCRETE COVER	T1	50x5x6x3 ANGLE	610	4	OVERALL DIMENSIONS CRITICAL
	T2	R6	600	8	STRAIGHT
	T3	50x30 OD TUBE	50	2	

STEELWORK FOR COVERS

NTS

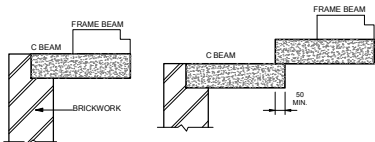


REF. MARK	DIA. OF BAR	LENGTH O/A (mm)	NO. REQD.	BENDING/CUTTING
C.1	R16	1295	6	STRAIGHT
C.2	R8	450	5	STRAIGHT

STEEL SCHEDULE

NOTE:

1. MAIN REINFORCING TO BE LOCATED AT THE BOTTOM OF BEAM (30mm COVER)



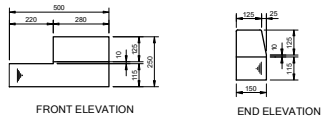
TYPICAL LAYOUTS FOR POSITIONING OF C BEAMS

PIPE DIA. (mm)	INTERNAL WIDTH OF BRICK STRUCTURE = Y (mm)	NUMBER OF C BEAMS PER STRUCTURE TYPE	A1	A2	B & C	D
50-600	900	1	3	1	3	
675-825	1150	2	5	2	4	
900-1050	1350	2	5	2	4	

INTERNAL WIDTHS AND NUMBER OF C BEAMS FOR VARIOUS PIPE DIAMETERS

DETAIL OF PRECAST SUPPORT BEAM C AND Y DIMENSIONS

NTS



FRONT ELEVATION

END ELEVATION



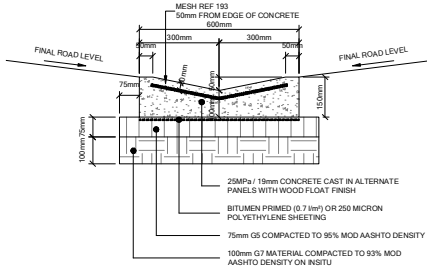
PLAN

TYPE 1 - PRECAST SUPPORT KERB

NTS

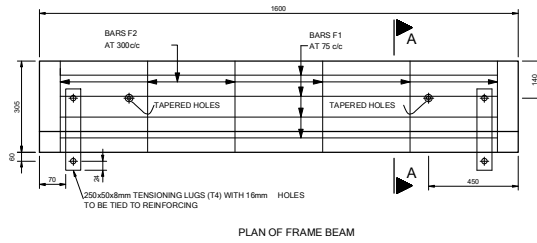
NOTE:

1. CHANNEL TO BE CAST IN ALTERNATIVE SECTIONS OF LENGTHS NOT EXCEEDING 3.0m. EXPANSION JOINTS TO BE PLACED EVERY 3.0m.

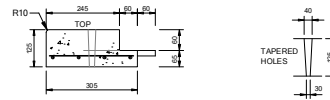


TYPICAL SECTION THROUGH TYPE A CAST IN-SITU CONCRETE CHANNEL

SCALE: 1:10



PLAN OF FRAME BEAM



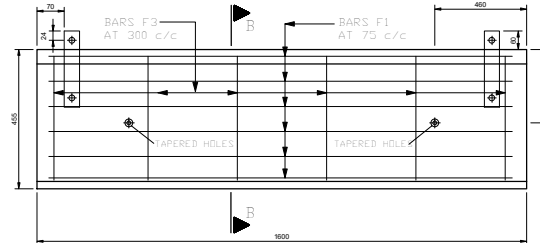
SECTION A-A

REF. MARK	DIA	LENG O/A (mm)	NO. LOC	BENDING/CUTTING	LOCATION
T4	50x8	250	2	2	FRAME CANTILEVER
F1	Y12	1540	4	6	FRAME STRAIGHT CANTILEVER STRAIGHT
F2	R8	245	6		FRAME STRAIGHT
F3	R8	400	6		CANTILEVER STRAIGHT

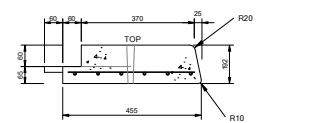
STEEL SCHEDULE

STORMWATER STRUCTURE DETAIL OF PRECAST CANTILEVER AND FRAME BEAMS

NTS



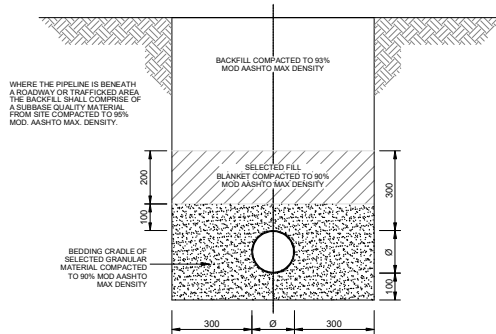
PLAN OF CANTILEVER BEAM



SECTION B-B

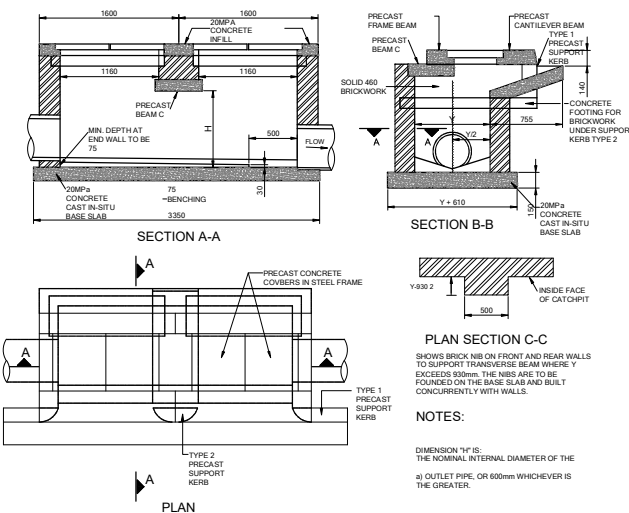
NOTE:

1. CONCRETE TO BE OF MINIMUM STRENGTH 25MPa
2. COVER TO BOTTOM OF MAIN STEEL 25mm
3. MILD STEEL FRAME TO BE FITTED AFTER BEAMS ARE IN POSITION
4. TENSIONING LUGS TO BE HOT DIPPED GALVANISED TO SABS 763 (1988).



TYPICAL PIPE BEDDING DETAILS FOR CLASS B BED

NTS



SECTION A-A

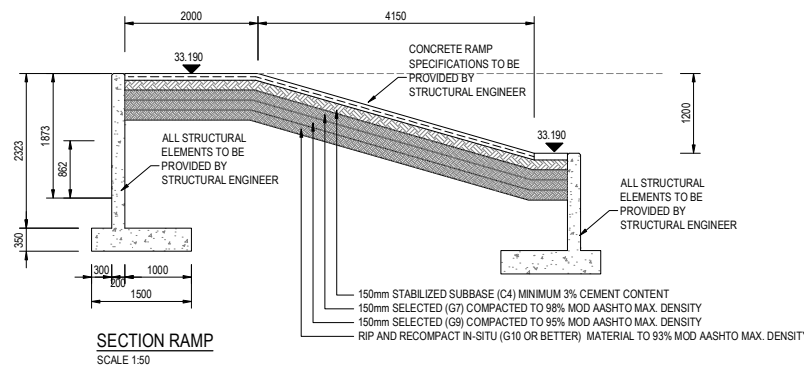
SECTION B-B

PLAN SECTION C-C

1. SHOWS BRICK NB ON FRONT AND REAR WALLS TO SUPPORT TRANSVERSE BEAM WHERE Y EXCEEDS 500mm. THE NB'S ARE TO BE FOUND ON THE BASE SLAB AND BUILT CONCURRENTLY WITH WALLS.

NOTES:

1. DIMENSION 'Y' IS: THE NOMINAL INTERNAL DIAMETER OF THE 16 OUTLET PIPE, OR 600mm WHICHEVER IS THE GREATER.



SECTION RAMP SCALE 1:50

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A	ISSUED FOR TENDER	2020-06-29
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No.	DESCRIPTION / REVISIONS	DATE
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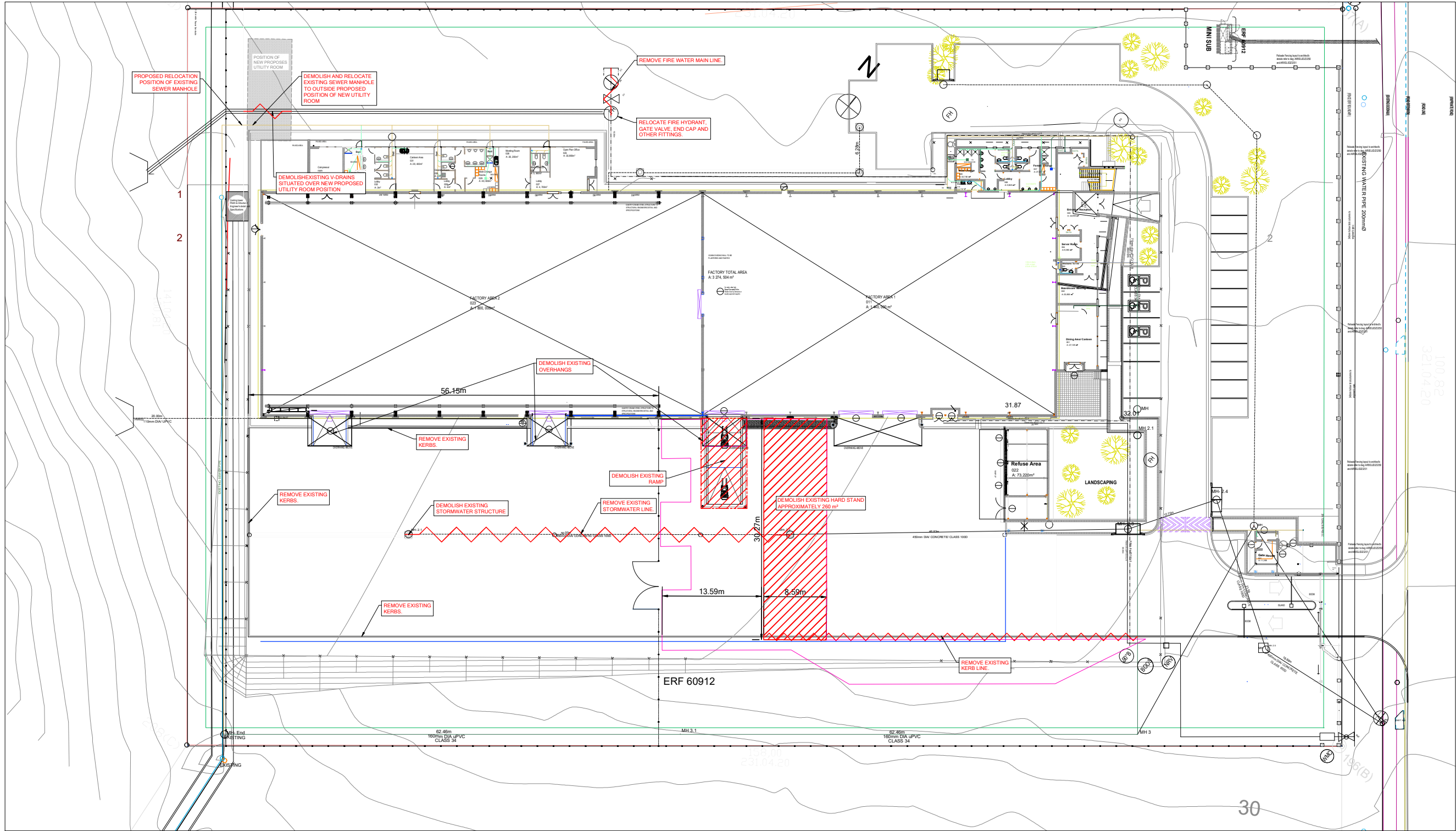
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DATE	INITIALS AND SURNAME	SIGNATURE AND DATE
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DESIGNED BY	Z.L. MTSHATSHA	
REVIEWED BY	G.P. JOUBERT	
DRAWN BY	Z.L. MTSHATSHA	
VERIFIED BY	G.P. JOUBERT	
QUALITY VALIDATION	A.J. WHITE	
NAKO ILISO	PR REG NUMBER: 196452	
APPROVED BY		
NBSM		

SMITHSPLASTICS / AUTOMOULD

STORMWATER DETAILS

PAPER SIZE	PROJECT NO.	DRWG. NO.	REV.
A0	1900321-CIV-0003A		A



DEMOLITION LAYOUT PLAN
SCALE 1 : 200

- NOTES:**
- ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THE RELEVANT SECTIONS OF SANS 1200, STANDARDISED SPECIFICATIONS FOR CIVIL ENGINEERING CONSTRUCTION.
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 - THE POSITIONS & LEVELS OF EXISTING SERVICES ARE APPROXIMATE AND ARE TO BE VERIFIED ON SITE BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF PROPOSED CONSTRUCTION.
 - THE CONTRACTOR IS TO NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF PROPOSED CONSTRUCTION.
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 - CONTRACTOR TO LIAISE WITH THE BUFFALO CITY MUNICIPALITY - WAT AT THE REINSTATEMENT OF ROAD SURFACING AND SIDEWALKS.

FOR TENDER ONLY

ISSUED FOR TENDER 2020-06-20

No. DESCRIPTION / REVISIONS DATE

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COMPUTER FILE NAME: 1900321-CIV-0000-01-0011.dwg

DATE: Aug 2020 SCALE: 1 IN 100

INITIALS AND SURNAME SIGNATURE AND DATE

DESIGNED BY: E HAYDAM

REVIEWED BY: G P JOUBERT

DRAWN BY: E HAYDAM

VERIFIED BY: G P JOUBERT

QUALITY VALIDATION: A J WHITE

PR REG NUMBER: 950432

APPROVED BY: NAKO ILISO

NMBM

SMITHSPLASTICS / AUTOMOULD

TITLE

DEMOLITION PLAN

PAPER SIZE PROJECT NO. DRWG. NO. REV.

A0 1900321-CIV-0000 A