REPLACEMENT OF CIVIC CENTRE ROOF: GREATER TZANEEN CIVIC CENTRE

TENDER NO: SCMU 06/2021
CIDB Class Grading of 5GB OR HIGHER

BIDDER:

CONTACT PERSON:

CONTACT NUMBERS:TEL: **FAX**

EMAIL ADDRESS:

TENDER SUM (In figure):

TENDER SUM (In words):

CSD NUMBER:

CRS NUMBER:

CLOSING DATE AND TIME: **14 May 2021 AT 12h00**

CLIENT:
The Municipal Manager
Greater Tzaneen Municipality
P.O Box 24, Tzaneen, 0850
Tel: (015) 307 8000
Fax: (015) 307 8049

PREPARED BY:
Buildcost Quantity Surveyors
21B21B Peace Street
Tzaneen, 0850
Tel: (015) 307-6318

EXPANDED PUBLIC WORKS PROGRAMME
CONTRIBUTING TO A NATION AT WORK

mig | Municipal Infrastructure Grant

CONTENTS

TENDER DOCUMENT CHECKLIST

Tenderers must complete this document checklist to ensure that all information is completed in the Tender Document.

Page	Ref	Description	Included
		All pages requiring signatures signed by the Tenderer	
	MBD1	**Correct Tender Offer Amount carried forward to Form (MBD1)**	
	C1.1	**Form of Offer and Acceptance**	
	C1.2	**Contract Data: Part 2 – Data provided by Contractor**	
	C2.2	**Bill of Quantities**	
		Sign and date Final Summary	
		Completed in BLACK INK only	
		Corrections crossed out and initialled	
	T2.1	**All Returnable Documents and Schedules submitted**	
	1A	Joint Venture Disclosure Form.	
	1B	Compulsory Enterprise Questionnaire.	
	1C	Record of Addenda to Tender Documents.	
	1D	Proposed Amendments and Qualifications.	
	1E	Schedule of Subcontractors.	
	1F	Schedule of Plant and Equipment.	
	1G	Organogram and Curriculum Vitae of Key Personnel	
	1H	Project Programme and Method Statement	
	1I	Schedule of Estimated Monthly Expenditure	
	1J	Rates for Special Materials	
	1K	Schedule of the Tenderer's Experience (work undertaken not for Greater Tzaneen Municipality).	
	1L	Schedule of work undertaken for Greater Tzaneen Municipality.	
	2A	Certificate of Tenderer's visit to the site.	
	2B	Certificate of Authority for Signatory.	
	2C	Alterations by Tenderer.	
	2D	Contractor's Establishment on Site	

Page	Ref	Description	Included
	2E	Certificate of Non-Collusive Tender	
	2F	Schedule of Local Labour Contents	
	2G	Broad Based Black Economic Empowerment	
	2H	Surety and Bank Details	
	2I	Declaration of Interest (MBD4)	
	2J	Declaration for Procurement above R10 Million (All applicable taxes included) (MBD5)	
	2K	Preference Points Claim Form in Terms of the Preferential Procurement Regulations 2017 (MBD6.1)	
	2L	Declaration Certificate for Local Production and Content (MBD6.2)	
	2M	Contract Form – Rendering Services (MBD7.2)	
	2N	Declaration of Bidder's Past Supply Chain Management Practices (MBD8)	
	2O	Certificate of Independent Bid Determination (MBD9)	

Signed ---------- Date ----------

Name ---------- Position ----------

Tenderer ----------

T1 TENDERING PROCEDURES

T1.1 TENDER NOTICE AND INVITATION TO TENDER

MBD 1

TENDER ADVERT

BID DESCRIPTION: REPLACEMENT OF CIVIC CENTRE ROOFING

BID NO: SCMU 06/2021

Bids are hereby invited from interested service provider with CIDB grading of 5GB or higher for replacement of Civic Centre roofing. No bid document will be sold at the municipality. Bid documents are obtainable on Greater Tzaneen Municipality website: www.greatertzaneen.gov.za.

It is estimated that tenderer must have a CIDB contractor grading designation of 5GB or higher

Interested bidders must attach proof of the following documents to avoid disqualification:

CSD report (not older than 3 months), certified copies of ID's for all directors of the company, statement of municipal rates and taxes for both company and directors appearing in the CK (not older than 3 months)/ letter from traditional authority not older than 3 months for the company and the directors/ lease agreement (attach 3 months proof of payment for lease), valid tax pin or tax clearance, certified or original B-BBEE certificate (combined BBBEE certificate if Joint Venture), signed joint venture agreements in case of a joint venture companies, proof of relevant CIDB grading.

Bidders must sanitise/ wear gloves when preparing their bid document. Completed bid documents with attachments (supporting documents) must be wrapped in a sealed envelope and be deposited into Greater Tzaneen Municipality bid box, Civic Centre, Agatha Street, marked as Bid No: **SCMU 06/2021, postal address and contact details of the bidder.**

Bid document will be available only on www.greatertzaneen.gov.za **on the date of advert.**
Compulsory briefing session will be held on the 5 May 2021 at 10H00 @ Old Fire Station, Greater Tzanen Municipality, Civic Centre. Closing date: 14 May 2021 @ 12:00 at Greater Tzaneen Municipality; Civic Centre; Council Chamber. Public bid opening will be held on the closing date at 12h00, Council Chambers.

EVALUATION OF BIDS

N.B: The evaluation of the bid will be conducted in two stages, First stage will be the assessment on functionality as follows: Relevant company experience - 50 points; experience of key personnel experience – 20 points; Plant and Equipment – 30 points. Only bidders that obtain 70 points will be subjected to 80/20 Preference point scoring system, where 80 points will be allocated for price only and 20 points will be allocated based on the Broad Based Black Economic Empowerment (B-BBEE) status level of contributors.

BIDDERS SHALL TAKE NOTE OF THE FOLLOWING BID CONDITION

- Greater Tzaneen Municipality Supply Chain Management Policy will apply;
- Broad Based Black Economic Empowerment (B-BBEE) Act will apply;
- Greater Tzaneen Municipality does not bind itself to accept the lowest or any bid and reserves the right to accept the whole or part of the bid;
- Council reserves the right to negotiate further conditions and requirements with the successful Bidder;
- Council reserves the right not to appoint;
- No bidder will be appointed if they are not registered in Central Supplier Database,
- Contract period: 6 months.
- Council have the right to appoint more than one bidder;
- Bids which are late, incomplete, unsigned, faxed or emailed will not be accepted.

Technical enquiries should be directed to Ms. S. Mathebula @ 015 307 8213/072 137 2122
Administrative enquiries must be directed to Ms. M. Mpyana @ 015 307 8251 / 082 924 7704

_____
Mr. B.S. Matlala
Municipal Manager
Greater Tzaneen Municipality

INVITATION TO TENDER

YOU ARE HEREBY INVITED TO BID FOR THE
REPLACEMENT OF CIVIC CENTRE ROOF

TENDER NUMBER: BID NO :SCMU 06/2021 CLOSING DATE: 14 May 2021 CLOSING TIME: 12h00

THE FOLLOWING PARTICULARS MUST BE FURNISHED **(FAILURE TO DO SO MAY RESULT IN YOUR TENDER BEING DISQUALIFIED)**	
Name of Tenderer	
CIDB CRS Number	
Postal Address	
Street Address	
Telephone Number	Code: Number:
Cellphone Number	
Facsimile Number	Code: Number:
VAT Registration Number	
CSD Registration Number	

Has an original tax clearance certificate been submitted (MBD 2)?	YES/NO
HAS A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE BEEN SUBMITTED? (MBD 6.1)	YES/NO
Are you the accredited representative in South Africa for the goods / services offered?	YES/NO (IF YES ENCLOSE PROOF)

SIGNATURE OF TENDERER	
DATE	
CAPACITY UNDER WHICH THIS TENDER IS SIGNED	
TOTAL TENDER PRICE TO INCLUDE VAT	

ANY ENQUIRIES REGARDING THE BIDDING PROCEDURE MAY BE DIRECTED TO:	
Municipality / Municipal Entity	Greater Tzaneen Municipality
Department	GTM Supply Chain Management Office
Contact Person	Ms. M. Mpyana
Tel	015 307 8251/082 924 7704
Fax	015 307 8019
E-mail	mpyanam@tzaneen.gov.za
ANY ENQUIRIES REGARDING TECHNICAL INFORMATION MAY BE DIRECTED TO:	
Department	Engineering Services
Contact Person	Ms. S. Mathebula
Tel	015 307 8213/072 137 2122
Fax	086 759 6412
E-mail	somisa.mathebula@tzaneen.gov.za

T1.2 TENDER DATA

The conditions of tender are the Standard Conditions of Tender as contained in Annex F of Board Notice 86 of 2010 in Government Gazette No. 33239 of 28 May 2010, Construction Industry Development Board (CIDB) Standard for Uniformity in Construction Procurement as is available from the CIDB website (see www.cidb.co.za).

The Standard Conditions of Tender (SANS294:2004 Annexure F) 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. Each item of data given below is cross-referenced to the clause in the Standard Conditions of Tender to which it mainly applies.

The additional conditions of tender are:

Clause number	Tender Data
F1	**GENERAL**
F.1.1	The Employer is **GREATER TZANEEN MUNICIPALITY,** represented by the Director of Engineering
F.1.2	**Tender Documents** *Add the following:* "The following documents form part of this tender: **VOLUME 1:** The JBCC Principal Building Agreement 6.2 2018. This publication is available and tenderers must obtain copies at their own cost from the South African Institution of Civil Engineering (SAICE), Private Bag X200, Halfway House 1685, Tel: (011) 805 5947, Fax: (011) 805 5971, e-mail: civilinfo@saice.org.za. **VOLUME 2:** General Preambles for Trades (2017) as prepared by The Association of South African Quantity Surveyors This document is obtainable separately, and bidders shall obtain their own copy. Volumes 1 and 2 may also be inspected, by appointment, at the offices of the Employer's Agent during normal office hours (08:00 am – 4:30 pm). The contract documents issued by the Employer comprise: **VOLUME 3:** The Contract Document (this document), in which is bound: **The Tender** **Tendering Procedures** Tender Notice and Invitation to Tender Tender data **Returnable Documents** List of returnable documents Returnable Schedules for Tender Evaluation Purposes Other Documents required for Tender Evaluation Purposes Returnable Schedules that will be incorporated into the Contract **The Contract** **Agreements and contract data** Form of offer and acceptance Contract Data Form of Guarantee Occupational Health and Safety Agreement **Pricing data** Pricing Instructions Bill of Quantities

	Scope of work Project Specification The Works Variations to Standardized and Particular Specification **Site information** Site information **Schedule of Contract Documents** Schedule of Contract Documents **Annexures** Occupational Health and Safety Specification Environmental Management Specification Labour Intensive Specification Drawings Volume 3 is deemed the "Returnable Documents" which must be returned to the Employer in terms of submitting a tender offer.
F.1.4	Attention is drawn to the fact that verbal information, given by the Employer's Agent during site visits/clarification meetings or at any other time prior to the award of the Contract, will not be regarded as binding on the Employer. Only information issued formally by the Employer in writing to tenderers will be regarded as amending the Tender Documents. The employer's agent is: Name: MSW Project Managers and Consult Engineers Address: Box 12, Pinewood Office Park, 33 Riley road, Woodmead, Sandton Tel: (011) 990-7600 Fax: E-mail: johane.ndlovu@msw.za.com
F1.5.3	The Employer may reject a tender, if, in the opinion of the Employer, the tenderer will be unable to achieve the contract participation goals tendered in the performance of the contract.
F1.6.2	A competitive negotiation procedure will not be followed
F1.6.3	A two-stage system will not be followed
F.2	**TENDER'S OBLIGATION**
F.2.1	The following tenderers who are registered with the CIDB, or are capable of being so registered prior to the evaluation of submissions, are eligible to submit tenders: 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 5GB class of construction work; and contractors registered as potentially emerging (PE) enterprises with the CIDB who are registered in one contractor grading designation lower than that required in terms of a) above, 5GB, therefore 5GB and who satisfy the following criteria: i) The Employer, following an interview with the management of the enterprise, is satisfied that the enterprise has the potential to develop and qualify to be registered in a higher contractor grading designation; and ii) The Employer, following a risk assessment, is able to provide the necessary supportive measures required to enable the enterprise to successfully execute the contract. **Percentage sub-contracting allowed = 25%** Joint ventures are eligible to submit tenders provided that: every member of the joint venture is registered with the CIDB; the lead partner has a contractor grading designation in the 5SN/GB or higher class of construction work; and the combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a 5GB or higher class of construction work.
F.2.7	The arrangements for a compulsory site meeting are as stated in the Tender Notice and Invitation to Tender. Tenderers must sign the attendance list in the name of the tendering entity. Addenda will be issued only to tenders and will be received only from those tendering entities appearing on the attendance list.

F2.9	The employer does not provide insurance. The contractor is responsible for providing full insurance cover for the contract.
F.2.12	If a tenderer wishes to submit an alternative tender offer, the only criteria permitted for such alternative tender offer is that it demonstrably satisfies the Employer's standards and requirements, the details of which may be obtained from the Employer's Agent. Calculations, drawings and all other pertinent technical information and characteristics as well as modified or proposed Pricing Data must be submitted with the alternative tender offer to enable the Employer to evaluate the efficacy of the alternative and its principal elements, to take a view on the degree to which the alternative complies with the Employer's standards and requirements and to evaluate the acceptability of the pricing proposals. Calculations must be set out in a clear and logical sequence and must clearly reflect all design assumptions. Pricing Data must reflect all assumptions in the development of the pricing proposal. Acceptance of an alternative tender offer will mean acceptance in principle of the offer. It will be an obligation of the contract for the tenderer, in the event that the alternative is accepted, to accept full responsibility and liability that the alternative offer complies in all respects with the Employer's standards and requirements. The modified Pricing Data must include an amount equal to 5% of the amount tendered for the alternative offer to cover the Employer's costs of confirming the acceptability of the detailed design before it is constructed.
F.2.13.3	Parts of each tender offer communicated on paper shall be submitted as an original, plus 0 copies.
F.2.13.5 F2.15.1	The employer's address for delivery of tender offers and identification details to be shown on each tender offer package are: **Tender Box at the** **Offices of the Greater Tzaneen Municipality** **1 Agatha Street,** **Tzaneen,** **0850**
F.2.13.5	A two-envelope procedure will not be followed.
F.2.15	The closing time for submission of tender offers is as stated in the Tender Notice and Invitation to Tender.
F.2.15.1	The employer shall **not** accept tender offers submitted by telegraph, telex, facsimile or e-mail.
F.2.16	The tender offer validity period is 90 days.
F.2.17	A tender will be rejected as non-responsive if the tenderer fails to provide any clarification requested by the employer within the time for submission stated in the employer's written request for such clarification. A tender will also be rejected as non-responsive if the tenderer fails, within the time stated in writing by the Employer, to comply with the requirements of F.4.4.
F.2.18	The tenderer shall, when requested by the Employer to do so, submit the names of all management and supervisory staff that will be employed to supervise the labour-intensive portion of the works together with satisfactory evidence that such staff members satisfy the eligibility requirements.
F.2.23	The tenderer is required to submit with his tender: 1) a CRS number must be supplied. 2) where the tendered amount inclusive of VAT exceeds R 10 million: i) audited annual financial statement for 3 years, or for the period since establishment if established during the last 3 years, if required by law to prepare annual financial statements for auditing; ii) a certificate certifying that the tenderer has no undisputed commitments for municipal services towards a municipality or other service provider in respect of which payment is overdue for more than 30 days; iii) particulars of any contracts awarded to the tenderer by an organ of state during the past five years, including particulars of any material non-compliance or dispute concerning the execution of such contract; iv) a statement indicating whether any portion of the goods or services are expected to be sourced from outside the Republic, and, if so, what portion and whether any portion of payment from the municipality or municipal entity is expected to be transferred out of the Republic. Where a tenderer satisfies CIDB contractor grading designation requirements through joint venture formation, such tenderers must submit the Certificates of Contractor Registration in respect of each partner.

F.3	**THE EMPLOYERS UNDERTAKINGS**
F.3.4	Tenders will be opened immediately after the closing time for tenders at **GREATER TZANEEN MUNICIPALITY, 1 AGATHA STREET, TZANEEN, 0850**
F.3.4.1	Notwithstanding any requests for confirmation of receipt of Addenda issued, the tenderer shall be deemed to have received such addenda if the employer can show proof of transmission thereof (or a notice in respect thereof) via electronic mail, facsimile or registered post.
F.3.8	Tenders will be considered non-responsive if, inter alia: the tender is not in compliance with the Scope of Work; the tenderer does not comply with the CIDB contractor grading designation specified in F.2.1.1.2 above; the tenderer has failed to clarify or submit any supporting documentation within the time for submission stated in the employers written request;
F.3.11	The procedure for the evaluation of responsive tenders is Method 4 80/20 or 90/10 Preference Point System shall be used for scoring the bidders. Price = 80/90, Specific Contract Participation Goals = 20/10 **FUNCTIONALITY** Total Functionality Scores = 100 points Minimum score for functionality is **70%** of the maximum points for functionality and a bidder who scores below this minimum shall not be considered for further evaluation in terms of price and contract participation goals. **Scoring of Functionality:** Functionality will be evaluated through the following: - 1. Company/ Entity's Experience 50 2. Personnel's Experience 20 3. Plant & Equipment 30 TOTAL 100 A minimum of 70% score on functionality will be required for a tender to be considered responsive. 1= Poor, 2= Fair/average, 3= Good, 4= Very Good, 5= Excellent

F.3.11

2. FUNCTIONALITY EVALUATION CRITERIA

Criterion Points Score		A Tender rating (score 1-5)	B Weighing
Relevant company work Experience (please attach copy of appointment letters and completion certificate related to scope of works)	• Completed similar project(s) with combined contract amount of or more than R 10,000,000.00 within the past 5 years	5	50
	• Completed similar project(s) with combined contract amount of or more than R 8,000,000.00 within the past 5 years	4	
	• Completed similar project(s) with combined contract amount of or more than R 5,000,000.00 within the past 5 years	3	
	• Completed similar project(s) with combined contract amount of or more than R 3,000,000.00 within the past 5 years	2	
	• Completed similar project(s) with combined contract amount of or more than R 2,000,000.00 within the past 5 years	1	
	• No submission = 0		
Plant and Equipment necessary for construction (attach certified Natis papers) or lease agreement (attach lease agreement and certified Natis papers)	• 1 X Crane=5, 1 X Trucks, 1 X LDV, Scaffolding	5	30
	• 1 X Trucks, 1 X LDV	3	
	• No plant and equipment provided.	0	
Number of years' experience of key personnel (attach CV's and certified qualifications). Degree or Diploma in Civil Engineering / Built Environment. Company must provide CV and certified copies of qualifications for the key personnel.	• Degree or higher and 5 years and above	5	20
	• Degree or Diploma and 4 years' experience	4	
	• Degree or Diploma and 3 years' experience	3	
	• Degree or Diploma and 2 years' experience	2	
	• Degree or Diploma and 1 years' experience	1	
TOTAL SCORE	**Functionality criteria Formula**: Bid= $^{AxB}/_{5}$		100%

F.3.11.10	**Risk Analysis (Additional sub-clause)** Notwithstanding compliance with regard to CIDB registration or any other requirements of the tender, the employer will perform a risk analysis in respect of the following: reasonableness of the financial offer reasonableness of unit rates and prices reasonableness of the Contract Participation Goals tendered the tenderers ability to fulfil its obligations in terms of the tender document, that is, that the tenderer can demonstrate that he/she possesses the necessary professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience, reputation, personnel to perform the contract, etc. No tenderer will be recommended for an award unless the tenderer has demonstrated that he/she has the resources and skills required.
F.3.12	Full insurance to be provided by the Contractor. The contractor must provide the employer with the insurance policy information and certificates prior to the commencement of the contract.
F.3.13.1	Tender offers will only be accepted if: the tenderer's tax matters have been declared by the South African Revenue Service to be in order; the tenderer is registered with the Construction Industry Development Board in an appropriate contractor grading designation; 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 has not: abused the Employer's Supply Chain Management System; or ii) failed to perform on any previous contract and has been given a written notice to this effect; and e) has completed the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the tenderer's ability to perform the contract in the best interests of the employer or potentially compromise the tender process.
F.3.18	The number of paper copies of the signed contract to be provided by the employer is one.
F.3.19	Labour Content: The minimum Labour content for this project shall be **10%**
F.4	**ADDITIONAL CONDITIONS OF TENDER** The additional conditions of tender are:
F.4.1	**Penalties:** The penalties for not reaching the required labour target values will be calculated at **100%** of the difference between the set target values and the actual target values achieved by the contractor at completion of the works. Penalties will be applied monthly, when the actual figures are less than **75%** of the planned accumulative monthly figures. **Greater Tzaneen Municipality reserves the right to terminate the contract as soon as the actual figures are less than 50% of the planned programme**. No bonuses for achieving the set target values are applicable. In the event that penalties are reversed, no interest will be claimable on the value of the penalty.
F.4.2	**Contract Participation Goal (CPG)** CPG is the value of goods, services and works, including VAT, for which the contractor proposes to engage labour and SMMEs from the local community. The CPG for this project is **30% of Tender Award Value excluding sections 1200, 1300, 1400; Contingencies & Escalation.**
F.4.2	**Eligibility Requirements:** A contract will only be entered into with a tenderer who has in his employee's management and supervisory staff satisfying the requirements of the scope of work for labour intensive competencies for supervisory and management staff. **Tender Qualification: Labour Intensive Contracts** To qualify for award of the Contract, tenderers shall meet the following minimum qualifying criteria: (a) Having participated in and graduated with fully satisfactory results from the relevant national qualification framework training organized under EPWP (or other similar project e.g. the Gundo Lashu programme), and applying trained supervisory staff on a full-time basis for the execution of the works.

	(b) Liquid assets/or credit facilities covering the expected expenditures for two full work months; (c) Proposals for timely acquisition (own, lease, hire, etc.) of the essential minimum equipment; (d) The contractor will carry out the works using labour based work methods as described in the Special Conditions of Contract.
F.4.3	**Compliance with Occupational Health and Safety Act 1993** Tenderers are to note the requirements of the Occupational Health and Safety Act No. 85 of 1993 and the Construction Regulations 2003 issued in terms of Section 43 of the Act. The tenderer shall be deemed to have read and fully understood the requirements of the above Act and Regulations and to have allowed for all costs in compliance therewith. In this regard the Tenderer shall submit with his tender: Health and Safety Plan in T2.2: Returnable Schedules, a detailed Health and Safety Plan in respect of the Works in order to demonstrate the necessary competencies and resources to perform the construction work all in accordance with the Act and Regulations. Such Health and Safety Plan shall cover inter-alia the following details: (1) Management Structure, Site Supervision and Responsible Persons including a succession plan. (2) Contractor's induction training programme for employees, sub-contractors and visitors to the Site. (3) Health and safety precautions and procedures to be adhered to in order to ensure compliance with the Act, Regulations and Safety Specifications. (4) Regular monitoring procedures to be performed. (5) Regular liaison, consultation and review meetings with all parties. (6) Site security, welfare facilities and first aid. (7) Site rules and fire and emergency procedures. Tenderers are to note that the Contractor is required to ensure that all sub-contractors or others engaged in the performance of the contract also comply with the above requirements. The Contractor shall prepare and maintain a Health and Safety File in respect of the project, which shall be available for inspection on Site at all times and handed over to the Employer on Final Completion of the project. The Contractor is required to submit to the Employer the Occupational Health and Safety Agreement (included in C1.4 of the Contract Document) and a letter of good standing from the Compensation Commissioner, or a licensed compensation insurer, within 14 days after the Commencement Date of the contract.
F.4.4	**Eligibility with respect to expanded public works programme** This Contract does qualify for consideration as an Expanded Public Works Programme project.
F.4.5	**Claims arising after submission of tender** No claim for any extras arising out of any doubt or obscurity as to the true intent and meaning of anything shown on the Contract Drawings or contained in the Conditions of Contract, Scope of Work and Pricing Data, will be admitted by the Employer/Employer's Agent after the submission of any tender and the Tenderer shall be deemed to have: 1) inspected the Contract Drawings and read and fully understood the Conditions of Contract. 2) read and fully understood the whole text of the Scope of Work and Pricing Data and thoroughly acquainted himself with the nature of the works proposed and generally of all matters which may influence the Contract. 3) visited the site of the proposed works, carefully examined existing conditions, the means of access to the site, the conditions under which the work is to be done, and acquainted himself with any limitations or restrictions that may be imposed by the Municipal or other Authorities in regard to access and transport of materials, plant and equipment to and from the site and made the necessary provisions for any additional costs involved thereby. 4) requested the Employer or his duly authorised agent to make clear the actual requirements of anything shown on the Contract Drawings or anything contained in the Scope of Work and Pricing Data, the exact meaning or interpretation of which is not clearly intelligible to the Tenderer.

	Before submission of any tender, the Tenderer should check the number of pages, and if any are found to be missing or duplicated, or the figures or writing indistinct, or if the Pricing Data contain any obvious errors, the tenderer must apply to the Employer/Employer's Agent at once to have the same rectified, as no liability will be admitted by the Employer/Employer's Agent in respect of errors in any tender due to the foregoing. 5) received any Addenda to the tender documents which have been issued in accordance with the Employer's Supply Chain Management Policy.
F.4.6	**Imbalance in tendered rates** In the event of tendered rates or lump sums being declared by the Employer to be unacceptable to it because they are either excessively low or high or not in proper balance with other rates or lump sums, the Tenderer may be required to produce evidence and advance arguments in support of the tendered rates or lump sums objected to. If, after submission of such evidence and any further evidence requested, the Employer is still not satisfied with the tendered rates or lump sums objected to, it may request the tenderer to amend these rates and lump sums along the lines indicated by it. The Tenderer will then have the option to alter and/or amend the rates and lump sums objected to and such other related amounts as are agreed on by the Employer, but this shall be done without altering the tender offer as tendered or, if applicable, the corrected total of prices in accordance with F.3.9.3. Should the Tenderer fail to amend his Tender in a manner acceptable to the Employer, the Employer may reject the Tender.
F.4.7	**Community Liaison Officer** The contractor shall in his dealings with the communities affected by the project, work with the Project Steering Committee (PSC) which has been elected by the community. The PSC acts as a communication structure between the project and the community. The process of appointing the Community Liaison Officer (CLO) is also facilitated by the Social Facilitator together with the PSC. The CLO acts as a link between the contractor and the labourers and the PSC, and attends to all labour related issues. The CLO facilitates labour recruitment through the PSC. The CLO and the Executive structure of the PSC (Chairperson, Vice-Chairperson and the Secretary) attend monthly project progress report meetings (site) besides the PSC meetings attended by the full PSC. The contractor must include in his rates the costs of attending and average of one meeting each month. The CLO is appointed for the period of physical construction, plus a period of 14 days prior to this period. The contractor will provide office and stationery to the CLO to be able to perform his or her duties. The ISD Consultant shall prepare and facilitate the signing of the contract between the CLO and the contractor. Remuneration of the CLO R6,500.00 per month for the period of employment and will change in accordance with change in rates from the Department of Labour. A CLO who fails in the responsibilities he/she is given will be replaced following the procedures as stipulated in his or her contract with the contractor. The Terms of reference for the CLO shall be provided by the ISD Consultant.
F.4.8	**Labour intensive construction/use of local labour** It is a requirement of the Contract that the work be executed in such a manner as to maximise the use of labour-intensive construction systems in order to provide the local community with employment opportunities. Only those tenderers who can demonstrate that they will have in their employ management and supervisory staff satisfying the requirement of the scope of work for labour-intensive competencies for supervisory and management staff during the validity of the contract are eligible to submit tenders **The tenderer must submit to the Employer, names of all management and supervisory staff that will be employed to supervise the labour-intensive portion of the works together with satisfactory evidence that such staff members satisfy eligibility requirements.**
F.4.9	**Invalid tenders** Tenders shall be considered invalid and shall be endorsed and recorded as such in the tender opening record, by the responsible official who opened the tender, in the following circumstances: a) if the tender offer (the tender price/amount) is not submitted on the Form of Offer and Acceptance bound into this tender document (form C1.1, Part C1: Agreements and Contract Data); b) if the tender is not completed in non-erasable ink; c) if the Form of Offer and Acceptance has not been signed;

	d) if the Form of Offer and Acceptance is signed, but the name of the tenderer is not stated or is indecipherable.
F.4.10	**Requests for contract documents, or parts thereof, in electronic format** The Employer shall not formally issue tender documents in electronic format as contemplated in F.2.13.2 and F.2.13.3 and shall only issue tender documents in hardcopy. An electronic version of the issued tender documents may be made available to the tenderer, upon written request in terms of this clause, subject to the following: Electronic copies of the contract document, or parts thereof, will only be provided to tenderers who have been issued with the tender documents as contemplated in F.1.2 in hardcopy. The electronic version shall not be regarded as a substitute for the issued tender documents. The Employer shall not accept tenders submitted in electronic format. Tenderers may not complete and submit a printed copy of the electronic version of the tender document or part thereof. Only those tenders that have been completed on the issued hard copy tender document shall be considered. The Employer accepts no responsibility or liability arising from any reliance on or use of the electronic version provided in terms of this clause. The Employer further does not guarantee that the electronic version corresponds with the issued tender documents in all respects. Tenderers are alerted to the fact that electronic versions of the tender documents may not reflect any notices or addenda that amend the tender document. Any non-compliance with these provisions, including effecting any unauthorised alterations to the tender document as contemplated in F.2.11, shall render the tender invalid. The Employer reserves the right to take any action against such tenderer allowed in law including, in circumstances where the tender had already been awarded, the right to cancel the contract. In requesting the electronic version of the tender document or parts thereof, the tenderer is deemed to have read, understood and accepted all of the above conditions.

Standard Conditions of Tender

(As contained in Annexure F of Board Notice No 86 of 2010 in Government Gazette No 33239 of 28 May 2010, CIDB Standard for Uniformity in Construction Procurement)

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: 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. Conflicts of interest in respect of those engaged in the procurement process include direct. indirect or family interests in the tender or outcome of the procurement process and any personal bias, inclination, obligation, allegiance or loyalty which would in any way affect any decisions taken.
F.1.1.3	The employer shall not seek and a tenderer shall not submit a tender without having a firm intention and the capacity to proceed with the contract
F.1.2	**Tender Documents** The documents issued by the employer for the purpose of a tender offer are listed in the tender data.
F.1.3	**Interpretation**

F.1.3.1	The tender data and additional requirements contained in the tender schedules that are included in the returnable documents are deemed to be part of these conditions of tender.
F.1.3.2	These conditions of tender, the tender data and tender schedules which are only required for tender evaluation purposes, shall not form part of any contract arising from the invitation to tender.
F.1.3.3	For the purposes of these conditions of tender, the following definitions apply: **conflict of interest** means any situation in which: someone in a position of trust has competing professional or personal interests which make it difficult to fulfil his or her duties impartially; 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 incompatibility or contradictory interests exist between an employee and the organisation which employs that employee. **comparative offer** means the tenderer's financial offer after all tendered parameters that will affect the value of the financial offer have been taken into consideration in order to enable comparisons to be made between offers on a comparative basis; **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; **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; **organization means** a company, firm, enterprise, association or other legal entity, whether incorporated or not, or a public body **quality (functionality)** means the totality of features and characteristics of a product or service that bear on its ability to satisfy stated or implied needs
F.1.4	**Communication and employer's agent** Each communication between the employer and a tenderer shall be to or from the employer's agent only, and in a form that can be read, copied and recorded. Writing shall be in the English language. The employer shall not take any responsibility for non-receipt of communications from or by a tenderer. The name and contact details of the employer's agent are stated in the tender data.
F.1.5	**The employer's right to accept or reject any tender offer**
F.1.5.1	The employer may accept or reject any variation, deviation, tender offer, or alternative tender offer, and may cancel the tender process and reject all tender offers at any time before the formation of a contract. The employer shall not accept or incur any liability to a tenderer for such cancellation and rejection, but will give written reasons for such action upon written request to do so.
F.1.5.2	The employer may not subsequent to the cancellation or abandonment of a tender process or the rejection of all responsive tender offers re-issue a tender covering substantially the same scope of work within a period of six months unless only one tender was received and such tender was returned unopened to the tenderer.
F.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.1.6.2.1	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 offender.

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** Accept that the employer will not compensate the tenderer for any costs incurred in the preparation and submission of a tender offer, including the costs of any testing necessary to demonstrate that aspects of the offer satisfy requirements.
F.2.3	**Check documents** Check the tender documents on receipt for completeness and notify the employer of any discrepancy or omission
F.2.4	**Confidentiality and copyright of documents** Treat as confidential all matters arising in connection with the tender. Use and copy the documents issued by the employer only for the purpose of preparing and submitting a tender offer in response to the invitation.
F.2.5	**Reference documents** Obtain, as necessary for submitting a tender offer, copies of the latest versions of standards, specifications, conditions of contract and other publications, which are not attached but which are incorporated into the tender documents by reference.
F.2.6	**Acknowledge addenda** Acknowledge receipt of addenda to the tender documents, which the employer may issue, and if necessary apply for an extension to the closing time stated in the tender data, in order to take the addenda into account.
F.2.7	**Clarification meeting** Attend, where required, a clarification meeting at which tenderers may familiarize themselves with aspects of the proposed work, services or supply and raise questions. Details of the meeting(s) are stated in the tender data.
F.2.8	**Seek clarification** Request clarification of the tender documents, if necessary, by notifying the employer at least five working days before the closing time stated in the tender data.
F.2.9	**Insurance (Contractor to provide 100% insurance)** Be aware that the extent of insurance to be provided by the employer (if any) might not be for the full cover required in terms of the conditions of contract identified in the contract data. The tenderer is advised to seek qualified advice regarding insurance.
F.2.10	**Pricing the tender offer**
F.2.10.1	Include in the rates, prices, and the tendered total of the prices (if any) all duties, taxes (except Value Added Tax (VAT), and other levies payable by the successful tenderer, such duties, taxes and levies being those applicable 14 days before the closing time stated in the tender data.
F2.10.2	Show VAT payable by the employer separately as an addition to the tendered total of the prices.
F.2.10.3	Provide rates and prices that are fixed for the duration of the contract and not subject to adjustment except as provided for in the conditions of contract identified in the contract data.
F.2.10.4	State the rates and prices in Rand unless instructed otherwise in the tender data. The conditions of contract identified in the contract data may provide for part payment in other currencies.
F.2.11	**Alterations to documents** Do not make any alterations or additions to the tender documents, except to comply with instructions issued by the employer, or necessary to correct errors made by the tenderer. All signatories to the tender offer shall initial all such alterations. Erasures and the use of masking fluid are prohibited.

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 comprises 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.2.13	**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 in black ink.
F.2.13.3	Submit the parts of the tender offer communicated on paper as an original plus the number of copies stated in the tender data, with an English translation of any documentation in a language other than English, and the parts communicated electronically in the same format as they were issued by the employer.
F.2.13.4	Sign the original and all copies of the tender offer where required in terms of the tender data. The employer will hold all authorized signatories liable on behalf of the tenderer. Signatories for tenderers proposing to contract as joint ventures shall state which of the signatories is the lead partner whom the employer shall hold liable for the purpose of the tender offer.
F.2.13.5	Seal the original and each copy of the tender offer as separate packages marking the packages as "ORIGINAL" and "COPY". Each package shall state on the outside the employer's address and identification details stated in the tender data, as well as the tenderer's name and contact address.
F.2.13.6	Where a two-envelope system is required in terms of the tender data, place and seal the returnable documents listed in the tender data in an envelope marked “financial proposal” and place the remaining returnable documents in an envelope marked “technical proposal”. Each envelope shall state on the outside the employer’s address and identification details stated in the tender data, as well as the tenderer's name and contact address.
F.2.13.7	Seal the original tender offer and copy packages together in an outer package that states on the outside only the employer's address and identification details as stated in the tender data.
F.2.13.8	Accept that the employer will not assume any responsibility for the misplacement or premature opening of the tender offer if the outer package is not sealed and marked as stated.
F.2.13.9	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. 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.
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 employer's 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 total of the prices or substance of the tender offer is sought, offered, or permitted. The total of the prices stated by the tenderer shall be binding upon the tenderer. **Note:** Sub-clause F.2.17 does not preclude the negotiation of the final terms of the contract with a preferred tenderer following a competitive selection process, should the Employer elect to do so.
F.2.18	**Provide other material**
F.2.18.1	Provide, on request by the employer, any other material that has a bearing on the tender offer, the tenderer's commercial position (including notarized joint venture agreements), preferencing arrangements, or samples of materials, considered necessary by the employer for the purpose of a full and fair risk assessment. Should the tenderer not provide the material, or a satisfactory reason as to why it cannot be provided, by the time for submission stated in the employer's request, the employer may regard the tender offer as non-responsive.
F.2.18.2	Dispose of samples of materials provided for evaluation by the employer, where required.
F.2.19	**Inspections, tests and analysis** Provide access during working hours to premises for inspections, tests and analysis as provided for in the tender data
F.2.20	**Submit securities, bonds, policies, etc.** If requested, submit for the employer's acceptance before formation of the contract, all securities, bonds, guarantees, policies and certificates of insurance required in terms of the conditions of contract identified in the contract data.
F.2.21	**Check final draft** Check the final draft of the contract provided by the employer within the time available for the employer to issue the contract.
F.2.22	**Return of other tender documents** If so instructed by the employer, return all retained tender documents within 28 days after the expiry of the validity period stated in the tender data
F.2.23	**Certificates** Include in the tender submission or provide the employer with any certificates as stated in the tender data.
F.3	**The employer's undertakings**
F.3.1	**Respond to 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: 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; the new partners to a joint venture were not prequalified in the first instance, either as individual firms or as another joint venture; or 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 seven days before the tender closing time stated in the Tender Data. If, as a result a tenderer applies for an extension to the closing time stated in the Tender Data, the Employer may grant such extension and, shall then notify all tenderers who drew documents.
F.3.3	**Return late tender offers** Return tender offers received after the closing time stated in the Tender Data, unopened, (unless it is necessary to open a tender submission to obtain a forwarding address), to the tenderer concerned.
F.3.4	**Opening of tender submissions**
F.3.4.1	Unless the two-envelope system is to be followed, open valid tender submissions in the presence of tenderers' agents who choose to attend at the time and place stated in the tender data. Tender submissions for which acceptable reasons for withdrawal have been submitted will not be opened.
F.3.4.2	Announce at the meeting held immediately after the opening of tender submissions, at a venue indicated in the tender data, the name of each tenderer whose tender offer is opened, where applicable, the total of his prices, preferences claimed 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 the quality of the technical proposals offered by tenderers, then advise tenderers who remain in contention for the award of the contract of the time and place when the financial proposals will be opened. Open only the financial proposals of tenderers, who score in the quality evaluation more than the minimum number of points for quality stated in the tender data, and announce the score obtained for the technical proposals and the total price and any preferences claimed. Return unopened financial proposals to tenderers whose technical proposals failed to achieve the minimum number of points for quality.
F.3.6	**Non-disclosure** Not disclose to tenderers, or to any other person not officially concerned with such processes, information relating to the evaluation and comparison of tender offers, the final evaluation price and recommendations for the award of a contract, until after the award of the contract to the successful tenderer.
F.3.7	**Grounds for rejection and disqualification** Determine whether there has been any effort by a tenderer to influence the processing of tender offers and instantly disqualify a tenderer (and his tender offer) if it is established that he engaged in corrupt or fraudulent practices.
F.3.8	**Test for responsiveness**
F.3.8.1	Determine, on opening and before detailed evaluation, whether each tender offer properly received: complies with the requirements of these Conditions of Tender, has been properly and fully completed and signed, and 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: detrimentally affect the scope, quality, or performance of the works, services or supply identified in the Scope of Work, change the Employer*'s* or the tenderer's risks and responsibilities under the contract, or affect the competitive position of other tenderers presenting responsive tenders, if it were to be rectified. Reject a non-responsive tender offer, and not allow it to be subsequently made responsive by correction or withdrawal of the non-conforming deviation or reservation

F.3.9	**Arithmetical errors**
F.3.9.1	Check responsive tenders for discrepancies between amounts in words and amounts in figures. Where there is a discrepancy between the amounts in figures and the amount in words, the amount in words shall govern.
F.3.9.2	Check the highest ranked tender or tenderer with the highest number of tender evaluation points after the evaluation of tender offers in accordance with F.3.11 for: the gross misplacement of the decimal point in any unit rate; omissions made in completing the pricing schedule or bills of quantities; or arithmetic errors in: line item totals resulting from the product of a unit rate and a quantity in bills of quantities or schedules of prices; or the summation of the prices.
F.3.9.3	Notify the tenderer of all errors or omissions that are identified in the tender offer and either confirm the tender offer as tendered or accept the corrected total of prices.
F.3.9.4	Where the tenderer elects to confirm the tender offer as tendered, correct the errors as follows: If bills of quantities or pricing schedules apply and there is an error in the line item total resulting from the product of the unit rate and the quantity, the 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. Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the tenderer's addition of prices. the total of the prices shall govern and the tenderer will be asked to revise selected item prices (and their rates if bills of quantities apply) to achieve the tendered total of the prices.
F.3.10	**Clarification of a tender offer** Obtain clarification from a tenderer on any matter that could give rise to ambiguity in a contract arising from the tender offer
F.3.11	**Evaluation of Tender Offers**
F.3.11.1	**General** Appoint an evaluation panel of not less than three persons. Reduce each responsive tender offer to a comparative offer and evaluate it using the tender evaluation methods and associated evaluation criteria and weightings that are specified in the tender data
F.3.11.2	**Method 1 : Financial Offer** In the case of a financial offer: Rank tender offers from the most favourable to the least favourable comparative offer. Recommend the highest ranked tenderer for the award of the contract, unless there are compelling and justifiable reasons not to do so. Re-rank all tenderers should there be compelling and justifiable reasons not to recommend the highest ranked tenderer and recommend the highest ranked tenderer, unless there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated.

F.3.11.3 **Method 2: Financial offer and preference**

In the case of a financial offer and preferences:
Score each tender in respect of the financial offer made and preferences claimed, if any, in accordance with the provisions of F.3.11. 7 and F.3.11.8.

Calculate the total number of tender evaluation points (T_{EV}) in accordance with the following formula:

$$T_{EV} = N_{FO} + N_P$$

where:

N_{FO} is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11.7;

N_P is the number of tender evaluation points awarded for preferences claimed in accordance with F.3.11.8.

Rank tender offers from the highest number of tender evaluation points to the lowest.
Recommend the tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.
Rescore and re-rank all tenderers should there be compelling and justifiable reasons not to recommend the tenderer with the highest number of tender evaluation points, and recommend the tenderer with the highest number of tender evaluation points, unless there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated

F.3.11.4 **Method 3: Financial offer and quality**

In the case of a financial offer and quality:
Score each tender in respect of the financial offer made and the quality offered in accordance with the provisions of F.3.11.7 and F.3.11.9, rejecting all tender offers that fail to score the minimum number of points for quality stated in the tender data, if any.

Calculate the total number of tender evaluation points (T_{EV}) in accordance with the following formula:

$$T_{EV} = N_{FO} + N_Q$$

where:

N_{FO} is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11.7;

N_Q is the number of tender evaluation points awarded for preferences claimed in accordance with F.3.11.9.

Rank tender offers from the highest number of tender evaluation points to the lowest.
Recommend tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.
Rescore and re-rank all tenderers should there be compelling and justifiable reasons not to recommend the tenderer with the highest number of tender evaluation points and recommend the tenderer with the highest number of tender evaluation points, unless there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated

F.3.11.5 **Method 4: Financial offer, quality and preferences**

In the case of a financial offer, quality and preferences:
Score each tender in respect of the financial offer made, preference claimed, if any, and the quality offered in accordance with the provisions of F.3.11.7 to F.3.11.9, rejecting all tender offers that fail to score the minimum number of points for quality stated in the tender data, if any.

Calculate the total number of tender evaluation points (T_{EV}) in accordance with the following formula, unless otherwise stated in the Tender Data:

$$T_{EV} = N_{FO} + N_P + N_Q$$

where:

N_{FO} is the number of tender evaluation points awarded for the financial offer made in accordance with F.3.11. 7;

N_P is the number of tender evaluation points awarded for preferences claimed in accordance with F.3.11.B.

N_Q is the number of tender evaluation points awarded for quality offered in accordance with F.3.11.9.

Rank tender offers from the highest number of tender evaluation points to the lowest.
Recommend the tenderer with the highest number of tender evaluation points for the award of the contract, unless there are compelling and justifiable reasons not to do so.
Rescore and re-rank all tenderers should there be compelling and justifiable reasons not to recommend the tenderer with the highest number of tender evaluation paints and recommend the tenderer with the highest number of lender evaluation points, unless there are compelling and justifiable reasons not to do so and the process set out in this subclause is repeated.

F.3.11.6 **Decimal places**

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

F.3.11.7 **Scoring Financial Offers**
Score the financial offers of remaining responsive tender offers using the following formula:

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

where:

N_{FO} is the number of tender evaluation paints awarded for the financial offer.

W_1 is the maximum possible number of tender evaluation points awarded for the financial offer 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	$A = \left[1 + \left(\frac{P - P_m}{P_m}\right)\right]$	$A = \frac{P}{P_m}$
2	Lowest price or percentage commission / fee	$A = \left[1 - \left(\frac{P - P_m}{P_m}\right)\right]$	$A = \frac{P_m}{P}$

[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 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	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: $N_Q = W_2 \times \frac{S_O}{M_S}$ 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** No insurance to be provided by the employer.
F.3.13	**Acceptance of tender offer** Accept the tender offer, if in the opinion of the employer, it does not present any unacceptable commercial risk and only if the tenderer: is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement, 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, has the legal capacity to enter into the contract, is not insolvent, in receivership, 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, complies with the legal requirements, if any, stated in the tender data, and 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: addenda issued during the tender period, inclusion of some of the returnable documents, 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.
	Payment for works identified in the Scope of Works as being labour-intensive shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the Scope of Work. Any payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict
	The Contractor's payment invoices shall be accompanied by labour information for the corresponding period in a format specified by the employer. If the contractor chooses to delay submitting payment invoices, labour returns shall still be submitted as per frequency and timeframe stipulated by the EMPLOYER. The contractor's invoices shall not be paid until all pending labour information has been submitted.
	Payment for works identified in the Scope of Works as being labour-intensive shall only be made in accordance with the provisions of the Contract if the works are constructed strictly in accordance with the provisions of the Scope of Work. Any payment for such works shall not relieve the Contractor in any way from his obligations either in contract or in delict
	The Contractor's payment invoices shall be accompanied by labour information for the corresponding period in a format specified by the employer. If the contractor chooses to delay submitting payment invoices, labour returns shall still be submitted as per frequency and timeframe stipulated by the Employer. The contractor's invoices shall not be paid until all pending labour information has been submitted.
	The current Ministerial Determination (also downloadable at www.epwp.gov.za), Expanded Public Works Programmes, issued in terms of the Basic Condition of Employment Act of 1997 by the Minister of Labour in Government Notice, shall apply to works described in the scope of work as being labour-intensive and which are undertaken by unskilled workers.

T2 RETURNABLE DOCUMENTS

T2 RETURNABLE DOCUMENTS

T2.1 LIST OF RETURNABLE DOCUMENTS

The tenderer must complete the following returnable documents:

Returnable Schedules required only for tender evaluation purposes

Greater Tzaneen Municipality Joint Venture Disclosure Form

Compulsory Enterprise Questionnaire

Record of Addenda to Tender Documents

Proposed Amendments and Qualifications

Schedule of Subcontractors

Schedule of Plant and Equipment

Schedule of the Tenderer's Experience (work undertaken for other institutions)

Schedule of work undertaken for Greater Tzaneen Municipality

Other documents required only for tender evaluation purposes

Proof of Contractor Registration with the CIDB

CSD Report

Tax Clearance and SARS PIN

Declaration for Procurement above R10 Million (All Applicable Taxes Included)

Certificate of Bidder's visit to the site

Certificate of Authority for Signatory

Alterations by Tenderer

Surety and Bank Details

Declaration of Interest (MBD4)

Declaration for procurement above R10 million (All applicable taxes included) (MBD5)

Preference Points Claim Form In Terms Of The Preferential Procurement Regulations, 2017 (MBD6.1)

Declaration Certificate for Local Production and Content (MBD6.2)

Contract Form – Rendering Services (MBD7.2)

Declaration of Bidder's Past Supply Chain Management Practices (MBD8)

Certificate of Independent Bid Determination (MBD9)

Municipal Clearance Certificate

Company Profile

Proof of Company Registration

Letter of Good Standing: Workmen's Compensation Fund

Copies of Completion Certificates: Previous Work

Three years' audited financial statements

Form in Terms of the Functional Requirements

Returnable Schedules that will be incorporated into the contract

Preference Points Claim Form In Terms Of The Preferential Procurement Policy Framework Preferential Procurement Regulations, 2017
Declaration Certificate for Local Production and Content

Agreement and Contract Data
Contract Data: Part 2

Performance Guarantee

Agreement in Terms of Section 37(2) of the Occupational Health And Safety Act (Act No. 85 of 1993)
Pricing Data
Bill of Quantities

T2.2 RETURNABLE SCHEDULES

1A. JOINT VENTURE DISCLOSURE FORM

GENERAL

i) All the information requested must be filled in the spaces provided. If additional space is required, additional sheets may be used and attached to the original documents.

ii) A copy of the joint venture agreement must be attached to this form, in order to demonstrate the Affirmable, Joint Venture Partner's share in the ownership, control, management responsibilities, risks and profits of the joint venture, the proposed joint venture agreement must include specific details relating to:

a) the contributions of capital and equipment
b) work items to be performed by the Affirmable Joint Venture Partner's own forces
c) work items to be performed under the supervision of the Affirmable Joint Venture Partner.

iii) Copies of all written agreements between partners concerning the contract must be attached to this form including those, which relate to ownership options and to restrictions/limits regarding ownership and control.

iv) ABE partners must complete ABE Declaration Affidavits.

v) The joint venture must be formalised. All pages of the joint venture agreement must be signed by all the parties concerned. A letter/ notice of intention to formalise a joint venture once the contract has been awarded will not be considered.

vi) Should any of the above not be complied with, the joint venture will be deemed null and void and will be considered non-responsive.

1. JOINT VENTURE PARTICULARS

a) Name ----------

b) Postal address ----------

---

c) Physical address ----------

---

d) Telephone ----------

e) Fax ----------

2. IDENTITY OF EACH NON-AFFIRMABLE JOINT VENTURE PARTNER

2.1 a) Name of Firm _____

Postal address _____

Physical address _____

Telephone _____

Fax _____

Contact person for matters pertaining to Joint Venture Participation Goal requirements:

_____

2.2 b) Name of Firm _____

Postal address _____

Physical address _____

Telephone _____

Fax _____

Contact person for matters pertaining to Joint Venture Participation Goal requirements:

_____

(Continue as required for further non-Affirmable Joint Venture Partners)

3. IDENTITY OF EACH AFFIRMABLE JOINT VENTURE PARTNER

3.1 a) Name of Firm _____

Postal address _____

Physical address _____

Telephone _____

Fax _____

Contact person for matters pertaining to Joint Venture Participation Goal requirements:

3.2 a) Name of Firm _____

Postal address _____

Physical address _____

Telephone _____

Fax _____

Contact person for matters pertaining to Joint Venture Participation Goal requirements:

3.3 a) Name of Firm _____

Postal address _____

Physical address _____

Telephone _____

Fax _____

Contact person for matters pertaining to Joint Venture Participation Goal requirements:

4. BRIEF DESCRIPTION OF THE ROLES OF THE AFFIRMABLE JOINT VENTURE PARTNERS IN THE JOINT VENTURE

5. OWNERSHIP OF THE JOINT VENTURE

a) Affirmable Joint Venture Partner ownership percentage(s) _____ %

b) Non-Affirmable Joint Venture Partner ownership percentage(s) _____ %

c) Affirmable Joint Venture Partner percentages in respect of : *

(i) Initial Profit and loss sharing _____

(ii) Initial capital contribution in Rand _____

_____

(*Brief descriptions and further particulars should be provided to clarify percentages).

(iii) Anticipated on-going capital contributions in Rands _____

_____

_____

(iv) Contributions of equipment (specify types, quality, and quantities of equipment) to be provided by each partner.

6. RECENT CONTRACTS EXECUTED BY PARTNERS IN THEIR OWN RIGHT AS PRIME CONTRACTORS OR AS PARTNERS IN OTHER JOINT VENTURES

	NON-AFFIRMABLE JOINT VENTURE PARTNERS	PARTNER NAME
a)		
b)		
c)		
d)		
e)		

	AFFIRMABLE JOINT VENTURE PARTNERS	PARTNER NAME
a)		
b)		
c)		
d)		
e)		

7. CONTROL AND PARTICIPATION IN THE JOINT VENTURE

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

(a) Joint Venture cheque signing

(b) Authority to enter into contracts on behalf of the Joint Venture

---

(c) Signing, co-signing and/or collateralising of loans

(d) Acquisition of lines of credit

(e) Acquisition of performance bonds

(f) Negotiating and signing labour agreements

---

8. MANAGEMENT OF CONTRACT PERFORMANCE

(Fill in the name and firm of the responsible person).

(a) Supervision of field operations

(b) Major purchasing

(c) Estimating

(d) Technical management

---

9. MANAGEMENT AND CONTROL OF JOINT VENTURE

(a) Identify the “managing partner”, if any,

(b) What authority does each partner have to commit or obligate the other to financial institutions, insurance companies, suppliers, subcontractors and/or other parties participating in the execution of the contemplated works?

(c) Describe the management structure for the Joint Venture's work under the contract

MANAGEMENT FUNCTION / DESIGNATION	NAME	PARTNER*

(Fill in "ex Affirmable Joint Venture Partner" or "ex non-Affirmable Joint Venture Partner".

10. PERSONNEL

(a) State the approximate number of operative personnel (by trade/function/discipline) needed to perform the Joint Venture work under the Contract.

TRADE/FUNCTION/ DISCIPLINE	NUMBER EX AFFIRMABLE JOINT VENTURE PARTNERS	NUMBER EX NON-AFFIRMABLE JOINT VENTURE PARTNERS

(Fill in "ex Affirmable Joint Venture Partner" or "ex non-Affirmable Joint Venture Partner").

(b) Number of operative personnel to be employed on the Contract who are currently in the employ of partners.

(i) Number currently employed by Affirmable Joint Venture Partners

---

(ii) Number currently employed by the Joint Venture

(c) Number of operative personnel who are not currently in the employ of the respective partner and will be engaged on the project by the Joint Venture

---

(d) Name of individual(s) who will be responsible for hiring Joint Venture employees

---

(e) Name of partner who will be responsible for preparation of Joint Venture payrolls

---

11. CONTROL AND STRUCTURE OF THE JOINT VENTURE

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

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

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

Signature _____

Duly authorised to sign on behalf of _____

Name _____

Address _____

Telephone _____

Date _____

Signature _____

Duly authorised to sign on behalf of _____

Name _____

Address _____

Telephone _____

Date _____

Signature _____

Duly authorised to sign on behalf of _____

Name _____

Address _____

Telephone _____

Date _____

Signature _____

Duly authorised to sign on behalf of _____

Name _____

Address _____

Telephone _____

Date _____

1B. COMPULSORY ENTERPRISE QUESTIONNAIRE

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

Section 1: Name of enterprise: ----------

Section 2: VAT registration number, if any ----------

Section 3: CIDB registration number, if any ----------

Section 4: Particulars of sole proprietors and partners in partnerships

Name*	Identity number*	Personal income tax number*

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

Section 5: Particulars of companies and close corporations

Company registration number ----------

Close corporation number ----------

Tax reference number ----------

Section 6: Record in the service of the state

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

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

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

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

*insert separate page if necessary

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

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

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

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

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

*insert separate page if necessary

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

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

Signed ---------- Date ----------

Name ---------- Position ----------

Tenderer ----------

1C. RECORD OF ADDENDA TO TENDER DOCUMENTS

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

	Date	**Title or Details**

Attach additional pages if more space is required.

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

1D. PROPOSED AMENDMENTS AND QUALIFICATIONS

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

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

Page	Clause or Item	Proposal

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

1E. SCHEDULE OF SUBCONTRACTORS

NOTE: This table is **NOT TO BE USED to capture SMME Subcontractors/Suppliers contributing towards the SMME project goal**

SMME COMPANIES TO BE USED AS SUB-CONTRACTORS / SUPPLIERS MUST BE CAPTURED UNDER FORM: **RDP 2 (E) EMPLOYMENT OF SMME's**

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

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

	Name and address of proposed Subcontractor	Company Registration Number & CIDB Classification	Description of Work to be executed by Subcontractor

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

1F. SCHEDULE OF PLANT AND EQUIPMENT

The Bidder shall insert in the Schedule hereunder, a list of the major plant and equipment he proposes to use on this Contract. Failure to complete this schedule will be taken to indicate that Bidder does not have access to adequate plant and equipment.

DESCRIPTION OF MODEL	OWNER	WHEN AVAILABLE

Equipment not owned by the Bidder must be qualified as hire, on loan, etc.

Signed ---------- Date ----------

Name ---------- Position ----------

Tenderer ----------

1G. ORGANOGRAM AND CURRICULUM VITAE OF KEY PERSONNEL

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

Experienced Personnel for the contract.			
Item	Designation	Name of personnel	Years of Experience
1**	Contracts Manager		
2**	Site Agent		
3**	General Foreman		
4	Health and Safety Officer		
5	Other permanent employees		

**** Other qualifications within the Built Environment may be considered where appropriate.**
NOTE: The personnel listed in the table above will only be considered if their Signed Curriculum Vitae is attached.

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

1H. PROJECT PROGRAMME AND METHOD STATEMENT

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

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

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

Note to Tenderer

If a tenderer wishes to submit an alternative tender then this form, appropriately completed, shall be attached to the bill of quantities for the alternative proposal.

1I. SCHEDULE OF ESTIMATED MONTHLY EXPENDITURE

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

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

Signed ---------- Date ----------

Name ---------- Position ----------

Tenderer ----------

1K. SCHEDULE OF TENDERER'S EXPERIENCE

Bidders must furnish hereunder details of similar works/service, which they have satisfactorily completed in the past but not for Greater Tzaneen Municipality. The information shall include a description of the Works, the Contract value and name of Employer.

EMPLOYER	NATURE OF WORK	VALUE OF WORK	DURATION AND COMPLETION DATE	EMPLOYER CONTACT NO.

Signed _____ Date _____

1L. SCHEDULE OF WORK UNDERTAKEN FOR GREATER TZANEEN MUNICIPALITY

Bidders must furnish hereunder details of similar works/service, which they have satisfactorily completed in the past. The information shall include a description of the Works, the Contract value and name of Employer.

PREVIOUS AND/OR CURRENT PROJECTS UNDERTAKEN FOR GREATER TZANEEN MUNICIPALITY			
PROJECT NAME	**AWARDED AMOUNT**	**CONTRACT START DATE**	**ANTICIPATED / ACTUAL COMPLETION DATE**

Signed _____ Date _____

T2.3 OTHER DOCUMENTS REQUIRED ONLY FOR TENDER EVALUATION PURPOSES

PROOF OF CONTRACTOR REGISTRATION WITH THE CONSTRUCTION INDUSTRY DEVELOPMENT BOARD

Bidders are to attach proof of registration with the CIDB

CSD REPORT

Bidders are to attach print out of CSD Report

TAX CLEARANCE REQUIREMENTS

It is a condition of tender that the taxes of the successful tenderer must be in order, or that satisfactory arrangements have been made with South African Revenue Service (SARS) to meet the bidder's tax obligations.

1. In order to meet this requirement bidders are required to complete in full the attached form TCC 001 "Application for a Tax Clearance Certificate" and submit it to any SARS branch office nationally. The Tax Clearance Certificate Requirements are also applicable to foreign tenderers / individuals who wish to submit bids.

2. SARS will then furnish the tenderer with a Tax Clearance Certificate that will be valid for a period of 1 (one) year from the date of approval.

3. The original Tax Clearance Certificate and SARS PIN must be submitted together with the tender. Failure to submit the original and valid Tax Clearance Certificate will result in the invalidation of the tender. Certified copies of the Tax Clearance Certificate will not be acceptable.

4. In tenders where Consortia / Joint Ventures / Sub-contractors are involved, each party must submit a separate Tax Clearance Certificate.

5. Copies of the TCC 001 "Application for a Tax Clearance Certificate" form are available from any SARS branch office nationally or on the website www.sars.gov.za.

6. Applications for the Tax Clearance Certificates may also be made via eFiling. In order to use this provision, taxpayers will need to register with SARS as eFilers through the website www.sars.gov.za.

TAX CLEARANCE **TCC 001**

Application for a Tax Clearance Certificate

Purpose

Select the applicable option ..... Tenders ☐ Good standing ☐

If "Good standing", please state the purpose of this application

Particulars of applicant

Name/Legal name (Initials & Surname or registered name)	
Trading name (if applicable)	
ID/Passport no	Company/Close Corp. registered no
Income Tax ref no	PAYE ref no 7
VAT registration no 4	SDL ref no L
Customs code	UIF ref no U
Telephone no (CODE) - (NUMBER)	Fax no (CODE) - (NUMBER)
E-mail address	
Physical address	
Postal address	

Particulars of representative (Public Officer/Trustee/Partner)

Surname	
First names	
ID/Passport no	Income Tax ref no
Telephone no (CODE) - (NUMBER)	Fax no (CODE) - (NUMBER)
E-mail address	
Physical address	

Page 1 of 2

Particulars of tender (If applicable)

Tender number

Estimated Tender amount R ,

Expected duration of the tender year(s)

Particulars of the 3 largest contracts previously awarded

Date started	Date finalised	Principal	Contact person	Telephone number	Amount

Audit

Are you currently aware of any Audit investigation against you/the company?..... YES NO

If "YES" provide details

Appointment of representative/agent (Power of Attorney)

I the undersigned confirm that I require a Tax Clearance Certificate in respect of Tenders or Goodstanding.

I hereby authorise and instruct to apply to and receive from SARS the applicable Tax Clearance Certificate on my/our behalf.

Signature of representative/agent Date

Name of representative/ agent

Declaration

I declare that the information furnished in this application as well as any supporting documents is true and correct in every respect.

Signature of applicant/Public Officer Date

Name of applicant/ Public Officer

Notes:

1. It is a serious offence to make a false declaration.
2. Section 75 of the Income Tax Act, 1962, states: Any person who
   (a) fails or neglects to furnish, file or submit any return or document as and when required by or under this Act; or
   (b) without just cause shown by him, refuses or neglects to-
      (i) furnish, produce or make available any information, documents or things;
      (ii) reply to or answer truly and fully, any questions put to him ...
      As and when required in terms of this Act ... shall be guilty of an offence ...
3. **SARS will, under no circumstances, issue a Tax Clearance Certificate unless this form is completed in full.**
4. Your Tax Clearance Certificate will only be issued on presentation of your South African Identity Document or Passport (Foreigners only) as applicable.

Page 2 of 2

2A. CERTIFICATE OF BIDDER'S VISIT TO THE SITE

This is to certify that, I _____

representative of (tenderer) _____

_____

_____

of (address) _____

_____

_____

_____

Telephone number: _____

Fax number: _____

in the company of (Engineer's representative) _____

visited and examined the site on (date) _____

I further certify that I have made myself familiar with all local conditions likely to influence the work and the cost thereof, that I am satisfied with the description of the work and the explanations given by the said Engineer's Representative and that I understand perfectly the work to be done, as specified and implied, in the execution of this contract.

TENDERER'S REPRESENTATIVE: (Signature) _____

(Name) _____

EMPLOYER'S REPRESENTATIVE: (Signature) _____

(Name) _____

2B. CERTIFICATE OF AUTHORITY FOR SIGNATORY

Signatory for companies shall confirm their authority thereto by attaching a duly signed and dated copy of the relevant resolution of the boards of directors to this form.

An **example** is given below:

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

Mr/Mrs _____ , whose signature appears below, has been duly authorised

to sign all documents in connection with the Bid for Contract No _____

and any Contract that may arise there from on behalf of (name of Tenderer in block capitals)

_____

SIGNED ON BEHALF OF THE COMPANY:

IN HIS/HER CAPACITY AS: _____

DATE: _____

SIGNATURE OF SIGNATORY: _____

WITNESSES: **1.** _____

2. _____

EXAMPLE ONLY NOT TO BE COMPLETED ATTACH OWN CERTIFICATE OF AUTHORITY FOR SIGNATORY

2C. ALTERATIONS BY TENDERER

Should the Tenderer desire to make any departure or modification to the General Conditions of Contract, Special Conditions of Contract, Specifications, Schedule of Quantities or Drawings, or to qualify his Tender in any way, he shall set out his proposals clearly hereunder, or alternatively, state them in a covering letter attached to his Tender and referred to hereunder, failing which the Tender will be deemed to be unqualified.

PAGE	CLAUSE OR ITEM	DESCRIPTION

Signed ---------- Date ----------

Name ---------- Position ----------

Tenderer ----------

2D. CONTRACTOR'S ESTABLISHMENT ON SITE

The combined extended total tendered for Item 13.01 for the contractor's general obligations; i.e.

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

shall not exceed a maximum of 15 % of the tender sum (excluding VAT).

Total tendered for Item B13.01 expressed as a percentage of the tender sum (excluding VAT):

.....% (insert percentage).

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

2E. CERTIFICATE OF NON-COLLUSIVE TENDER

1 IN THE CASE OF A SINGLE CONSTRUCTION CONCERN:

I/We certify that this is a bona fide tender.

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

a) Fix or adjust the amount of this tender by or under or in accordance with any agreement or arrangement with any other person;

b) communicate to a person other than the person calling for these tenders the amount or approximate amount of the proposed tender, except when the confidential disclosure of the approximate amount of the tender is necessary to obtain the insurance-premium quotations required for preparation of the tender;

c) cause or induce any other person to communicate to me/us the amount or approximate amount of any rival tender for this contract;

d) enter into any agreement or arrangement with any other person to induce him to refrain from tendering for this contract, or to influence the amount of any tender or the conditions of any tender to be submitted, nor cause or induce any other person to enter into any such agreement or arrangement;

e) offer or pay or give or agree to pay or to give any sum of money or valuable consideration directly or indirectly to any person for doing or having done or causing or having caused to be done in relation to any tender or proposed tender for this contract, any action similar to those described above.

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

Signed ---------- Date ----------

Name ---------- Position ----------

Tenderer ----------

CERTIFICATE OF NON-COLLUSIVE TENDER (Continued)

2 IN THE CASE OF A CONSORTIUM OF CONSTRUCTION CONCERNS:

We certify that this is a bona fide tender.

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

a) Fix or adjust the amount of this tender by or under or in accordance with any agreement or arrangement with any person outside this consortium;

b) communicate to a person outside this consortium other than the person calling for these tenders, the amount or approximate amount of the proposed tender, except when the confidential disclosure of the approximate amount of the tender is necessary to obtain insurance premium quotations required for preparation of the tender;

c) cause or induce any person outside this consortium to communicate to us the amount or approximate amount of any rival tender for this contract.

d) enter into any agreement or arrangement with any person outside this consortium to induce him to refrain from tendering for this contract, or to influence the amount of any tender or the conditions of any tender to be submitted, nor cause or induce any person outside this consortium to enter into any such agreement or arrangement;

e) offer or pay or give or agree to give any sum of money or valuable consideration directly or indirectly to any person outside this consortium for doing or having done or causing or having caused to be done in relation to any tender or proposed tender for this contract, any action similar to those described above.

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

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

2F. SCHEDULE OF LOCAL LABOUR CONTENT

The Tenderer must complete the table below to reflect the labour force anticipated to be employed on this contract, including labour employed by sub-contractors.

The specified target value is **10%**.

Note: 100% of this labour content shall be from the LOCAL COMMUNITY where Local Community means those in the immediate vicinity of the project. The contractor's own skilled personnel will not be counted towards the said 100%.

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

Notes to Tenderer:
(1) Labour is defined as hourly paid personnel including the CLO.
(2) The penalty for non-compliance during the contract or for fraudulent disclosure is discussed in Section C3.3.6.5.

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

2G. BROAD BASED BLACK ECONOMIC EMPOWERMENT

The tenderer shall furnish Greater Tzaneen Municipality with the necessary information to enable them to evaluate the submission for B-BBEE Level Contribution. A Trust, Consortium or Joint Venture must submit a consolidated B-BBEE Status Level Verification Certificate for every separate bid.

It is a requirement to attach a Broad Based Black Empowerment Verification Certificate (issued by Registered Auditor approved by IRBA or a service provider accredited to SANAS) to the annexure document, indicating amongst others the following information:

- Company name
- Company Registration Number
- VAT Number
- Issue Date
- Expiry Date
- Level Contributor
- Name of Accredited Service Provider

NOTE: If the Service Provider is not accredited with SANAS or a Registered Auditor approved by IRBA, no points will be given for BBBEE level Contributor

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

2H. SURETY AND BANK DETAILS

SURETY DETAILS

The Surety we intend to provide is from _____

_____

Contact Person _____

Contact Telephone numbers _____

Type of Surety _____

BANK DETAILS

Bank Name _____

Account Number _____

Account Type _____

Contact Person _____

Tel No. _____

Fax No. _____

Address _____

Signed _____ Date _____

Name _____ Position _____

Tenderer _____

MBD 4

DECLARATION OF INTEREST

1. No bid will be accepted from persons in the service of the state[1].

2. Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in service of the state, it is required that the bidder or their authorised representative declare their position in relation to the evaluating/adjudicating authority.

3 In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

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

3.2 Identity Number: …….

3.3 Position occupied in the Company (director, trustee, hareholder[2]):……..

3.4 Company Registration Number: …….

3.5 Tax Reference Number:……

3.6 VAT Registration Number: ……

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

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

3.8.1 If yes, furnish particulars. ….……

[1]MSCM Regulations: "in the service of the state" means to be –
(a) a member of –
  (i) any municipal council;
  (ii) any provincial legislature; or
  (iii) the national Assembly or the national Council of provinces;

(b) a member of the board of directors of any municipal entity;
(c) an official of any municipality or municipal entity;
(d) an employee of any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No.1 of 1999);
(e) a member of the accounting authority of any national or provincial public entity; or
(f) an employee of Parliament or a provincial legislature.

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

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

3.9.1 If yes, furnish particulars.……..……..

……

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

3.10.1 If yes, furnish particulars.

……

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

3.11.1 If yes, furnish particulars

……

……

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

3.12.1 If yes, furnish particulars.

……

……

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

3.13.1 If yes, furnish particulars.

……

……

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

3.14.1 If yes, furnish particulars:

……

……

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

Full Name	Identity Number	State Employee Number

…….. ……..

Signature **Date**

…… ……

Capacity **Name of Bidder**

MBD 5

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

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

Are you by law required to prepare annual financial statements for auditing? ***YES / NO**

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

Do you have any outstanding undisputed commitments for municipal services towards any municipality for more than three months or any other service provider in respect of which payment is overdue for more than 30 days? ***YES / NO**

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

If yes, provide particulars.

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

***YES / NO**

If yes, furnish particulars

---

*Delete if not applicable

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

CERTIFICATION

I THE UNDERSIGNED (NAME) ---

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

---	---
Signature	Date
---	---
Position	Name of Bidder

MBD 6.1

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

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

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

1. GENERAL CONDITIONS

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

The **80/20** system for requirements with a Rand value of up to R50 million (all applicable taxes included) and

The **90/10** system for requirements with a Rand value above R50 million (all applicable taxes included).

1.2 (a) the value of this bid is estimated to exceed/not exceed R50 000 000 (all applicable taxes included) and therefore the ..... preference point system shall be applicable; or

(b) Either the 80/20 or 90/10 preference point system will be applicable to this tender (delete whichever is not applicable for this tender).

1.3 Points for this bid shall be awarded for:

(a) Price; and

(b) B-BBEE Status Level of Contribution.

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

	POINTS
Price	
B-BBEE STATUS LEVEL OF CONTRIBUTOR	
Total points for price and B-BBEE must not exceed	**100**

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

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

2. DEFINITIONS

(a) **"B-BBEE"** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;

(b) "**B-BBEE status level of contributor"** means the B-BBEE status received by a measured entity based on its overall performance using the relevant scorecard contained in the Codes of Good Practice on Black Economic Empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;

(c) **"bid"** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of services, works or goods, through price quotations, advertised competitive bidding processes or proposals;

(d) **"Broad-Based Black Economic Empowerment Act"** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);

(e) "**EME"** means an excepted micro enterprise in terms of a quote of good practice on Black Economic Empowerment issued in terms of section 9(1) of the broad Based Economic Empowerment Act.

(f) **"Functionality"** means the ability of a tenderer to provide goods or services in accordance with specifications as set out in the tender document.

(g) "**Price"** includes all applicable taxes less on unconditional discounts.

(h) "**Proof of BEE status level of contributor"** means

1) BBBEE status level certificate issued by an authorized body or person

2) Sworn Affidavit as prescribed by the BBBEE codes of codes practice.

3) an other requirements prescribed in terms of the BBBEE Act.

(I) **"QSE"** means a qualifying small business enterprise in terms of a code of good practice on Black Economic Empowerment issued in terms of section 9(1) of the Broad Black Economic Empowerment Act.

(j) **"rand value"** means the total estimated value of a contract in rand, calculated at the time of bid invitations, and includes all applicable taxes and excise duties;

3. POINTS AWARDED FOR PRICE

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

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

80/20 **90/10**

$$Ps = 80\left(1 - \frac{Pt - P\min}{P\min}\right) \text{ Or } Ps = 90\left(1 - \frac{Pt - P\min}{P\min}\right)$$

Where

Ps = Points scored for comparative price of bid under consideration

Pt = Comparative price of bid under consideration

Pmin = Comparative price of lowest acceptable bid

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

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

POINTS AWARDED FOR PRICE

THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

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

80/20 **or** **90/10**

$$Ps = 80\left(1 - \frac{Pt - P\min}{P\min}\right) \quad \text{or} \quad Ps = 90\left(1 - \frac{Pt - P\min}{P\min}\right)$$

Where

P_s = Points scored for comparative price of bid under consideration

P_t = Comparative price of bid under consideration

$P_{\min}$ = Comparative price of lowest acceptable bid

POINTS AWARDED FOR B-BBEE STATUS LEVEL OF CONTRIBUTION

In terms of Regulation 5 (2) and 6 (2) of the Preferential Procurement Regulations, preference points must be awarded to a bidder for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of points (90/10 system)	Number of points (80/20 system)
1	10	20
2	9	18
3	8	16
4	5	12
5	4	8
6	3	6
7	2	4
8	1	2
Non-compliant contributor	0	0

Bidders who qualify as EMEs in terms of the B-BBEE Act must submit a certificate issued by an Accounting Officer as contemplated in the CCA or a Verification Agency accredited by SANAS or a Registered Auditor. Registered auditors do not need to meet the prerequisite for IRBA's approval for the purpose of conducting verification and issuing EMEs with B-BBEE Status Level Certificates.

Bidders other than EMEs must submit their original and valid B-BBEE status level Bidders other than EMEs must submit their original and valid B-BBEE status level verification certificate or a certified copy thereof, substantiating their B-BBEE rating issued by a Registered Auditor approved by IRBA or a Verification Agency accredited by SANAS.

A trust, consortium or joint venture, will qualify for points for their B-BBEE status level as a legal entity, provided that the entity submits their B-BBEE status level certificate.

A trust, consortium or joint venture will qualify for points for their B-BBEE status level as an unincorporated entity, provided that the entity submits their consolidated B-BBEE scorecard as if they were a group structure and that such a consolidated B-BBEE scorecard is prepared for every separate bid.

Tertiary institutions and public entities will be required to submit their B-BBEE status level certificates in terms of the specialized scorecard contained in the B-BBEE Codes of Good Practice.

A person will not be awarded points for B-BBEE status level if it is indicated in the bid documents that such a bidder intends sub-contracting more than 25% of the value of the contract to any other enterprise that does not qualify for at least the points that such a bidder qualifies for, unless the intended subcontractor is an EME that has the capability and ability to execute the sub-contract.

A person awarded a contract may not sub-contract more than 25% of the value of the contract to any other enterprise that does not have an equal or higher B-BBEE status level than the person concerned, unless the contract is sub-contracted to an EME that has the capability and ability to

BID DECLARATION

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

B-BBEE STATUS LEVEL OF CONTRIBUTION CLAIMED IN TERMS OF PARAGRAPHS 1.3.1.2 AND 5.1

B-BBEE Status Level of Contribution: _____ = _____ (maximum of 10 or 20 points)

(Points claimed in respect of paragraph 7.1 must be in accordance with the table reflected in paragraph 5.1 and must be substantiated by means of a B-BBEE certificate issued by a Verification Agency accredited by SANAS or a Registered Auditor approved by IRBA or an Accounting Officer as contemplated in the CCA).

SUB-CONTRACTING

Will any portion of the contract be sub-contracted? YES / NO

(delete which is not applicable)

If yes, indicate:

what percentage of the contract will be subcontracted? _____ %

the name of the sub-contractor? _____

the B-BBEE status level of the sub-contractor? _____

whether the sub-contractor is an EME? YES / NO

(delete which is not applicable)

DECLARATION WITH REGARD TO COMPANY / FIRM

Name of firm ----------

VAT registration number ----------

Company registration number ----------

TYPE OF COMPANY/ FIRM

☐ Partnership/Joint Venture / Consortium

☐ One person business/sole propriety

☐ Close corporation

☐ Company

☐ (Pty) Limited

[TICK APPLICABLE BOX]

DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

COMPANY CLASSIFICATION

☐ Manufacturer

☐ Supplier

☐ Professional service provider

☐ Other service providers, e.g. transporter, etc.

[TICK APPLICABLE BOX]

MUNICIPAL INFORMATION

Municipality where business is situated ----------

Registered Account Number ----------

Stand Number ----------

TOTAL NUMBER OF YEARS THE COMPANY/FIRM HAS BEEN IN BUSINESS? ----------

I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contribution indicated in paragraph 7 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we acknowledge that:

The information furnished is true and correct;

The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form.

In the event of a contract being awarded as a result of points claimed as shown in paragraph 7, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;

If the B-BBEE status level of contribution has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have – disqualify the person from the bidding process; recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;

restrict the bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, from obtaining business from any organ of state for a period not exceeding 10 years, after the audi alteram partem (hear the other side) rule has been applied; and forward the matter for criminal prosecution

WITNESSES:

SIGNATURE(S) OF BIDDER(S)

DATE _____

ADDRESS _____

MBD 6.2

DECLARATION CERTIFICATE FOR LOCAL PRODUCTION AND CONTENT

This Municipal Bidding Document (MBD) 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 and the South African Bureau of Standards (SABS) approved technical specification number SATS 1286:201x.

General Conditions

Preferential Procurement Regulations, 2011 (Regulation 9.(1) and 9.(3) make provision for the promotion of local production and content.

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.

Regulation 9.(3) prescribes that where there is no designated sector, a specific bidding condition may be included, that only locally produced services, works or goods or locally manufactured goods with a stipulated minimum threshold for local production and content, will be considered.

Where necessary, for bids referred t o in paragraphs 1.2 and 1.3 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.

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.

The local content (LC) as a percentage of the bid price must be calculated in accordance with the SABS approved technical specification number SATS 1286: 201x as follows:

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

Where

x = imported content

y = bid price excluding value added tax (VAT)

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

A bid will be disqualified if:

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

Definitions

"bid" includes advertised competitive bids, written price quotations or proposals;

"bid price" price offered by the bidder, excluding value added tax (VAT);

"contract" means the agreement that results from the acceptance of a bid by an organ of state;

"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;

"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).

"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, 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;

"local content" means that portion of the bid price which is not included in the imported content, provided that local manufacture does take place;

"stipulated minimum threshold" means that portion of local production and content as determined by the Department of Trade and Industry; and

"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.

The stipulated minimum threshold(s) for local production and content for this bid is / are as follows:

Description of services, works or goods	Stipulated minimum threshold
----------	---------- %
----------	---------- %
----------	---------- %

Does any portion of the services, works or goods offered have any imported content? YES / NO

4.1 If yes, the rate(s) of exchange to be used in this bid to calculate the local content as prescribed in paragraph 1.6 of the general conditions must be the rate(s) published by the SARB for the specific currency at 12:00 on the date, one week (7 calendar days) prior to the closing date of the 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:

Currency	**Rates of exchange**
US Dollar	
Pound Sterling	
Euro	
Yen	
Other	

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

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

IN RESPECT OF BID No. _____

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

_____

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

I, the undersigned, _____ (full names),

do hereby declare, in my capacity as _____

Of _____

(name of bidder entity), the following:

(a) The facts contained herein are within my own personal knowledge.

(b) I have satisfied myself that the goods/services/works to be delivered in terms of the above-specified bid comply with the minimum local content requirements as specified in the bid, and as measured in terms of SATS 1286.

(c) The local content has been calculated using the formula given in clause 3 of SATS 1286, the rates of exchange indicated in paragraph 4.1 above and the following figures:

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

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

(d) I accept that the Procurement Authority / Municipality /Municipal Entity has the right to request that the local content be verified in terms of the requirements of SATS 1286.

(e) I understand that the awarding of the 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, may result in the Procurement Authority / Municipal / Municipal Entity imposing any or all of the remedies as provided for in Regulation 13 of the Preferential Procurement Regulations, 2011 promulgated under the Policy Framework Act (PPPFA), 2000 (Act No. 5 of 2000).

SIGNATURE ---------- **DATE:** ----------

WITNESS No. 1 ---------- **DATE:** ----------

WITNESS No. 2 ---------- **DATE:** ----------

MBD

CONTRACT FORM - RENDERING OF SERVICES

THIS FORM MUST BE FILLED IN DUPLICATE BY BOTH THE SERVICE PROVIDER (PART 1) AND THE PURCHASER (PART 2). BOTH FORMS MUST BE SIGNED IN THE ORIGINAL SO THAT THE SERVICE PROVIDER AND THE PURCHASER WOULD BE IN POSSESSION OF ORIGINALLY SIGNED CONTRACTS FOR THEIR RESPECTIVE RECORDS.

PART 1 (TO BE FILLED IN BY THE SERVICE PROVIDER)

1. I hereby undertake to render services described in the attached bidding documents to **Greater Tzaneen Municipality** in accordance with the requirements and task directives / proposals specifications stipulated in Bid Number…….. at the price/s quoted. My offer/s remains binding upon me and open for acceptance by the Purchaser during the validity period indicated and calculated from the closing date of the bid.
2. The following documents shall be deemed to form and be read and construed as part of this agreement:

(i) Bidding documents, *viz*
- Invitation to bid;
- Tax clearance certificate;
- Pricing schedule(s);
- Filled in task directive/proposal;
- Preference claims for Broad Based Black Economic Empowerment Status Level of Contribution in terms of the Preferential Procurement Regulations 2011;
- Declaration of interest;
- Declaration of Bidder's past SCM practices;
- Certificate of Independent Bid Determination;
- Special Conditions of Contract;

(ii) General Conditions of Contract; and
(iii) Other (specify)

3. I confirm that I have satisfied myself as to the correctness and validity of my bid; that the price(s) and rate(s) quoted cover all the services specified in the bidding documents; that the price(s) and rate(s) cover all my obligations and I accept that any mistakes regarding price(s) and rate(s) and calculations will be at my own risk.
4. I accept full responsibility for the proper execution and fulfilment of all obligations and conditions devolving on me under this agreement as the principal liable for the due fulfilment of this contract.
5. I declare that I have no participation in any collusive practices with any bidder or any other person regarding this or any other bid.
6. I confirm that I am duly authorised to sign this contract.

NAME (PRINT) …….
CAPACITY …….
SIGNATURE …….
NAME OF FIRM …….
DATE …….

WITNESSES
1 …….
2 …….
DATE: ……..

MBD 7.2

CONTRACT FORM - RENDERING OF SERVICES
PART 2 (TO BE FILLED IN BY THE PURCHASER)

1. I……. in my capacity as……..…… accept your bid under reference number ……dated……for the rendering of services indicated hereunder and/or further specified in the annexure(s).

2. An official order indicating service delivery instructions is forthcoming.

3. I undertake to make payment for the services rendered in accordance with the terms and conditions of the contract, within 30 (thirty) days after receipt of an invoice.

DESCRIPTION OF SERVICE	PRICE (ALL APPLICABLE TAXES INCLUDED)	COMPLETION DATE	B-BBEE STATUS LEVEL OF CONTRIBUTION	MINIMUM THRESHOLD FOR LOCAL PRODUCTION AND CONTENT (if applicable)

4. I confirm that I am duly authorized to sign this contract.

SIGNED AT …… ON ……..

NAME (PRINT) …….

SIGNATURE ……

OFFICIAL STAMP

WITNESSES
1 ……

2 ……

DATE: ……..

MBD 8

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

This Municipal Bidding Document must form part of all bids invited.

It serves as a declaration to be used by municipalities and municipal entities in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.

The bid of any bidder may be rejected if that bidder, or any of its directors have:

abused the municipality's / municipal entity's supply chain management system or committed any improper conduct in relation to such system;
been convicted for fraud or corruption during the past five years;
willfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past five years; or
been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).

In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

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

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

CERTIFICATION

I THE UNDERSIGNED (NAME) ----------

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

---------- ----------
Signature Date

---------- ----------
Position Name of Bidder

MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

1 This Municipal Bidding Document (MBD) must form part of all bids[1] invited.

2 Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).[2] Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.

3 Municipal Supply Regulation 38 (1) prescribes that a supply chain management policy must provide measures for the combating of abuse of the supply chain management system, and must enable the accounting officer, among others, to:

a. take all reasonable steps to prevent such abuse;

b. reject the bid of any bidder if that bidder or any of its directors has abused the supply chain management system of the municipality or municipal entity or has committed any improper conduct in relation to such system; and

c. cancel a contract awarded to a person if the person committed any corrupt or fraudulent act during the bidding process or the execution of the contract.

This MBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.
In order to give effect to the above, the attached Certificate of Bid Determination (MBD 9) must be completed and submitted with the bid:

[1] Includes price quotations, advertised competitive bids, limited bids and proposals.

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

MBD 9

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

(Bid Number and Description)

in response to the invitation for the bid made by:

(Name of Municipality / Municipal Entity)

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

I certify, on behalf of: ---------- that:

(Name of Bidder)

I have read and I understand the contents of this Certificate;
I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;
For the purposes of this Certificate and the accompanying bid, I understand that the word “competitor” shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:

(a) has been requested to submit a bid in response to this bid invitation;
(b) could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
(c) provides the same goods and services as the bidder and/or is in the same line of business as the bidder

MBD 9

The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium[3] will not be construed as collusive bidding.

In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:

Prices,

geographical area where product or service will be rendered (market allocation)

methods, factors or formulas used to calculate prices;

the intention or decision to submit or not to submit, a bid;

the submission of a bid which does not meet the specifications and conditions of the bid; or

bidding with the intention not to win the bid.

In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.

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

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

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

Signature	Date
Position	Name of Bidder

MUNICIPAL CLEARANCE CERTIFICATE

Bidders are to submit a valid Municipal Clearance Certificate from the Local Municipality where the Company and its Directors are based.

COMPANY PROFILE

Bidders are to submit a company profile

PROOF OF COMPANY REGISTRATION

Bidders are to attach proof of company registration

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

Bidders are to attach a valid Letter of Good Standing with the Workmen's Compensation Fund from the Department of Labour as per the Occupational Injuries and Diseases Act.

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

The tenderer is required to disclose, by also attaching documentary evidence to this form, all inspections, investigations and their outcomes conducted by the Department of Labour into the conduct of the tenderer at any time during the 36 months preceding the date of this tender.

Note to tenderer:

Discovery that the tenderer has failed to make proper disclosure may result in Greater Tzaneen Municipality terminating a contract that flows from this tender on the ground that it has been rendered invalid by the tenderer's misrepresentation.

COPIES OF COMPLETION CERTIFICATES

Bidders to attach copies of completion certificates of similar previous work done

Please ensure that the Completion Certificates are for the Projects Listed in the Table: "*List of similar Projects successfully completed in the past five (5) years"* in order to qualify for functionality points.

FINANCIAL STATEMENTS

Bidders to attach copies of three (3) years' audited financial statements

FORM IN TERMS OF THE FUNCTIONAL REQUIREMENTS

Bidders are required to complete the table below providing evidence that they have been involved in similar types of projects.

Copies of the Completion Certificates for similar previous work done must be attached in order to be scored for functionality.
Please ensure that the Completion Certificates attached are for the Projects listed in the Table: "*List of similar projects successfully completed in the past five (5) years"*

If the value of the projects completed is not provided, points can only be awarded for the category "*Up to 4 similar projects of any value"*

Where Joint Ventures are undertaken, Bidders are required to submit detailed documentation providing evidence that **each** company has been involved in similar types of projects

Where Joint Ventures are undertaken, Bidders are required to clearly define the roles and responsibilities of each member and are required to submit detailed documentation providing evidence that each member has sufficient experience in relation to their roles and responsibilities.

Failure of the Bidder to provide the relevant documentation would result in no points being allocated and could potentially result in the document being regarded as non-responsive

List of similar projects successfully completed in the past five (5) years:

EMPLOYER & DISTRICT	NATURE OF WORK	VALUE OF WORK	DURATION	COMPLETION DATE	EMPLOYER CONTACT NO.

C1 AGREEMENT AND CONTRACT DATA

C1.1 FORM OF OFFER AND ACCEPTANCE

Offer

The employer, identified in the acceptance signature block, has solicited offers to enter into a contract for the procurement of the **Roof Replacement at Greater Tzaneen Civic Centre**.

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

By the representative of the tenderer, deemed to be duly authorized, signing this part of this form of offer and acceptance, the tenderer offers to perform all of the obligations and liabilities of the contractor under the contract including compliance with all its terms and conditions according to their true intent and meaning for an amount to be determined in accordance with the conditions of contract identified in the contract data.

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

_____ Rand (in words);

R _____ (in figures) .

This offer may be accepted by the employer by signing the acceptance part of this form of offer and acceptance and returning one copy of this document to the tenderer before the end of the period of validity stated in the tender data, whereupon the tenderer becomes the party named as the contractor in the conditions of contract identified in the contract data.

Signature(s) _____ _____

Name(s) _____ _____

Capacity _____ _____

for the tenderer

Name and address of Organization:

_____

_____

Name and signature of witness:

Signature _____

Name _____ Date _____

Acceptance

By signing this part of this form of offer and acceptance, the employer identified below accepts the tenderer's offer. In consideration thereof, the employer shall pay the contractor the amount due in accordance with the conditions of contract identified in the contract data. Acceptance of the tenderer's offer shall form an agreement between the employer and the tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.

The terms of the contract, are contained in:

Part C1:	Agreements and contract data, (which includes this agreement)
Part C2:	Pricing data
Part C3:	Scope of work
Part C4:	Site information

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

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

The tenderer shall within two weeks after receiving a completed copy of this agreement, including the schedule of deviations (if any), contact the employer's agent (whose details are given in the contract data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the conditions of contract identified in the contract data. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this agreement.

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

Signature(s)	----------	----------
Name(s)	----------	----------
Capacity	----------	----------

Date

For the Employer

Greater Tzaneen Municipality
P.O Box 24
Tzaneen
0850

Name and signature of witness:

Signature _____

Name Date _____

Schedule of Deviations

Subject: _____

Details _____

_____

_____

_____

Subject: _____

Details _____

_____

_____

_____

Subject: _____

Details _____

_____

_____

_____

Subject: _____

Details _____

_____

ONLY TO BE COMPLETED AT ACCEPTANCE STAGE

By the duly authorised representatives signing this agreement, the employer and the tenderer agree to and accept the foregoing schedule of deviations as the only deviations from and amendments to the documents listed in the tender data and addenda thereto as listed in the tender schedules, as well as any confirmation, clarification or changes to the terms of the offer agreed by the tenderer and the employer during this process of offer and acceptance.

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

For the Tenderer:

Signature(s) _____ _____

Name(s) _____ _____

Capacity _____ _____

_____

(Insert name and address of organisation)

Signature and name of witness:

Signature _____

Name _____

ONLY TO BE COMPLETED AT ACCEPTANCE STAGE

For the Employer:

Signature(s) _____ _____

Name(s) _____ _____

Capacity _____ _____

(Name and address of organization) Greater Tzaneen Municipality
1 Agatha Street,
Tzaneen
0850

Signature and name of witness:

Signature _____

Name _____

C1.2 CONFIRMATION OF RECEIPT

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

The _____ (day) of _____ (month) 20 _____ (year)

At _____ (place).

ONLY TO BE COMPLETED AT ACCEPTANCE STAGE

For the Contractor:

Signature _____

Name _____

Capacity _____

Signature and name of witness:

Signature _____

Name _____

C1.3 PERFORMANCE GUARANTEE

The performance guarantee is to contain the wording of the pro-forma document JBCC Guarantee for Principal Building Agreement (May 2018). Copies of these conditions of contract may be obtained from JBCC contact number (010) 010 7588

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

WRITTEN AGREEMENT BETWEEN

The Greater Tzaneen Municipality

and

……
……
CONTRACTOR

AS ENVISAGED BY SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY ACT, NO 85 OF 1993, AS AMENDED.

I, …….. representing ……..

(***Insert first name and surname***) (***Insert Contractor Company Name***)

do hereby acknowledge that our company is an employer in its own right with duties as prescribed in the Occupational Health and Safety Act No. 85 of 1993, as amended and I agree to ensure that all work will be performed, machinery and plant used in accordance with the provisions of the said Act. I further more agree to comply with all other relevant legislation while providing a service to the **Greater Tzaneen Municipality.**

I acknowledge having received the necessary induction / training regarding the rules and regulations of the **Greater Tzaneen Municipality**. I will ensure that all our staff and subcontractors are properly informed and adhere to all the rules and regulations and relevant legislation while on the **Greater Tzaneen Municipality** premises. I will liaise with the person responsible, should I, for whatever reason, not be able to complete the task /project or perform in terms of this agreement.

I undertake to immediately report the following to the Municipality Safety Health & Environment Dept:-

i. Any accidents or incidences involving my staff or subcontractors whether considered minor or needing medical attention. These incidences/accidents shall be reported on an Annexure 1 Incident Report.
ii. Always inform the SHE Dept. of any existing and/or new projects that my staff or subcontractors will be undertaking in or on any **Greater Tzaneen Municipality**, Buildings and Premises.

My company is registered with the Compensation Commissioner for Occupational Injuries and Diseases as stipulated by the COID Act. My COIDA registration number is

……
(Insert registration number)

We/I also agree that the Contractor or Sub-contractor, by their signatures hereto, do

unreservedly and irrevocably indemnify the **Greater Tzaneen Municipality** and hold it harmless against all the clause demands, actions, clauses of actions and suits at law, which may be made or instituted against it for:

- Any death, injury or incident to the Contractor, Sub-contractor and /or their employees or any agent customer or visitor of the Contractor;
- Any damage caused to property of the Contractor, Sub-contractor, and/or their employees or any agent customer or visitor of the Contractor, including any loss of such property from whatsoever, while on the premises;
- Any claims resulting from non-compliance with legislation.

Signed on behalf of ……
Insert Contractor Company Name

Signature: ……

Date: **……..**

Witness (Full name): ……..

Signed on behalf of **Greater Tzaneen Municipality**

Signature: ……

Date: ……

Witness (Full name): ……..

C1.5 CONTRACT DATA

Part 1: Data provided by the Employer

1. CONDITIONS OF CONTRACT

The Principal Building Agreement (Edition 6.2) of May 2018 published by JBCC is applicable to this Contract.

The Principal Building Agreement shall be amended only by the Special Conditions of Contract included in this document.

C1.5.1 Contract Specific Data

The following contract specific data, referring to the Principal Building Agreement are applicable to this Contract.

Section 1: Data provided by the Employer in this document

Clause	
	The defects liability period is 12 months.
	The time for achieving Practical Completion is 6 months.
	The Principal Agent shall obtain specific approval from the Employer before executing any of his functions or duties according to the JBCC Principal Agreement Contract: 1.Approval of extension of time 2.Approval of additional costs 3.Approval of variation orders 4. Approval from GREATER TZANEEN MUNICIPALITY for the utilization of any contingencies
	The documentation required before commencement with Works are: • Health and Safety Plan • Initial programme and the associated cash flow, labour programme • Performance guarantee • Insurance • Contactor's key personnel CVs for the Engineer's approval. (NB Only personnel as submitted at tender stage)
	The time to submit the documentation required before commencement with works execution is 15 working days.

Clause	
	The non-working days are Saturdays and Sundays. The special non-working days are public holidays as will be confirmed by the Principal Agent by the second week of January of each year.
	The determination of disputes shall be by arbitration

THE JOINT BUILDING CONTRACTS COMMITTEE

JBCC

[PRINCIPAL BUILDING AGREEMENT with Organs of State Contract Data

Project	ROOF REPLACEMENT : GREATER TZANEEN CIVIC CENTRE
Employer	GREATER TZANEEN MUNICIPALITY
Contractor	N/A
Contract Date	04 March 2021
File Code	SSN 376

The Joint Building Contracts Committee® - NPC
Principal Building Agreement
Edition 6.2 – May 2018

JBCC®

The Joint Building Contracts Committee® NPC (JBCC®) is representative of building owners and developers, professional consultants and general and specialist contractors who contribute their knowledge and experience to the compilation of the JBCC® documents. The JBCC® documents portray the consensus view of the constituent members and are published in the interests of standardisation and good practice with an equitable distribution of contractual risk

For more information about the JBCC®, frequently asked questions, where documents may be purchased as well as training courses visit www.jbcc.co.za. The JBCC® does not sell directly to users but may be contacted at info@jbcc.co.za

Principal Building Agreement structure

The agreement clauses follow the project execution sequence. The documents aim to set out clear, balanced and enforceable procedures, rights and obligations which, when competently managed and administered, protect the employer, contractor and subcontractors alike. The following additional documents form part of the suite of contract agreements

- The JBCC® Principal Building Agreement - Contract Data that incorporates specific employer and contractor requirements;
- The JBCC® General Preliminaries that generally covers all aspects of preliminaries for most types of projects;
- The JBCC® Nominated/Selected Subcontract Agreement that replicates the JBCC® Principal Building Agreement with common clauses retaining the same numbering; and
- A comprehensive set of certificate forms and support documents for use in the administration of the agreement

Warning!

The JBCC® Principal Building Agreement Edition 6.2 has been coordinated with the JBCC® Nominated/Selected Subcontract Agreement Edition 6.2, the JBCC® General Preliminaries and the JBCC® certificate forms and support documents. Forms from previous editions are not compatible with the JBCC® Principal Building Agreement Edition 6.2

Persons entering into or preparing contracts using the JBCC® suite of contract agreements and support documents are warned of the dangers inherent in modifying any part of it

Experience has shown that changes drafted by others, including members of the building professions, often have unintended results that may be prejudicial to either, or both, parties

Disclaimer

While the JBCC® aims to ensure that its publications represent best practice, it does not accept or assume any liability or responsibility for any events or consequences which derive from the use of the JBCC® documents

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ROOF REPLACEMENT: GREATER TZANEEN CIVIC CENTRE - 08-March-2021

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The Joint Building Contracts Committee® - NPC

CONTRACT DATA

For use by ORGANS OF STATE and other PUBLIC SECTOR BODIES

Principal Building Agreement
Edition 6.2 - May 2018

JBCC®

The Joint Building Contracts Committee® NPC (JBCC®) is representative of building owners and developers, professional consultants and general and specialist contractors who contribute their knowledge and experience to the compilation of the JBCC® documents. The JBCC® documents portray the consensus view of the constituent members and are published in the interests of standardisation and good practice with an equitable distribution of contractual risk

Application of JBCC® agreements

The definitions contained in the JBCC® Principal Building Agreement apply to this document. A word or phrase in bold type in the text has the same meaning assigned to it in the definitions of such agreement. Where a word or phrase is not in bold type it has the meaning consistent with the context of its use

This contract data contains changes made to the JBCC® Principal Building Agreement to suit Organs of State and other Public Sector Bodies' requirements, as well as unique requirements applicable to the project and variables referred to in the JBCC® Principal Building Agreement and the JBCC® General Preliminaries. The information provided in this document is complete and accurate at the time of calling for tenders. Where additional information becomes available, all tenderers will be informed in writing. Reference to clause numbers in the JBCC® Principal Building Agreement are shown in [square brackets] in this contract data eg [3.2.1]. Spaces requiring information must be filled in, or marked as 'not applicable' but not left blank

Where the contractor is appointed, the contract documents comprise the completed and signed Form of Offer and Acceptance, the signed JBCC® Principal Building Agreement, this completed contract data, the priced document, drawings and other listed documents

Endorsement of JBCC® agreements

The JBCC® Edition 6.2 agreements have been endorsed by Construction Industry Development Board (CIDB) for use by Organs of State and other Public Sector Bodies

Warning!

The JBCC® Principal Building Agreement Edition 6.2 has been coordinated with the JBCC® Nominated/Selected Subcontract Agreement Edition 6.2, the JBCC® General Preliminaries and the JBCC® certificate forms and support documents. Forms from previous editions are not compatible with the JBCC® Principal Building Agreement Edition 6.2

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A PROJECT INFORMATION

A 1.0 **Works** [1.1]

Project name	ROOF REPLACEMENT: GREATER TZANEEN CIVIC CENTRE
Reference number	SSN 376
Works description	REMOVAL OF PART OF ROOF STRUCTURE, MODIFICATION AND NEW ROOF STRUCTURE, NEW ROOF COVERING, REINFORCED CONCRETE STRUCTURE, EXTERNAL FACADE, ELECTRICAL AND MECHANICAL WORKS.

A 2.0 **Site** [1.1]

Erf / stand number	169
Township / Suburb	TZANEEN
Site address	GREATER TZANEEN CIVIC CENTRE
Local authority	TZANEEN

A 3.0 **Employer** [1.1]

Official Name of Organ of State / Public Sector Body	GREATER TZANEEN MUNICIPALITY		
Business registration number			
VAT/GST number			
Country	SOUTH AFRICA		
Employer's representative: Name	SOMISA MATHEBULA		
E-mail		Telephone number	(015) 811-6300
Mobile number			072 137 2122
Postal address	somisa.mathebula@tzaneen.gov.za		
		Postal code	
Physical address			
		Postal code	

A 4.0 **Principal agent** [1.1]

Name	MSW PROJECT MANAGERS AND CONSULT ENGINEERS		
Legal entity of above	(PTY) LTD	Contact person WESLEY CH	IKWANYANGA
Practice number	2005/016465/07	Telephone number	(011) 990-7600
		Mobile number	071 608 1762
Country	RSA	E-mail wesley.chikwanyan	a@msw.za.com
Postal address	P.O. BOX 2486, RIVONIA		
		Postal code	2128
Physical address	BOX 12, PINEWOOD OFFICE PARK, 33 RILEY RD, WOODMEAD, SANDTON		
		Postal code	2191

ROOF REPLACEMENT: GREATER TZANEEN CIVIC CENTRE - 08-March-2021

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A 5.0 Agent [1.1; 6.2]

Discipline ARCHITECTS

Name	POLYGON ARCHITECTS		
Legal entity of above	CC	Contact person	HANNELIE SI IT
Practice number	2007/029872/23	Telephone number	(015) 307-3606
		Mobile number	082 782 7037
Country		E-mail	hannelie@polygon.c .za
Postal address	P.O. BOX 1935, TZANEEN		
		Postal code	0850
Physical address	21C PEACE STREET, TZANEEN		
		Postal code	0850

A 6.0 Agent [1.1; 6.2]

Discipline QUANTITY SURVEYORS

Name	BUILDCOST QUANTITY SURVEYORS		
Legal entity of above	CC	Contact person	GERRIT NAU TA
Practice number	1993/006665/23	Telephone number	(015) 307-6318
		Mobile number	082 855 7675
Country		E-mail	admin@ssnauta.co. za/gerrit@ssnauta.co.za
Postal address	P.O. BOX 3271, TZANEEN	Postal code	0850
Physical address	21B PEACE STREET, TZANEEN		
		Postal code	0850

A 7.0 Agent [1.1; 6.2]

Discipline

Name	MSW PROJECT MANAGERS AND CONSULT ENGINEERS		
Legal entity of above	(PTY) LTD	Contact person	JOHANE ND LOVU
Practice number	2005/016465/07	Telephone number	(011) 990-7600
		Mobile number	072 419 0736
Country		E-mail	johane.ndlovu@msv .za.com
Postal address	P.O. BOX 2486, RIVONIA		
		Postal code	2128
Physical address	BOX 12, PINEWOOD OFFICE PARK, 33 RILEY RD, WOODMEAD, SANDTON		
		Postal code	2191

A 8.0 Agent [1.1; 6.2]

Discipline ELECTRICAL ENGINEERS

Name	ANDERSON CONSULTING ENGINEERS		
Legal entity of above		Contact person	MARK ANDE RSON
Practice number		Telephone number	(011) 593-4470
		Mobile number	074 647 2931
Country	RSA	E-mail	mark.anderson@ac ng.co.za
Postal address			
		Postal code	
Physical address	150 BRYANSTON DR, OFFICE BLOCK 2, GROUND FLOOR, BRYANSTON		
		Postal code	2191

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A 9.0 Agent [1.1; 6.2]

Discipline	MECHANICAL ENGINEERS

Name	ARQUERO TECHNICAL SUPPORT (PTY) LTD		
Legal entity of above	(PTY) LTD	Contact person	NICHOLAS MUNYIKA
Practice number		Telephone number	(011) 704-2084
		Mobile number	083 298 7042
Country	RSA	E-mail	nicholas@arquero.c .za
Postal address			
		Postal code	
Physical address	WILLOWBROOK OFFICE PARK, 651 VAN HOOF STREET, RUIMSIG		
		Postal code	1724

A 10.0 Agent [1.1; 6.2]

Discipline	HEALTH & SAFETY

Name	MM CONSULTING		
Legal entity of above		Contact person	MARIUS MAR AIS
Practice number		Telephone number	(015) 307-6160
		Mobile number	083 556 1678
Country		E-mail	marais.safety@gma l.com
Postal address	P.O. BOX 1452, TZANEEN		
		Postal code	0850
Physical address	4 DENNE STREET, ARBORPARK, TZANEEN		
		Postal code	0850

A 11.0 Agent [1.1; 6.2]

Discipline	

Name			
Legal entity of above		Contact person	
Practice number		Telephone number	
		Mobile number	
Country		E-mail	
Postal address			
		Postal code	
Physical address			
		Postal code	

A 12.0 Agent [1.1; 6.2]

Discipline	

Name			
Legal entity of above		Contact person	
Practice number		Telephone number	
		Mobile number	
Country		E-mail	
Postal address			
		Postal code	
Physical address			
		Postal code	

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B CONTRACT INFORMATION

B 1.0 Definitions [1.1]

Bills of quantities: System/Method of measurement	STD. STYSTEM OF MEASURING - BUILDING WORKS

B 2.0 Law, regulations and notices [2.0]

Law applicable to the **works**, state country [2.1]	RSA

B 3.0 Offer and acceptance [3.0]

Currency applicable to this **agreement** [3.2]	South African Rands

B 4.0 Documents [5.0]

The original signed **agreement** is to be held by the **principal agent** [5.2], if not, indicate by whom	**Employer**
Number of copies of **construction information** issued to the **contractor** at no cost [5.6]	1

Documents comprising the **agreement**	Page numbers
The **JBCC**® Principal Building Agreement, Edition 6.2 May 2018	1 to 30
The **JBCC**® Principal Building Agreement - Contract Data for Organs of State and other Public Sector Bodies, Edition 6.2 May 2018	1 to 14
The **JBCC**® General Preliminaries for use with the **JBCC**® Principal Building Agreement, Edition 6.2 May 2018	1 to 7

Contract drawings – description	Number	Revision	Date
Roof elevation and overall key plan -POL-533-ROOF KEY_REV			
Second floor layout plan - POL-533-ROOF 101_REV			
Sections - POL-533-ROOF(A/B/F)			
Elevation A & Roof A -POL-533-ROOF A1_REV			
Elevation B & Roof B - POL-533-ROOF B1_REV			
Elevation C & Roof C -POL-533-ROOF C1_REV			
Elevation D & Roof D - POL-533-ROOF D1_REV			
Typical cross section -POL-533-ROOF A2_REV			
Structural Engineer:			
Roof Layout -MSW-1454-DWG-00-210-00			
Sections & Details - MSW-1454-DWG-00-211-00			
Sections & Details - SW-1454-DWG-00-212-00			
Electrical:			
Lighting and small power installation - ACE-1454-DWG-600/10T			
Mechanical:			

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B 5.0 Employer's agents [6.0]

Authority is delegated to the following **agents** to issue **contract instructions** and perform duties for specific aspects of the **works** [6.2]
REFER TO CLAUSE 6.0 BUT SUBJECT TO PAGE 104 OF THE MUNICIPALITY CONTRACT DATA.

Principal agent's and **agents**' interest or involvement in the **works** other than a professional interest [6.3]
NONE

B 6.0 Insurances [10.0]

Insurances by **employer**			Amount including **tax**	Deductible amount including **tax**
Yes/no?	No			
Contract works insurance:				
	New **works** [10.1.1] (**contract sum** or amount)			
or	**Works** with **practical completion** in **sections** [10.2] (**contract sum** or amount)			
or	**Works** with alterations and additions [10.3] (reinstatement value of existing structures with or including new **works**)			
	Direct contractors [10.1.1; 10.2] where applicable, to be included in the contract works insurance			
	Free issue [10.1.1; 10.2] where applicable, to be included in the contract works insurance			
	Escalation, professional fees and reinstatement costs if not included above			
Total of the above contract works insurance amount				
Supplementary insurance [10.1.2; 10.2]				
Public liability insurance [10.1.3; 10.2]				
Removal of lateral support insurance [10.1.4; 10.2]				
Other insurances [10.1.5]				
Yes/no?		If yes, description 1		
Yes/no?		If yes, description 2		

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and/or

Insurances by **contractor**			Amount including **tax**	Deductible amount including **tax**
Yes/no? Yes				
	New **works** [10.1.1] (**contract sum** or amount)		0	0
or	**Works** with **practical completion** in **sections** [10.2] (**contract sum** or amount)		0	0
or	**Works** with alterations and additions [10.3] (reinstatement value of existing structures with or including new **works)**		TENDER AMT + 20%	R5,000.00
	Direct contractors [10.1.1; 10.2] where applicable, to be included in the contract works insurance		0	
	Free issue [10.1.1; 10.2] where applicable, to be included in the contract works insurance		0	
	Escalation, professional fees and reinstatement costs if not included above		25% of Tender Amount	
Total of the above contract works insurance amount			0	
Supplementary insurance [10.1.2]			TENDER AMT + 20%	0
Public liability insurance [10.1.3]			R10,000,000.0	0
Removal of lateral support insurance [10.1.4]			0	0
Other insurances [10.1.5]: Refer B17.0			0	0
Yes/no?	NO	If yes, description 1	0	0
Hi Risk Insurance [10.1.5.1]				
Yes/no?	No	If yes, description 2	0	0

B 7.0 Obligations of the employer [12.1]

Existing premises will be in use and occupied [12.1.2]		Yes/no?	Yes
If yes, description	THE CIVIC CENTRE MUST REMAIN FULLY OPERATIONAL AND ACCESSABLE TO THE PUBLIC		
Restriction of working hours [12.1.2]		Yes/no?	Yes
If yes, description	06:00 TO 18:00		
Natural features and known services to be preserved by the **contractor** [12.1.3]		Yes/no?	Yes
If yes, description	ALL VEGETATION		
Restrictions to the **site** or areas that the **contractor** may not occupy [12.1.4]		Yes/no?	Yes
If yes, description	THE CONTRACTOR WILL BE LIMITED TO THE AREA OF THIS BUILDING OPERATIONS AND THE REST WILL BE OUT OF BOUNDS. SEE ATTACHED SKETCH FOR TEMPORARY OFFICE		
Supply of **free issue** [12.1.10]		Yes/no?	No
If yes, description			

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B 8.0 Nominated subcontractors [14.0]

Yes/no?	No	If yes, description of specialisation

Specialisation 1	
Specialisation 2	
Specialisation 3	
Specialisation 4	
Specialisation 5	

B 9.0 Selected subcontractors [15.0]

Yes/no?	Yes	If yes, description of specialisation

Specialisation 1	Refer to the Provisional Amounts in the Bills of Quantities
Specialisation 2	
Specialisation 3	
Specialisation 4	
Specialisation 5	

B 10.0 Direct contractors [16.0]

Yes/no?	No	If yes, description of extent of work

Extent of work [12.1.11]	
Extent of work [12.1.11]	
Extent of work [12.1.11]	
Extent of work [12.1.11]	
Extent of work [12.1.11]	

B 11.0 Description of sections [20.1]

Section 1	WESTERN WING AS PER ATTACHED SKETCH
Section 2	EASTERN WING AS PER ATTACHED SKETCH
Section 3	NOT APPLICABLE
Section 4	NOT APPLICABLE
Section 5	NOT APPLICABLE
Section 6	NOT APPLICABLE
Section	Remainder of the **works**

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B 12.0 Possession of site [12.1.5], practical completion [19.0; 20.0] and penalty [24.0]

Practical completion for the **works** as a whole	Intended date of possession of the **site** Refer B17.0 [12.1.5; 12.2.22]	Period for inspection by the **principal agent** [19.3]	The date for **practical completion** shall be the period as indicated below from the date of possession of the **site** by the **contractor** [12.2.7; 24.1]	**Penalty** for late completion [24.1]
		working days	Period in months	Penalty amount per **calendar day** (excl. **tax**)
		N/A	N/A	N/A

or where **sections** are applicable

Practical completion of a **section** of the **works**	Intended date of possession of a **section** Refer B17.0 [12.1.5; 12.2.22]	Period for inspection by the **principal agent** [19.3]	The date for **practical completion** shall be the period as indicated below from the date of possession of the **site** by the **contractor** [12.2.7; 24.1]	**Penalty** for late completion [24.1]
		working days	Period in months	Penalty amount per **calendar day** (excl. **tax**)
Section 1		5	3	R3,100.00
Section 2		5	3	R3,100.00
Section 3				
Section 4				
Section 5				
Section 6				
Section 7				
Section 8				
Remainder of the **works**				

Criteria to achieve **practical completion** not covered in the definition of **practical completion**
NONE

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B 13.0 Defects liability period [21.0]

Extended defects liability period: Refer B17.0 [21.13]	Yes/no? Yes
If yes, description of applicable elements	13.1 Whole project 13.2 13.3 13.4 13.5 13.6

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B 14.0 Payment [25.0]

Date of month for issue of regular **payment certificates** [25.2]	ELEVENTH DAY OF THE MONTH		
Contract price adjustment / Cost fluctuations [25.3.4; 26.9.5]	Yes/no?	No	
If yes, method to calculate	NOT APPLICABLE		
Employer shall pay the **contractor** within: [25.10]	Twenty-one (21) **calendar days**		

B 15.0 Dispute resolution [30.0]

Adjudication [30.6.1; 30.10] Name of nominating body	Association of arbitrators of South Africa
Applicable rules for adjudication [30.6.2]	By Agreement between Parties
Arbitration [30.7.4; 30.10] If Yes, name of nominating body * If No, then dispute will be referred to litigation	Yes/no? * Yes Association of arbitrators of South Africa
Applicable rules for arbitration [30.7.5]	By Agreement between Parties

B 16.0 JBCC® General Preliminaries - selections

Provisional bills of quantities [P2.2]		Yes/no?	No	
Availability of construction information - is the construction information complete? [P2.3]		Yes/no?	Yes	
Previous work - dimensional accuracy - details of previous contract(s) [P3.1]	WHOLE BUILDING			
Previous work - **defects** - details of previous contract(s) [P3.2]	WHOLE BUILDING			
Inspection of adjoining properties - details [P3.3]	NOT APPLICABLE			
Handover of **site** in stages - specific requirements [P4.1]	YES			
Enclosure of the **works** - specific requirements [P4.2]	SEE ATTACHED PAGE			
Geotechnical and other investigations - specific requirements [P4.3]	NOT DONE			
Existing premises occupied - details [P4.5]	WHOLE BUILDING WILL BE FULLY OCCUPIED AND OPERATIONAL			
Services - known - specific requirements [P4.6]				
Water [P8.1]	By **contractor**	Yes/no?	No	
	By **employer**	Yes/no?	No	
	By **employer** – metered	Yes/no?	Yes	
Electricity [P8.2]	By **contractor**	Yes/no?	No	
	By **employer**	Yes/no?	No	
	By **employer** – metered	Yes/no?	Yes	
Ablution and welfare facilities [P8.3]	By **contractor**	Yes/no?	Yes	
	By **employer**	Yes/no?	No	

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Communication facilities - specific requirements [P8.4]	CELL PHONES
Protection of the **works - s**pecific requirements [P11.1]	PROTECT THE WORKS TO LEAVE A DUST-FREE AND SAFE BUILDING.
Protection / isolation of existing **works** and **works** occupied in **sections -** specific requirements [P11.2]	YES
Disturbance - specific requirements [P11.5]	AS LITTLE NOISE AS POSSIBLE.
Environmental disturbance - specific requirements [P11.6]	NONE

B 17.0 Changes made to JBCC® documentation

Reference may be made to other documents forming part of this **agreement**

1.1 Definitions

AGREEMENT: The completed Form of Offer and Acceptance, the completed **JBCC®** Principal Building Agreement and **JBCC® contract data for organs of state and other public sector bodies**, the **contract drawings**, the **priced document** and any other documents reduced to writing and signed by the authorised representatives of the **parties**

CONSTRUCTION PERIOD: The period commencing on the date of possession of the **site** by the **contractor** and ending on the date of **practical completion**

CONTRACT DATA FOR ORGANS OF STATE AND OTHER PUBLIC SECTOR BODIES: The document listing the Organs of State and other Public Sector Bodies' requirements and the project specific information

INTEREST: The interest rates applicable on this contract, whether specifically indicated in the relevant clauses or not, will be the rate as determined by the Minister of Finance from time to time, in terms of section 80(1)(b) of the Public Finance Management Act, 1999 (Act No 1 of 1999), calculated as simple interest, in respect of debts owing to the State, and will be the rate as determined by the Minister of Justice and Constitutional Development from time to time, in terms of section 1(2) of the Prescribed Rate of Interest Act, 1975 (Act No 55 of 1975), calculated as simple interest, in respect of debts owing by the State

PRINCIPAL AGENT: The person or entity appointed by the **employer** and named in the **contract data for organs of state and other public sector bodies.** In the event of a **principal agent** not being appointed, then all the duties and obligations of a **principal agent** as detailed in the **agreement** shall be fulfilled by the employer's representative as named in the **contract data for organs of state and other public sector bodies**

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3.0 Offer and Acceptance

Amend 3.3 to read as follows:

This **agreement** shall come into force on the date as stated on the Form of Offer and Acceptance and continue to be of force and effect until the end of the **latent defects** liability period [22.0] notwithstanding termination [29.0] or the certification of **final completion** [21.0] and final payment [25.0]

6.0 Employer's Agents

Add the following as 6.7:

In terms of the clauses listed hereunder, the **employer** has retained its authority and has not given a mandate to the **principal agent**. The **employer** shall sign all documents in relation to clauses 4.2, 14.1.2, 14.1.4, 14.4.1, 14.6, 23.1, 23.2, 23.3, 23.7, 23.8, 26.1, 26.7, 26.12 and 28.4

9.0 Indemnities

9.2.7: Add the following to the end of the first sentence: "…. due to no fault of the **contractor**"

10.0 Insurances

10.2 : Not applicable

Principal building agreement Clause 10: Insurance in the joint names of the parties to be taken out and paid for by the contractor.

11.0 Securities

Amend 11.10 to read as follows:

There shall be no lien or right of retention held by any **contractor** in respect of the **works** executed on **site**

12.0 Obligations of the Parties

Amend 12.1.5 to read as follows:

Give possession of the **site** to the **contractor** within ten (10) **working days** of the **contractor** complying with the terms of 12.2.22

12.2.2: Not applicable

Add the following as 12.2.22:

Within fifteen (15) **working days** of the date of the **agreement** submit to the **principal agent** an acceptable health and safety plan, required in terms of the Occupational Health and Safety Act, 1993 (Act No 85 of 1993)

19.0 Practical Completion

19.5: Delete the words "subject to the **contractor**'s lien or right of continuing possession of the **works** where this has not been waived"

21.0 Defects Liability Period and Final Completion

Add the following as 21.13:

The ninety (90) **calendar days** defects liability period for the **works** [21.1] is replaced with a period of three hundred and sixty-five (365) **calendar days** in respect of the listed applicable elements

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25.0 Payment

25.7.5: Not applicable

25.10: Delete the words “and/or **compensatory interest**”

25.10: Replace 14 calendar days with 21 calendar days

25.14.2: Not applicable

27.0 Recovery of Expense and/or Loss

27.1.5: Not applicable

29.0 Termination

Add the following after 29.1.3:

or where …

29.1.4 : The **contractor**’s estate has been sequestrated, liquidated or surrendered in terms of the insolvency laws in force within the Republic of South Africa

29.1.5 : The **contractor** has engaged in corrupt or fraudulent practices in competing for or in executing the contract

General Note:

REFER TO MUNICIPAL CONTRACT DATA ,PAGE 104 AND 105

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C TENDERER'S SELECTIONS

C 1.0 Securities [11.0]

Guarantee for construction: Select Option A or B ☐

Option A	**Guarantee for construction** (variable) by **contractor** [11.1.1]

Option B	**Guarantee for construction** (fixed) by **contractor** [11.1.2]

Guarantee for payment by **employer** [11.5.1; 11.10]	Not applicable

Advance payment, subject to a **guarantee for advance payment** [11.2.2; 11.3]	Not applicable

C 2.0 Contractor's annual holiday periods during the construction period

Year 1 **contractor**'s annual holiday period	start date		end date	
Year 2 **contractor**'s annual holiday period	start date		end date	
Year 3 **contractor**'s annual holiday period	start date		end date	

C 3.0 Payment of preliminaries [25.0]

Contractor's selection

Select Option A or B ☐

Where the **contractor** does not select an option, Option A shall apply

Payment methods

Option A	The **preliminaries** shall be paid in accordance with an amount prorated to the value of the **works** executed in the same ratio as the amount of the **preliminaries** to the **contract sum**, which **contract sum** shall exclude the amount of **preliminaries**. Contingency sum(s) and any provision for cost fluctuations shall be excluded for the calculation of the aforesaid ratio

Option B	The **preliminaries** shall be paid in accordance with an amount agreed by the **principal agent** and the **contractor** in terms of the **priced document** to identify an initial establishment charge, a time-related charge and a final dis-establishment charge. Payment of the time-related charge shall be assessed by the **principal agent** and adjusted from time to time as may be necessary to take into account the rate of progress of the **works**

Lump sum contract

Where the amount of **preliminaries** is not provided it shall be taken as 7.5% (seven and a half per cent) of the **contract sum**, excluding contingency sum(s) and any provision for cost fluctuations

C 4.0 Adjustment of preliminaries [26.9.4]

Contractor's selection

Select Option A or B ☐

Where the **contractor** does not select an option, Option A shall apply

Provision of particulars

The **contractor** shall provide the particulars for the purpose of the adjustment of **preliminaries** in terms of his selection. Where completion in **sections** is required, the **contractor** shall provide an apportionment of **preliminaries** per **section**

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Option A	An allocation of the **preliminaries** amounts into Fixed, Value-related and Time-related amounts as defined for adjustment method Option A below, within fifteen (15) **working days** of the date of acceptance of the tender

Option B	A detailed breakdown of the **preliminaries** amounts within fifteen (15) **working days** of possession of the **site**. Such breakdown shall include, inter alia, the administrative and supervisory staff, the use of **construction equipment**, establishment and dis-establishment charges, insurances and guarantees, all in terms of the **programme**

Adjustment methods

The amount of **preliminaries** shall be adjusted to take account of the effect which changes in time and/or value have on **preliminaries**. Such adjustment shall be based on the particulars provided by the **contractor** for this purpose in terms of Options A or B, shall preclude any further adjustment of the amount of **preliminaries** and shall apply notwithstanding the actual employment of resources by the **contractor** in the execution of the **works**

Option A	The **preliminaries** shall be adjusted in accordance with the allocation of **preliminaries** amounts provided by the **contractor,** apportioned to **sections** where completion in **sections** is required Fixed - An amount which shall not be varied Value-related - An amount varied in proportion to the **contract value** as compared to the **contract sum**. Both the **contract sum** and the **contract value** shall exclude the amount of **preliminaries**, contingency sum(s) and any provision for cost fluctuations Time-related - An amount varied in proportion to the number of **calendar days** extension to the date of **practical completion** to which the **contractor** is entitled with an adjustment of the **contract value** [23.2; 23.3] as compared to the number of **calendar days** in the initial **construction period** [26.9.4]

Option B	The adjustment of **preliminaries** shall be based on the number of **calendar days** extension to the date of **practical completion** to which the **contractor** is entitled with an adjustment of the **contract value** [23.2; 23.3] as compared to the number of **calendar days** in the initial **construction period** [26.9.4] The adjustment shall take into account the resources as set out in the detailed breakdown of the **preliminaries** for the period of construction during which the delay occurred

Failure to provide particulars within the period stated

Option A	Where the allocation of **preliminaries** amounts for Option A is not provided, the following allocation of **preliminaries** amounts shall apply: Fixed - Ten per cent (10%) Value-related - Fifteen per cent (15%) Time-related - Seventy-five per cent (75%) Where the apportionment of the **preliminaries** per **section** is not provided, the categorised amounts shall be prorated to the cost of each **section** within the **contract sum** as determined by the **principal agent**

Option B	Where the detailed breakdown of **preliminaries** amounts for Option B is not provided, Option A shall apply

Lump sum contract

Where the amount of **preliminaries** is not provided it shall be taken as 7.5% (seven and a half per cent) of the **contract sum**, excluding contingency sum(s) and any provision for cost fluctuations

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C2: PRICING DATA

C2.1 PRICING INSTRUCTIONS

1. The Principal Building Agreement, the Contract Data, the Specifications (including the Project Specifications) and the Drawings shall be read in conjunction with the Bill of Quantities.

2. The Bill comprises items covering the Contractor's profit and costs of general liabilities and of the construction of Temporary and Permanent Works.

3. Where any item is not relevant to this specific contract, such item is marked N/A (signifying "not applicable")

   The adjustment of the preliminaries each item priced is to be allocated to one or more of the three categories by insertion of "F", "V", "T" as the case may be against the price in the "rate" column immediately preceding the "amount" column, where "F" denotes a fixed amount (amount not varied), "V" denotes an amount variable in proportion to value and "T" denotes an amount variable in proportion to time.

4. MASSES AND MEASURING UNITS

   These shall be in accordance with the Measuring Units and National Measuring Standards Act No. 76 of 1973 and amendments thereto.

   The pages of each of these documents are numbered consecutively and before the Bidder submits his bid he should check the number of pages, and if any are found missing or duplicated, or the figures or writing indistinct, or the documents contain any obvious error, he should apply to the Principal Agent AT ONCE and have same rectified as no liability whatsoever will be admitted by the Administration in respect of errors in Tender due to the foregoing.

5. PRICES FOR VARIATIONS

   Where prices or quotations for variations are submitted by the Contractor during the currency of the Contract, it is to be clearly understood that these are for the purpose of consideration by the Principal Agent and that there is no assumption of acceptance. The Contractor will be notified of acceptance of prices or quotations either by insertion of the amount on the variation order or by written intimation.

6. SCALE

   The scale to which the Drawings are made is only to be made use of when no figured dimensions are given either on the Drawings or in the tender documents and the figured dimensions are always to be followed though they may not coincide with the scale of the Drawings, but dimensions where possible are to be taken from the buildings.

7. PROVISIONAL ITEMS

   All items described as "Provisional" shall be used as directed by the Employer and measured and valued or paid for.

   No work for which "Provisional" items are allowed shall be commenced without written instructions from the Principal Agent.

8. TIMELY ORDERING OF MATERIALS

The Contractor is warned to place all orders for materials or special articles as early as possible, as he will be held solely responsible for any delay in the delivery of such goods. Nevertheless, this tender is conditional upon no liability being attached to the Contractor if delivery of materials is rendered impossible by reason of any act of the Government.

9. ELECTRICAL LIGHTING, POWER AND WATER REQUIREMENTS

The Contractor shall provide any artificial lighting which may be necessary or required for the proper execution of the works, and provide electric power and water required by all Sub-Contractors, Nominated Sub-Contractors and Sub-Contractors appointed directly by the Employer.

The Contractor shall give all notices and pay all fees in connection with temporary electrical and water connections and shall connect temporary Electrical and Water meters for and pay for all current and water consumed.

Bidders are advised that the permanent light fittings and water points of any kind installed in the Works are not to be used to provide temporary lighting and supplement water requirements for construction purposes.

10. STANDARD SYSTEM OF MEASUREMENT WHERE BILLS OF QUANTITIES FORM PART OF THE BID DOCUMENTS

The work executed under this Contract has been measured in accordance with the; seventh (7th) edition of the “Standard System of Measuring Building Work including all amendments unless descriptions of items indicate a deviation and it shall be understood that the system of measurement which is herein adopted is the only system of measurement which will be recognised in connection with this contract. Any contradictions to this system of measurement contained in the “Model Preambles for Trades 2008” shall be disregarded (unless same have been accommodated in the system of measurement) but applicable rates shall be included for all requirements stated and not measured separately in compliance with this system.

11. PRICING OF ROCK EXCAVATIONS

It is a condition of this bid that should the bidder elect to price the Rock Excavation included in this bid, the rates must be market related and should be identically priced for the same classification of excavations and not vary for similar billed items in the different sections.

12. BILLS OF QUANTITIES/LUMP SUM DOCUMENT

The Bills of Quantities document forms part of and must be read and priced in conjunction with all the other documents forming part of the contract documents, the Standard Conditions of Bid, Conditions of Contract, Standard Preambles to all Trades, Specifications, Drawings and all other relevant documentation.

13. VALUE ADDED TAX

The bid price must include for Value Added Tax (VAT). All rates, provisional sums, etc. in the Bills of Quantities must however be net (exclusive of VAT) with VAT calculated and added to the Total Value thereof in the Final Summary.

Item No		Quantity	Rate	Amount

SECTION NO. 1

BILL NO. 1
PRELIMINARIES

BUILDING AGREEMENT AND PRELIMINARIES

The **JBCC** Principal Building Agreement (Edition 6.2 - May 2018) prepared by the Joint Building Contracts Committee shall be the applicable building agreement, amended as hereinafter described

The **JBCC** Principal Building Agreement **contract data** form an integral part of this **agreement**

The **JBCC** General Preliminaries (May 2018) published by the Joint Building Contracts Committee for use with the **JBCC** Principal Building Agreement (Edition 6.2 - May 2018) shall be deemed to be incorporated in these **bills of quantities**, amended as hereinafter described

The **contractor** is deemed to have referred to the abovementioned documents for the full intent and meaning of each clause

The clauses in the abovementioned documents are hereinafter referred to by clause number and heading only

Where any item is not relevant to this **agreement** such item is marked N/A signifying "not applicable"

Where standard clauses or alternatives are not entirely applicable to this **agreement** such amendments, modifications, corrections or supplements as will apply are given under each relevant clause heading and such amendments, modifications, corrections or supplements shall take precedence notwithstanding anything to the contrary contained in the abovementioned documents

Carried to Collection R

PREAMBLES FOR TRADES

The General Preambles for Trades 2017 published by the Association of South African Quantity Surveyors shall be deemed to be incorporated in these **bills of quantities** and no claims arising from brevity of description of items fully described in the said General Preambles will be entertained

Supplementary preambles and/or specifications are incorporated in these **bills of quantities** to satisfy the requirements of this project. Such supplementary preambles and/or specifications shall take precedence over the provisions of the General Preambles

The **contractor's** prices for all items throughout these **bills of quantities** shall take account of and include where applicable for all of the obligations, requirements and specifications given in the General Preambles and in any supplementary preambles and/or specifications

STRUCTURE OF THIS PRELIMINARIES BILL

Section A : A recital of the headings of the individual clauses in the aforementioned **JBCC** Principal Building Agreement

Section B : A recital of the headings of the individual clauses in the aforementioned **JBCC** General Preliminaries

Section C : Any special clauses to meet the particular circumstances of the project

PRICING OF PRELIMINARIES

Should the **contractor** select Option A in the **contract data** for the adjustment of **preliminaries**, the amounts entered against the relevant items in these **preliminaries** are to be divided into one or more of the three categories provided namely fixed (F), value related (V) and time related (T)

SECTION A: PRINCIPAL BUILDING AGREEMENT

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Interpretation (A1-A7)

1 Clause 1.0 - Definitions and interpretation

Pricing of bills of quantities

The **contractor** is to allow opposite each item for all costs in connection therewith. All prices to include, unless otherwise stated, for all materials, fabrication, conveyance and delivery, unloading, storing, unpacking, hoisting, labour, setting, fitting and fixing in position, cutting and waste (except where to be measured in accordance with the standard system of measurement), patterns, models and templates, plant, temporary works, returning of packaging, duties, taxes (other than Value Added Tax), imposts, establishment charges, overheads, profit and all other obligations arising out of this **agreement**. Value Added Tax (VAT) is to be separately stated on the summary page of these **bills of quantities**

Items left unpriced will be deemed to be covered in prices against other items throughout these **bills of quantities** and no claim for any extras arising out of the **contractor's** omission to price any item will be entertained

Prices for all **construction equipment**, temporary works, services and other items shall include for the supply, maintenance, operating cost and subsequent removal and making good as necessary

Abbreviated descriptions

The items in these **bills of quantities** utilise abbreviated descriptions. It is the intention that the abbreviated descriptions be fully described when read with the applicable measuring system and the relevant preambles and/or specifications. However, should the full intent and meaning of any description not be clear, the **contractor** shall, before submission of his tender, call for a written directive from the **principal agent**, failing which it shall be assumed that the **contractor** has allowed in his pricing for materials and workmanship in terms of international best practice

Legal status of contractor

Carried to Collection R

	If the **contractor** constitutes a joint venture, consortium or other unincorporated grouping of two or more persons then: 1. These persons are deemed to be jointly and severally liable to the **employer** for the performance of this **agreement** 2. These persons shall notify the **employer** of their leader who has assigned authority to bind the **contractor** and each of these persons 3. The **contractor** shall not alter its composition or legal status without the prior written consent of the **employer** F:..... V:..... T:.....	Item		
2	Clause 2.0 - **Law**, regulations and **notices**			
3	Clause 3.0 - Offer and acceptance F:..... V:..... T:.....	Item		
4	Clause 4.0 - Cession and assignment F:..... V:..... T:.....	Item		
5	Clause 5.0 - Documents **Value Added Tax** Provision is made in the summary page of these **bills of quantities** for the inclusion of Value Added Tax (VAT) **Priced document as specification** Clause 5.4 is deemed to be deleted The **principal agent** shall decide which portion of the **priced document** may be used as a specification of **materials and goods** or methods, if any.			
6	Clause 6.0 - **Employer's agents**			
	Carried to Collection		R	

Delegated authority

The authority of the **principal agent** to issue **contract instructions** [17.1] and perform duties for specific aspects of the **works** is delegated to **agents** as follows [6.2]. This does not preclude the **principal agent** from issuing such **contract instructions**:

1. Architect

1.1 Duties [6.2] :

The architect is responsible for the architectural design, functional design and quality inspection of the **works**

1.2 **Contract instructions** [6.2; 17.1] :

1.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the **agreement** other than in the **JBCC** Principal Building Agreement

1.2.2 Alteration to design, standards or quantity of the **works** provided that such **contract instructions** shall not substantially change the scope of the **works**

1.2.3 The **site** [13.0]

1.2.4 Compliance with the **law**, regulations and bylaws [2.1]

1.2.5 Provision and testing of samples of **materials and goods** and/or of finishes and assemblies of elements of the **works**

1.2.6 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]

1.2.7 Removal or re-execution of work

1.2.8 Removal or substitution of any **materials and goods**

1.2.9 Protection of the **works**

1.2.10 Making good physical loss and repairing damage to the **works** [23.2.2]

Carried to Collection R

1.2.11 Rectification of **defects** [21.2]

1.2.12 A **list for practical completion** specifying outstanding or defective work to be rectified to achieve **practical completion**, a **list for completion** and a **list for final completion** specifying outstanding or defective work to be rectified to achieve **final completion**

1.2.13 Expenditure of **budgetary allowances**, **prime cost amounts** and **provisional sums**

1.2.14 Appointment of a **subcontractor** [14.0; 15.0]

1.2.15 Work by **direct contractors** [16.0]

1.2.16 On suspension or termination, protection of the **works**, removal of **construction equipment** and surplus **materials and goods** [29.0]

2. Quantity surveyor

2.1 Duties [6.2] :

The quantity surveyor is responsible for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions of the **works**

2.2 **Contract instructions** [6.2; 17.1] :

2.2.1 No **contract instructions** delegated to the quantity surveyor

3. Civil and structural engineer

3.1 Duties [6.2] :

The civil and structural engineer is responsible for all aspects of civil and structural engineering design and quality inspection of the **works**

3.2 **Contract instructions** [6.2; 17.1] :

3.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the **agreement** other than in the **JBCC** Principal Building Agreement

Carried to Collection R

3.2.2 Alteration to design, standards or quantity of the **works** provided that such **contract instructions** shall not substantially change the scope of the **works**

3.2.3 The **site** [13.0]

3.2.4 Compliance with the **law**, regulations and bylaws [2.1]

3.2.5 Provision and testing of samples of **materials and goods** and/or of finishes and assemblies of elements of the **works**

3.2.6 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]

3.2.7 Removal or re-execution of work

3.2.8 Removal or substitution of any **materials and goods**

3.2.9 Protection of the **works**

3.2.10 Making good physical loss and repairing damage to the **works** [23.2.2]

3.2.11 Rectification of **defects** [21.2]

3.2.12 A **list for practical completion** specifying outstanding or defective work to be rectified to achieve **practical completion**, a **list for completion** and a **list for final completion** specifying outstanding or defective work to be rectified to achieve **final completion**

3.2.13 Expenditure of **budgetary allowances**, **prime cost amounts** and **provisional sums**

4. Electrical engineer

Carried to Collection R

The electrical engineer is responsible for all aspects of electrical engineering design and quality inspection and, where appointed by the **employer** for quantity surveying services in respect of the electrical installations, for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions. Without derogating from the generality thereof the electrical engineer will perform the following specific functions and duties in respect of the electrical engineering aspects of the **works**:

4.1 Give opinion of aspects of the **works** which are not in accordance with the **agreement**

4.2 Supply the specified number of drawings

4.3 Issue instructions if **bills of quantities** is to be used as a specification

4.4 Receive and accept design documentation undertaken by **subcontractors**

4.5 Issue instructions to the **contractor** regarding:

4.5.1 Alteration to design, quality or quantity of the **works** provided that such instructions shall not substantially change the scope of the **works**

4.5.2 Removal of any **materials and goods** from the **site** and the substitution of any **materials and goods** therefor

4.5.3 Removal or re-execution of any work

4.5.4 Opening up of work for inspection

4.5.5 Testing of work and **materials and goods**

4.5.6 Protection of the **works**

4.5.7 Making good physical loss and repairing damage to the **works**

4.5.8 Compliance with Acts of Parliament, regulations and bylaws

4.6 Provide the **contractor** with the necessary information to set out the **works**

Carried to Collection R

4.7 Acceptance of design by **subcontractors**

4.8 Inspect the **works** from time to time and give the **contractor** interpretation and guidance on the standard and state of completion required for **practical completion**

4.9 Inspect the **works** for **practical completion**

4.10 Issue the **list for practical completion** and re-inspect upon request of the **contractor**

4.11 Inspect the **works** at the end of the **defects** liability period

4.12 Issue the **list for final completion** and re-inspect upon request of the **contractor**

4.13 Quantity surveying functions and duties:

4.13.1 Consult with the **contractor** and/or **subcontractors** in correction of rates or errors and discrepancies

4.13.2 Supply the specified number of unpriced **bills of quantities**

4.13.3 Deal with amounts paid by the **contractor** and/or **subcontractors** to authorities having jurisdiction over the **works**

4.13.4 Measure and value the making good of physical loss or damage

4.13.5 Issue instructions to the **contractor** regarding:

1 Rectification of discrepancies and errors in description or omissions in **contract documents**

2 Furnishing proof of payment to **subcontractors**

3 **Budgetary allowances** and work executed by the **contractor** and/or **subcontractors**

4 Contingency and other monetary provisions included in the **contract sum**

Carried to Collection R

4.13.6 Prepare nominated and/or selected subcontract tender documents

4.13.7 Valuation of payment claims for **payment certificates**

4.13.8 Determine the value of adjustments to the **contract value**

4.13.9 Receive from the **contractor** and/or **subcontractors** details of expense and loss claims and assess such claims

4.13.10 Prepare the **final account** and submit to the **contractor** and/or **subcontractors** as the case may be

5. Mechanical engineer

5.1 Duties [6.2] :

The mechanical engineer is responsible for all aspects of mechanical engineering design and quality inspection of the **works** and, where appointed by the **employer** for quantity surveying services in respect of the mechanical installations, for all measurements, valuations, financial assessments and all other quantity surveying and cost control functions

5.2 **Contract instructions** [6.2; 17.1] :

5.2.1 Rectification of discrepancies, errors in description or quantity or omission of items in the **agreement** other than in the **JBCC** Principal Building Agreement

5.2.2 Alteration to design, standards or quantity of the **works** provided that such **contract instructions** shall not substantially change the scope of the **works**

5.2.3 Compliance with the **law**, regulations and bylaws [2.1]

5.2.4 Provision and testing of samples of **materials and goods** and/or of finishes and assemblies of elements of the **works**

Carried to Collection R

5.2.5 Opening up of work for inspection, removal or re-execution [23.2.4; 26.4.2]

5.2.6 Removal or re-execution of work

5.2.7 Removal or substitution of any **materials and goods**

5.2.8 Protection of the **works**

5.2.9 Making good physical loss and repairing damage to the **works** [23.2.2]

5.2.10 Rectification of **defects** [21.2]

5.2.11 A **list for practical completion** specifying outstanding or defective work to be rectified to achieve **practical completion**, a **list for completion** and a **list for final completion** specifying outstanding or defective work to be rectified to achieve **final completion**

5.2.12 Expenditure of **budgetary allowances**, **prime cost amounts** and **provisional sums**

6. Health and safety consultant

6.1 Duties [6.2] :

The health and safety consultant is responsible for all aspects of health and safety of the **works**. Without derogating from the generality thereof, the health and safety consultant will perform the following specific functions and duties in respect of the health and safety aspects of the **works**. He shall:

6.1.1 Act as the **employer's agent** in terms of the Construction Regulations issued in terms of the Occupational Health and Safety Act,1993 as amended

6.1.2 Prepare and update the health and safety specification for the **works**

6.1.3 Agree with the **contractor** the health and safety plan for the **works**

Carried to Collection R

	6.1.4 Carry out regular audits to ensure adherence to the safety plan and compliance with the act and regulations			
	6.1.5 Stop the execution of the **works** where the agreed specification or plan is not adhered to			
	F:..... V:..... T:.....	Item		
7	Clause 7.0 - Design responsibility			
	F:..... V:..... T:.....	Item		
	Insurances and securities (A8-A11)			
8	Clause 8.0 - **Works** risk			
	F:..... V:..... T:.....	Item		
9	Clause 9.0 - Indemnities			
	F:..... V:..... T:.....	Item		
10	Clause 10.0 - Insurances			
	F:..... V:..... T:.....	Item		
11	Clause 11.0 - **Securities**			
	Extension of waiver of lien			
	The **contractor** shall ensure that a waiver of lien is included in all subcontracts and that the **works** executed on the **site** are kept free of all liens and other encumbrances at all times [11.10]			
	F:..... V:..... T:.....	Item		
	Execution (A12 - A17)			
12	Clause 12.0 - Obligations of the **parties**	Item		
	Office accommodation			
	The **employer** shall provide			
	Carried to Collection		R	

	Notice board The **contractor** shall erect in a position approved by the **principal agent**, maintain and remove on **practical completion** a notice board recommended by the South African Institute of Architects and as approved by the **principal agent** listing the names and logos of the **employer**, the **contractor** and the professional consultants. No subcontractor or supplier notice boards may be erected unless permission is granted by the **principal agent** for such notice boards to be erected [12.2.18] **Statutory and other notices** The **contractor** shall submit and/or comply with all statutory and other notices that may be required by any local or other authority in order not to cause any delay to the commencement of the **works** by the **contractor**. The **contractor** shall pay all deposits or fees in this regard It is, however, specifically recorded that the **employer** shall be responsible for the timeous approval of building plans by any local or other authorities and the payment of any fees or charges related thereto F:..... V:..... T:.....			
13	Clause 13.0 - Setting out F:..... V:..... T:.....	Item		
14	Clause 14.0 - Nominated **subcontractors** F:..... V:..... T:.....	N/A		
15	Clause 15.0 - Selected **subcontractors** F:..... V:..... T:.....	Item		
	Carried to Collection		R	

16	Clause 16.0 - **Direct contractors** **Attendance on direct contractors** In respect of **direct contractors** the **contractor** shall: 1. Designate an area for the **direct contractor** to establish a temporary office and workshop and storage of equipment and materials 2. Allow the use of personnel welfare facilities, where provided 3. Provide water, lighting and single phase electric power to a position within 50m of the place where the direct contract work is to be carried out, other than fuel or power for commissioning of any installation 4. Permit the **direct contractor** to use erected scaffolding, hoisting facilities, etc provided by the **contractor**, in common with others having the like right, while it remains erected on the **site** [16.1] F:..... V:..... T:.....	N/A		
17	Clause 17.0 - **Contract instructions** **Site instructions** Instructions issued on **site** are to be recorded in a site instruction book which is to be supplied and maintained on **site** by the **contractor** F:..... V:..... T:.....	Item		
	<u>Completion (A18 - A24)</u>			
18	Clause 18.0 - Interim completion	N/A		
19	Clause 19.0 - **Practical completion** F:..... V:..... T:.....	Item		
	Carried to Collection		R	

20	Clause 20.0 - Completion in **sections** F:..... V:..... T:.....	Item		
21	Clause 21.0 - **Defects** liability period and **final completion** F:..... V:..... T:.....	Item		
22	Clause 22.0 - **Latent defects** liability period F:..... V:..... T:.....	Item		
23	Clause 23.0 - Revision of the date for **practical completion** **Substitution of materials and goods** The removal or substitution of any **materials and goods** which do not conform to the specification or the **contract drawings** shall not constitute grounds for the extension of the **construction period** nor for the adjustment of the **contract value** [17.1.8; 23.1 & 2] Clause 23.1.7 to be added as follows : The contractor is to allow for 10 working days of delays caused by adverse weather conditions or other unforeseen events Clause 23.4.2 must be changed by changing twenty (20) to two (2) working days F:..... V:..... T:.....	Item		
24	Clause 24.0 - **Penalty** for late or non-completion F:..... V:..... T:.....	Item		
	<u>Payment (A25 - A27)</u>			
25	Clause 25.0 - Payment			
	Carried to Collection		R	

Prices submitted

Where prices are submitted by the **contractor** or **subcontractor** during the progress of the **works** in respect of **contract instructions** or in regard to a claim under the terms of this **agreement** and notwithstanding the fact that such prices may be used in an interim **payment certificate**, there is to be no presumption of acceptance. Should the **principal agent** wish to accept any such prices prior to the issue of the **certificate of final completion**, it shall be in writing

F:..... V:.....
T:..... Item

26 Clause 26.0 - Adjustment of the **contract value** and **final account**

Fluctuations in costs

All fluctuations in costs, with the exception of fluctuations in the rate of Value Added Tax, shall be for the account of the **contractor** [26.9.5]

Cost of claims

All costs incurred by the **contractor** in the preparation of claims shall be borne by the **contractor**. This provision shall not preclude an adjudicator or an arbitrator appointed in terms of this **agreement** [30.6 & 7] from making a determination on costs

Claims from subcontractors

The **contractor** shall review, assess and adjudicate any claims received by him from any **subcontractor** and thereafter submit same to the **principal agent** with a recommendation in order to assist the **principal agent** in adjudicating the claim [26.6]

F:..... V:.....
T:..... Item

27 Clause 27.0 - Recovery of expense and/or loss

F:..... V:.....
T:..... Item

Carried to Collection R

Suspension and termination (A28 - A29)

28 Clause 28.0 - Suspension by the **contractor**

F:..... V:.....
T:..... Item

29 Clause 29.0 - Termination

F:..... V:.....
T:..... Item

Dispute resolution (A30)

30 Clause 30.0 - Dispute resolution

F:..... V:.....
T:..... Item

31 **Agreement**

The required information of the **parties** and the amount of the **contract sum** shall be inserted in the **agreement** for signature of the **agreement** by the **parties**

F:..... V:.....
T:..... Item

32 **Contract data**

Tenderer's selections

Before submission of his tender the **contractor** is to complete the tenderer's selections in the **contract data**

F:..... V:.....
T:..... Item

SECTION B: GENERAL PRELIMINARIES

Definitions and interpretation (B1)

33 Clause 1.1 - Definitions

F:..... V:.....
T:..... Item

Carried to Collection R

34	Clause 1.2 - Interpretation F:..... V:..... T:.....	Item		
	Documents (B2)			
35	Clause 2.1 - Checking of documents F:..... V:..... T:.....	Item		
36	Clause 2.2 - Provisional **bills of quantities** F:..... V:..... T:.....	N/A		
37	Clause 2.3 - Availability of **construction information** F:..... V:..... T:.....	Item		
38	Clause 2.4 - Ordering of **materials and goods** F:..... V:..... T:.....	Item		
	Previous work and adjoining properties (B3)			
39	Clause 3.1 - Previous work - dimensional accuracy F:..... V:..... T:.....	Item		
40	Clause 3.2 - Previous work - **defects** F:..... V:..... T:.....	Item		
41	Clause 3.3 - Inspection of adjoining properties F:..... V:..... T:.....	N/A		
	Carried to Collection		R	

	The site (B4)			
42	Clause 4.1 - Handover of **site** in stages F:..... V:..... T:.....	Item		
43	Clause 4.2 - Enclosure of the **works** F:..... V:..... T:.....	Item		
44	Clause 4.3 - Geotechnical and other investigations F:..... V:..... T:.....	N/A		
45	Clause 4.4 - Encroachments F:..... V:..... T:.....	Item		
46	Clause 4.5 - Existing premises occupied F:..... V:..... T:.....	Item		
47	Clause 4.6 - Services - known F:..... V:..... T:.....	Item		
	Management of contract (B5)			
48	Clause 5.1 - Management of the **works** F:..... V:..... T:.....	Item		
49	Clause 5.2 - Progress meetings F:..... V:..... T:.....	Item		
50	Clause 5.3 - Technical meetings F:..... V:..... T:.....	Item		
	Carried to Collection		R	

	Samples, shop drawings and manufacturer's instructions (B6)			
51	Clause 6.1 - Samples of materials F:..... V:..... T:.....	Item		
52	Clause 6.2 - Workmanship samples F:..... V:..... T:.....	Item		
53	Clause 6.3 - Shop drawings F:..... V:..... T:.....	Item		
54	Clause 6.4 - Compliance with manufacturer's instructions F:..... V:..... T:.....	Item		
	Deposits and fees (B7)			
55	Clause 7.1 - Deposits and fees F:..... V:..... T:.....	Item		
	Temporary services (B8)			
56	Clause 8.1 - Water F:..... V:..... T:.....	Item		
57	Clause 8.2 - Electricity Electricity supply shall not exceed 60A 3Phase F:..... V:..... T:.....	Item		
58	Clause 8.3 - Ablution and welfare facilities F:..... V:..... T:.....	Item		
	Carried to Collection		R	

59	Clause 8.4 - Communication facilities F:..... V:..... T:.....	Item		
	Prime cost amounts (B9)			
60	Clause 9.1 - Responsibility for **prime cost amounts** F:..... V:..... T:.....	Item		
	Attendance on subcontractors (B10)			
61	Clause 10.1 - General attendance F:..... V:..... T:.....	Item		
62	Clause 10.2 - Special attendance F:..... V:..... T:.....	Item		
	General (B11)			
63	Clause 11.1 - Protection of the **works** F:..... V:..... T:.....	Item		
64	Clause 11.2 - Protection/isolation of existing **works** and **works** occupied in **sections** F:..... V:..... T:.....	Item		
65	Clause 11.3 - Security of the **works** F:..... V:..... T:.....	Item		
	Carried to Collection		R	

66	Clause 11.4 - Notice before covering work F:..... V:..... T:.....	Item			
67	Clause 11.5 - Disturbance **Disturbance** All work is to be carried out in such a manner as to cause no unacceptable or unreasonable dust, noise, vibrations, nuisance, inconvenience, annoyance and the like to the public, others, other properties and traffic in so far as they exceed the permissible limitations set by government legislation or by the local authority. Any delays, stoppages and the like arising from or in order to comply with the above will not constitute grounds for an adjustment to the **construction period** or **contract value** whatsoever F:..... V:.....T:.....	Item			
68	Clause 11.6 - Environmental disturbance **Controlling all forms of pollution** The **contractor** shall be responsible for and take all precautions in controlling by whatever means necessary all forms of pollution emanating from the **site** during the **construction period** due inter alia to noise, artificial light, wind-blown sand, dust, deposits of mud, etc The **contractor** is to ensure that all roads which border the **site** and are used by the **contractor** during the execution of the **works** are kept clean and free of any dirt or debris caused by the execution of the **works** **Environmental management plan** The **employer** has prepared an environmental management plan (EMP) (refer to Annexure B for a copy of the relevant plan). The **contractor** shall price opposite this item for compliance with all the requirements of such EMP F:..... V:.....T:.....	Item			
	Carried to Collection			R	

69	Clause 11.7 - **Works** cleaning and clearing F:..... V:..... T:.....	Item		
70	Clause 11.8 - Vermin F:..... V:..... T:.....	Item		
71	Clause 11.9 - Overhand work F:..... V:..... T:.....	Item		
72	Clause 11.10 - Tenant installations F:..... V:..... T:.....	Item		
73	Clause 11.11 - Advertising F:..... V:..... T:.....	Item		
	SECTION C: SPECIFIC PRELIMINARIES			
74	Warranties for materials and workmanship Where warranties for materials and/or workmanship are called for, the **contractor** shall obtain a written warranty, addressed to the **employer**, from the entity supplying the materials and/or executing the work and shall deliver same to the **principal agent** on **final completion** of the contract The warranty shall state that workmanship, materials and installation are warranted for a specific period from the date of **practical completion** and that any **defects** that may arise during the specified period shall be made good at the expense of the entity supplying the materials and/or doing the work, upon written **notice** to do so The warranty will not be enforced if the work is damaged by **defects** in the execution of the **works**, in which case the responsibility for replacement shall rest entirely with the **contractor** F:..... V:..... T:.....	Item		
	Carried to Collection		R	

75	Overtime Should overtime be required to be worked for any reason whatsoever, the cost of such overtime is to be borne by the **contractor** unless the **principal agent** has specifically authorised, prior to execution thereof, that costs for such overtime are to be borne by the **employer** F:..... V:.....T:.....	Item		
76	Cooperation of the **contractor** for cost management It is specifically agreed that the **contractor** accepts the obligation of assisting the **principal agent** in implementing proper cost management. The **contractor** will be advised by the **principal agent** of all cost management procedures which will be implemented to ensure that the **contract value** does not exceed the budget F:..... V:.....T:.....	Item		
77	Overloading The **contractor** shall take all necessary steps to ensure that no damage occurs due to overloading of any portion of the **works** or temporary works eg scaffolding, etc. The **contractor** shall submit details of his proposed loading, storage, plant erection, etc to the **principal agent** for approval prior to proceeding with such loading, storing or erecting and shall comply with and pay for the **principal agent's** requirements in connection with the provision of temporary support work, etc. Any damage caused to the **works** by overloading shall be made good by the **contractor** at his sole expense F:..... V:.....T:.....	Item		
78	Propping of floors below The **contractor** is advised that propping of floors below may be required where parts of the concrete slab are broken out. The location of these areas and any necessary propping shall be approved by the **principal agent** and the cost thereof shall be borne by the **contractor** F:..... V:.....T:.....	Item		
	Carried to Collection		R	

79	Testing of flat roof waterproofing for watertightness Flat roof waterproof areas shall be flooded and kept "ponded" for at least forty eight (48) hours as a test to ensure the watertightness of the waterproofing and before any further construction work is carried out above the waterproofing F:..... V:.....T:.....	Item		
	Health and safety Without limiting the generality of the provisions of clause 2.0, the **contractor's** attention is drawn to the provisions of the Construction Regulations issued in terms of the Occupational Health and Safety Act, 1993 as amended. It is specifically stated that the **employer** shall prepare a documented health and safety specification for the **works** (refer to Annexure A for a copy of the relevant specification) and that the **employer** shall ensure that the **contractor** has made provision for the cost of health and safety measures during the execution of the **works**. The **contractor** shall price opposite this item for compliance with the act and the regulations and the provisions of the aforementioned health and safety specification [2.1] The **contractor** shall: 1. Comply with the health and safety specification for the **works** 2. Prepare and agree with the health and safety consultant the health and safety plan for the **works** 3. Cooperate with the health and safety consultant in all respects 4. Manage the compliance of all subcontractors with the regulations and with the health and safety plan and specification 5. Conform to the conditions contained in the **employer's** health and safety specification F:..... V:..... T:.....	Item		
	Carried to Collection		R	

Section No. 1
Bill No. 1
Preliminaries
REPLACEMENT OF GTM CIVIC CENTRE ROOF

80	Advertising rights The **employer** may elect to contract with advertising agencies for the erection of advertising hoardings, banners, wraps or the like for the duration of the contract. The **contractor** shall not prevent such an arrangement and will assist in the facilitation of same. The position and type of advertising structure to be agreed with the **principal agent** so as not to hinder the **contractor** in meeting his obligations under this **agreement** F:..... V:.....T:.....	Item		
81	Confidentiality The **contractor** undertakes to maintain in confidence any and all information regarding this project and shall obtain appropriate similar undertakings from all **subcontractors** and suppliers. Such information shall not be used in any way except in connection with the execution of the **works** No information regarding this project shall be published or disclosed without the prior written consent of the **employer** F:..... V:.....T:.....	Item		
82	Media releases All rights of publication of articles in the media, together with any advertising relating thereto or in any way connected with this project, shall vest with the **employer** The **contractor** together with his **subcontractors** shall not, without the prior written consent of the **employer**, cause any statement or advertisement connected with this project to be printed, screened or aired by the media F:..... V:.....T:.....	Item		
83	Community Liason Officer (CLO) The **contractor** must employ and pay a CLO R6500.00 per month for the duration of the construction period. F:..... V:.....T:.....	Item		
	Carried to Collection		R	

84	Covid19 Compliance Requirements: The **Contractor** shall take all necessary precautions to comply with all available measures to make sure the spread of the virus is controlled by including provision of equipment and PPE such as providing masks, sanitisers,thermometers, screening of employees for any symptoms etc. all in accordance with the OHS amended ACT and Baseline/guidline to be provided by the client			
	F:..... V:.....T:.....	Item		
	SUMMARY OF CATEGORIES			
	Category : Fixed R.....			
	Category : Value R.....			
	Category : Time R.....			
	Carried to Collection		R	

Section No. 1

Bill No. 1

Preliminaries

COLLECTION

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Section No. 1

Bill No. 1

Preliminaries

COLLECTION

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SECTION NO. 2

BILL NO. 1

ALTERATIONS (PROVISIONAL)

PREAMBLES

All tenderers are advised to study the General Preambles for Trades 2017 published by the Association of South African Quantity Surveyors, which are applicable on this project

SUPPLEMENTARY PREAMBLES

Nature of the works

Tenderers are advised to visit the site and to satisfy themselves as to the nature and extent of the work to be done and provide in their tenders for any items not specifically mentioned which they may deem necessary for the proper completion of the work. Tenderers are advised that the existing buildings will not be in occupation during the progress of the work but that nearby new buildings will be in occupation and due allowance must be made for the work being carried out at such times and in such a manner as will least interfere with the routine of the occupants and as may be directed by the architect.

Dimensions

The contractor is advised to take all dimensions affecting the existing buildings on the site, as he will be held solely responsible for all new work being of the correct sizes.

Carried to Collection R

Electrical wires, pipes, etc.

Special care is to be taken not to interfere unnecessarily with any electric light, power or telephone wires and fittings that may be met with, and notice is to be given to the architect when any disconnections or removal of wires, etc. are necessary, and the Contractor is to effect every facility to the Electricians carrying out this workAny water supply pipes or other piping that may be met with and found necessary to disconnect or cut, are to be effectively stopped off and any new connections that may be necessary are to be made with proper fittings and to the satisfaction of the architect, to whom due notice must be given of any alterations to the existing services.

Protection

In taking down and removing existing work the utmost care is to be observed to avoid any structural or other damage to the remaining portions of the buildings. The Contractor must also protect all work not removed such as walls, floors, doors, windows or other joinery, loose and fixed fittings and electrical appliances, etc. from damage during the progress of the work and provide all necessary materials for so doing. The Contractor will be held solely responsible for any damage to persons or property and for the safety of the structure throughout the whole of this Contract and must make good at his own expense any damage that may occur.

Material, etc.

The materials to be used and work to be done are to be similar in all respects to that described for new work insofar as they concur. All work in making good is to be properly jointed to the existing.

Note:

All materials are to become the property of the **Employer**.The **Employer** will indicate which materials he wants to keep and the **Contractor** must allow to remove the rest.

Carried to Collection R

	DEMOLITIONS AND ALTERATIONS				
1	Allow for making good in all trades to existing work where damaged or disturbed or defaced in any way through alterations, with all necessary new materials to match existing and leave complete and perfect in every respect		Item		
	REMOVAL OF EXISTING WORK				
	Breaking up and removing reinforced concrete, including cutting off and removing reinforcement				
2	Walls	m3	8		
	Breaking down and removing brickwork etc				
3	One brick walls	m2	567		
	Taking out and removing doors, windows, etc, including thresholds, sills, etc and building up openings in brick walls, including making good cement plaster on both side(s) (making good paintwork elsewhere)				
4	Timber double door and steel frame exceeding 2,5m² and not exceeding 5m² from one brick wall	No	1		
	Taking down and removing roofs, floors, panelling, ceilings, partitions, etc.				
5	Concealed fix roof sheeting and timber purlins	m2	1,046		
6	Flat roof 7.403 x 4.795m of timber trusses and purlins, corrugated sheet steel covering, ceilings and cornices, eaves soffit covering, fascias, barge boards, gutters and rainwater pipes (Over Toilets)	No	1		
7	Flat roof 12,06 x 7,79m of timber trusses and purlins, corrugated sheet steel covering, ceilings and cornices, eaves soffit covering, fascias, barge boards, gutters and rainwater pipes (IT Offices)	No	1		
	Taking out and removing sanitary fittings, tanks, geysers, etc, including disconnecting from pipes, traps, etc and making good floor and wall finishes (making good tiling and paintwork elsewhere)				
8	HVAC air handling unit size 5230 x 2645 mm fixed in roof	No	1		
	Carried to Collection			R	

	Carefully take out paving and set aside for later re-use.				
9	60mm Precast concrete block paving	m2	55		
	Taking down and removing rainwater goods				
10	660 x 1100mm Fascia box gutter of steel frame and fibre cement cladding and sheet metal flashing fixed to brickwall	m	220		
11	150 x 100mm Steel rainwater pipe	m	50		
	Hacking up/off and removing granolithic, screeds, plaster, etc from concrete or brickwork and preparing surfaces for new screed, plaster, tile finishes, etc				
12	50mm Screed with waterproofing from concrete roof	m2	166		

Carried to Collection R

Section No. 2

Bill No. 1

Alterations

COLLECTION

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Item No		Quantity	Rate	Amount

BILL NO 2

FOUNDATIONS (PROVISIONAL)

PREAMBLES

All tenderers are advised to study the General Preambles for Trades 2017 published by the Association of South African Quantity Surveyors, which are applicable on this project

SUPPLEMENTARY PREAMBLES

Nature of ground

The nature of the ground is assumed to be gravel, therefore "earth", but possibly interspersed with "soft rock" or "hard rock"

Subterranean water

No subterranean water is expected

The water table is expected to be deeper than 3m below natural ground level. The removal of subterranean water is given separately

Carting away of excavated material

Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site

Filling and layer work materials

References such as "G1", "G2", etc and "C1", "C2", etc in descriptions of filling and layer work materials refer to corresponding references in the document "Guidelines for Road Construction Materials. TRH 14 : 1985" compiled by the Committee of State Road Authorities and the properties set out therein for each kind shall be applicable to the respective materials described hereinafter

Carried to Collection R

	Testing				
	Prices for filling are to include for all necessary density and other tests				
	EXCAVATION, FILLING, ETC OTHER THAN BULK				
	EXCAVATIONS, ETC "LI"				
	Excavation in compacted building platform not exceeding 2m deep				
1	Holes "Labour Intensive"	m3	22		
	Extra over trench and hole excavations in compated building platform for excavation in				
2	Soft rock "Labour Intensive"	m3	1		
3	Hard rock "Labour Intensive"	m3	1		
	Extra over all excavations for carting away				
4	Surplus material from excavations and/or stock piles on site, to a dumping site to be located by the contractor "Labour Intensive"	m3	10		
	Risk of collapse of excavations				
5	Sides of trench and hole excavations not exceeding 1,5m deep "Labour Intensive"	m2	65		
	Keeping excavations free of water				
6	Keeping excavations free of all water other than subterranean water "Labour Intensive"		Item		
	De-watering of seepage water and water from other sub-soil sources				
7	Allow for pumping (one pump)	Hrs	8.00		
	FILLING ETC				
	Carried to Collection			R	

	Earth filling obtained from the excavations and/or prescribed stock piles on site compacted to 90% Mod AASHTO density				
8	Backfilling to trenches, holes, etc "Labour Intensive"	m3	11		
	Earth filling supplied by the Contractor, compacted to 90% Mod AASHTO density				
9	Under floors, steps, pavings, etc	m3	11		
	Compaction of surfaces				
10	Compaction of ground surface under pavings,aprons, etc including scarifying for a depth of 150mm, breaking down oversize material, adding suitable material where necessary and compacting to 90% Mod AASHTO density	m2	55		
	SOIL POISONING				
	Soil insecticide in accordance with SANS 5859				
11	To bottoms and sides of trenches, etc	m2	65		
	Carried to Collection			R	

Section No. 2

Bill No. 2

Foundations

COLLECTION

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Item No		Quantity	Rate	Amount

BILL NO 3

CONCRETE, FORMWORK AND REINFORCEMENT

PREAMBLES

All tenderers are advised to study the General Preambles for Trades 2017 published by the Association of South African Quantity Surveyors, which are applicable on this project

SUPPLEMENTARY PREAMBLES

Cost of tests

The costs of making, storing and testing of concrete test cubes as required under clause 7 "Tests" of SABS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests to the principal agent. The testing shall be undertaken by an independent firm or institution nominated by the contractor to the approval of the principal agent. (Test cubes are measured separately)

Formwork

Descriptions of formwork shall be deemed to include use and waste only (except where described as "left in" or "permanent"), for fitting together in the required forms, wedging, plumbing and fixing to true angles and surfaces as necessary to ensure easy release during stripping and for reconditioning as necessary before re-use

The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damage and shall remain in position until the newly constructed work is able to support itself

Formwork to soffits of solid slabs etc shall be deemed to be to slabs not exceeding 250mm thick unless otherwise described

Carried to Collection R

	Formwork to soffits of slabs, beams, etc shall be deemed to be propped up exceeding 1,5m and not exceeding 3,5m high unless otherwise described Formwork to sides of bases, pile caps, ground beams, etc will only be measured where it is prescribed by the engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in "Earthworks"				
	UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	10MPa/19mm concrete				
1	Blinding "Labour Intensive"	m3	1		
	REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES				
	25MPa/19mm concrete				
2	Bases	m3	8		
	REINFORCED CONCRETE CAST ON/IN FORMWORK				
	25MPa/19mm concrete				
3	Columns in foundations (Provisional)	m3	2		
4	Columns	m3	11		
5	Isolated beams	m3	6		
	SMOOTH FORMWORK (DEGREE OF ACCURACY II)				
	Smooth formwork to circular columns				
6	600mm Diameter column 4.61m high	No	10		
	Carried to Collection			R	

	Smooth formwork to sides and soffits				
7	Beams propped up exceeding 9m and not exceeding 10.5m high	m2	64		
	Boxing in smooth formwork to form				
8	50 x 50mm Chamfers along top or bottom edges, circular not exceeding 1m radius	m	19		
	REINFORCEMENT (PROVISIONAL)				
	High tensile steel reinforcement to structural concrete work				
9	12mm Diameter bars	t	3.12		
	Carried to Collection			R	

Section No. 2

Bill No. 3

Concrete, Formwork and Reinforcement

COLLECTION

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Item No		Quantity	Rate	Amount

BILL NO 4

MASONRY

PREAMBLES

All tenderers are advised to study the General Preambles for Trades 2017 published by the Association of South African Quantity Surveyors, which are applicable on this project

SUPPLEMENTARY PREAMBLES

BRICKWORK

Sizes in descriptions

Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick

Bagged and sealed walls

Walls in two skins described as "bagged and sealed" shall be deemed to include having the outer face of the inner skin bagged with 1:6 cement and sand mixture and sealed with two coats bitumen emulsion waterproofing coating

Face bricks

Bricks shall be ordered timeously to obtain uniformity in size and colour

Pointing

Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc

BRICKWORK

SUPERSTRUCTURE

	Carried to Collection		R	

	Brickwork of NFP bricks in class II mortar				
1	One brick walls	m2	101		
	BRICKWORK SUNDRIES				
2	Forming toothings and bonding new brickwork to existing	m2	2		
	2,5mm Brickwork reinforcement				
3	150mm Wide reinforcement built in horizontally	m	264		
	Prestressed fabricated concrete lintels including necessary temporary supports				
4	100 x 70mm Lintels in lengths not exceeding 3m	m	5		
	Galvanised hoop iron cramps, ties, etc				
5	40 x 1,6mm Wall tie strips shot pinned to concrete and built into brickwork	No	406		
	PAVING ETC				
	Re-lay paving bricks set aside, laid on 20mm thick river sand bed with joints filled in with sand ,compacted with a vibration compactor.				
6	60mm Precast concrete block paving	m2	55		
	Carried to Collection			R	

Section No. 2

Bill No. 4

Masonry

COLLECTION

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Section No. 2
Bill No. 4
Masonry
REPLACEMENT OF GTM CIVIC CENTRE ROOF

Item No			Quantity	Rate	Amount
	BILL NO 5				
	ROOF COVERINGS, CLADDINGS, ETC				
	PREAMBLES				
	All tenderers are advised to study the General Preambles for Trades 2017 published by the Association of South African Quantity Surveyors, which are applicable on this project				
	PROFILED METAL SHEETING AND ACCESSORIES				
	0,55mm "Saflok 700" or similar approved concealed fixed steel sheets in single lengths with "Chromadek finish"fixed to steel purlins or rails				
1	Roof covering with pitches not exceeding 4 degrees	m2	1,346		
2	Side cladding	m2	39		
3	Circular cutting	m	48		
	0,6mm Z275 Galvanised steel sheet accessories to preceding roof coverings with "Chromadek" finish				
4	Counter flashings 462 mm girth	m	59		
5	Ridge capping 660mm girth	m	44		
6	Valley lining 660mm girth	m	5		
7	Hip flashing 660mm girth	m	5		
8	Barge flashing 660mm girth	m	235		
	ROOF AND WALL INSULATION				
	Carried to Collection			R	

	135mm Thick "Alucool" thermal insulation blanket of non-combustible brown glass mineral wool faced with either reinforced foil or white metalized foil or similar approved				
9	Insulation blanket laid taut over purlins (at approximately 1.1mm centres) and fixed concurrent with roof covering with stapled longitudinal flap joints, including fixing at top and bottom edges to purlins with and including hoop iron straps	m2	1,346		
	Carried to Collection			R	

Section No. 2

Bill No. 5

Roof coverings

COLLECTION

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Item No			Quantity	Rate	Amount
	BILL NO 6				
	CARPENTRY AND JOINERY				
	PREAMBLES				
	All tenderers are advised to study the General Preambles for Trades 2017 published by the Association of South African Quantity Surveyors, which are applicable on this project				
	SUPPLEMENTARY PREAMBLES				
	Fixing				
	Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete				
	Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as "bolted", the bolts have been given elsewhere				
	Decorative thermosetting plastic laminate covering				
	Laminate covering shall be glued under pressure and edge strips of same shall be butt jointed at junctions with adjacent similar finish				
	STRUCTURAL TIMBERWORK ETC				
	Sawn Softwood grade 5				
1	38 x 114mm Bolted roof trusses members in length not exceeding 2.4m (Provisional)	m	100		
2	38 x 152mm Bolted roof trusses members in length not exceeding 2.4m (Provisional)	m	25		
3	50 x 75mm Purlins (Provisional)	m	250		
	CUPBOARDS TO KITCHENS, BEDROOMS, ETC				
	SUPPLEMENTARY PREAMBLES				
	Carried to Collection			R	

	General The following cupboard fittings have been given as complete units i.e. the components of the units have not been given separately. Descriptions of such units shall, therefore, be deemed to include all components, assembling, housing, notching, glueing, blocking, planting-on and screwing with countersunk screws, edge strips, thermosetting plastic laminate, glass, ironmongery, metalwork, paint or varnish finishes, etc Prices are to include for all necessary filler pieces against walls etc References References given in descriptions refer to the respective types of fittings detailed on the architect's drawing(s) numbered Executive Boardroom :Server Cupboard annexed to these bills of quantities for tender purposes Kitchen cupboards etc				
4	Floor cupboard size 2035 x 652 x 1000mm high with top, sides, bottom, division, shelf, back and double hinged door, dividing framework according to Server cupboard drawing attached at the back of bills of quantities	No	2		
	Carried to Collection			R	

Section No. 2

Bill No. 6

Carpentry and joinery

COLLECTION

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Item No		Quantity	Rate	Amount

BILL NO 7

CEILINGS, PARTITIONS AND ACCESS FLOORING

PREAMBLES

All tenderers are advised to study the General Preambles for Trades 2017 published by the Association of South African Quantity Surveyors, which are applicable on this project

SUPPLEMENTARY PREAMBLES

Ceilings

Unless otherwise described ceilings shall be deemed to be horizontal

Bulkheads

Unless otherwise described bulkheads shall be deemed to be horizontal along the length

Steel components

All steel components for ceilings, partitions, etc are to be galvanised in accordance with SANS 121

SUSPENDED CEILINGS

SUPPLEMENTARY PREAMBLES

Proprietary suspended ceilings

Hangers, suspension grids, "lay-in" panels, etc are to be in accordance with the manufacturers' recommendations

Electrical light fittings, diffusers, panels etc are generally "lay-in" units of the same dimensions as the suspension grid described and allowance must be made in the rates accordingly for their support inclusive of any flexibility in setting out that may be required (ceiling panels have not been deducted and pricing is to take cognisance thereof)

Carried to Collection R

	Flush plastered gypsum plasterboard suspended ceilings Ceilings shall comprise 9,5mm gypsum plasterboard boards screwed to and including screw-up suspension grid consisting of main tees at 1 200mm centres and galvanised steel capped cross tees at 400mm centres and with tape fixed over joints and the whole finished with gypsum plaster trowelled to a smooth polished surface The grid shall be suspended by means of galvanised steel L-section hangers at suitable centres, securely shot-pinned or screwed to concrete, steel or wood Flush plastered gypsum plasterboard suspended bulkheads Bulkheads shall comprise galvanised steel studding of 63,5mm top and bottom tracks with vertical studs at maximum 400mm centres, pop-riveted to the top and bottom tracks with similar additional vertical studs as necessary at abutments, ends, etc and covered as described with plasterboard screwed to studding with drywall screws at maximum 300mm centres. Boards shall be butt jointed and finished with tape and jointing compound and the whole finished with gypsum plaster trowelled to a smooth polished surface to the thickness recommended by the manufacturer Descriptions shall be deemed to include any additional studs at ends and intersections, corner beads, cornices at junctions with ceilings, jointing compound, tape, etc 1200 x 600 x 12.7mm Vinyl cladded gypsum ceiling panels on exposed suspension grid system including hangers, necessary hold-down clips and wedges, etc				
1	Ceilings suspended not exceeding 1m below concrete slabs at 1 000 mm centres	m2	120		
	"Donn" cornices, perimeter trims, etc to suspended ceilings				
2	"LSM 25" pre-painted shadowline cornices, plugged	m	112		
	Carried to Collection			R	

	9mm Gypsum plasterboard on screw-up tee suspension grid including hangers etc, with tape fixed over joints and the whole finished with gypsum plaster trowelled to a smooth polished surface				
3	Ceilings suspended not exceeding 1m below timber trusses at 950mm centres	m2	47		
4	Vertical portion of bulkheads 100mm high suspended exceeding 1.2m and not exceeding 2.4m extreme below steel purlins	m2	2		
5	Vertical portion of bulkheads 200mm high suspended exceeding 1.2m and not exceeding 2.4m extreme below steel purlins	m2	3		
6	Extra over ceiling for opening for 68mm diameter downlighter	No	22		
	"EPX" cornices, perimeter trims, etc to suspended ceilings				
7	Type XPS05 or similar approved pre-painted cornices for flush plastered ceilings, plugged	m	29		
	Carried to Collection			R	

Section No. 2

Bill No. 7

Ceilings, partitioning and access flooring

COLLECTION

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Item No			Quantity	Rate	Amount
	BILL NO. 8				
	FLOOR COVERINGS, WALL LININGS, ETC.				
	PREAMBLES				
	All tenderers are advised to study the General Preambles for Trades 2017 published by the Association of South African Quantity Surveyors, which are applicable on this project				
	SUPPLEMENTARY PREAMBLES				
	Fixing				
	Floor coverings, wall linings, etc shall, where applicable, be fixed with adhesive as recommended by the manufacturers of the flooring, linings, etc				
	CARPETS				
	Belgotex Cast Stripped 10mm Broadloom, colour shale manufactured from Stainproof SDX & Stainproof Eco SDX Blend (Solution Dyed Nylon) including 100% recycled staple fibre blend 8.5mm thick green underlay to be laid in accordance with the SANS 10186 fitting code of practice.				
1	On floors	m2	47		
	Carried Forward to Summary of Section No. 2			R	

Item No		Quantity	Rate	Amount

BILL NO 9

IRONMONGERY

PREAMBLES

All tenderers are advised to study the General Preambles for Trades 2017 published by the Association of South African Quantity Surveyors, which are applicable on this project

SUPPLEMENTARY PREAMBLES

Proprietary items

Where applicable the manufacturers' names or product catalogue titles are given in sub-headings preceding the items

Prices are to be based on the specific products/articles specified. If tenderers wish to offer alternative products/articles for certain items, these items are to be clearly marked and the alternative specification given with supporting brochures etc clarifying the features of the products/articles offered

On request returnable samples are to be provided to the principal agent for consideration

PHOTOLUMINESCENT SIGNS

Carried to Collection R

SUPPLEMENTARY PREAMBLES

Signs are to comply with SANS 1186-1 to 5 and to be to the approval of the local authority. Signs are to have anodised aluminium frames

Prices are to include for fixing by approved methods. The use of double sided tape will not be permitted. Surface mounted signs are to be concealed fixed and ceiling mounted signs are to be hung with 2mm diameter stainless steel cables

Single sided ceiling mounted signs are to have 2mm satin chrome anodised aluminium back panels

Samples, specifications, literature, etc of materials and fabricated articles the tenderer proposes to use shall be submitted with the tender

A ten year guarantee on materials and workmanship shall be submitted by the successful tenderer

References at the end of the item descriptions are to the relative items on drawings

Ceiling mounted double sided photoluminescent statutory signs in 190 x 190mm modules with back plate framed in natural anodised alumimium

1	190 x 380mm Sign (Type E3)	No	1		
2	190 x 380mm Sign without backplate (Type F13)	No	1		
3	190 x 380mm Sign without back plate (Type F16/F19)	No	1		

Carried to Collection R

Section No. 2

Bill No. 9

Ironmongery

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	182		
	183		

Carried Forward to Summary of Section No. 2 R

Item No			Quantity	Rate	Amount
	BILL NO 10				
	STRUCTURAL STEEL (PROVISIONAL)				
	PREAMBLES				
	All tenderers are advised to study the General Preambles for Trades 2017 published by the Association of South African Quantity Surveyors, which are applicable on this project				
	SUPPLEMENTARY PREAMBLES				
	Descriptions				
	Descriptions of bolts shall be deemed to include nuts and washers				
	Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete				
	Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete				
	STEEL COLUMNS AND BEAMS				
	Welded columns in single lengths with flat base, cap, bearer and connection plates, bolted to concrete				
1	203 x 203mm x 46kg/m I-section columns	t	6.20		
	Welded beams in single lengths with flat bearer and connection plates, bolted to steel				
2	254 x 146 x 31.3kg/m I-section beams	t	8.52		
3	305 x 165 x 40.5kg/m I-section beams	t	3.29		
4	305 x 165 x 40.5kg/m I-section beams circular at radius 100.38m	t	1.94		
5	Round hollow section rolled slightly to form curve	t	3.17		
	Carried to Collection			R	

6	600 X 150mm x 8mm Thick mild steel flat plate three times, holed welded to steel rafters	kg	153		
7	Tapered- cut ends to I-section beam size 203 x 146mm	No	49		
8	Notch cut out for 225 x 225mm gutter to I-section beams size 203 x 146mm	No	49		
	STEEL PURLINS, GIRTS, BRACING, ETC				
	Purlins and girts, bolted to steel				
9	125 x 65 x 20 x 3mm Thick cold-formed lipped channel purlins	t	5.02		
	Welded bracing, anti-sag rails, etc with flat connection plates, bolted to steel				
10	Angle bracing	t	0.34		
	BOLTS,FASTENERS,ETC				
11	High tensile bolts	t	1.00		
12	12mm Diameter L-shaped threaded anchor bolt 350mm girth embedded in top of concrete	No	40		
	Carried to Collection			R	

Section No. 2

Bill No. 10

Structural steel

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	185		
	186		

Carried Forward to Summary of Section No. 2 R

Item No		Quantity	Rate	Amount

BILL NO 11

METALWORK

PREAMBLES

All tenderers are advised to study the General Preambles for Trades 2017 published by the Association of South African Quantity Surveyors, which are applicable on this project

SUPPLEMENTARY PREAMBLES

Descriptions of bolts, anchors, etc

Descriptions of bolts shall be deemed to include nuts and washers

Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete

Items described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 600mm centres

Carried to Collection R

Aluminium doors, windows, etc

Doors and windows shall comply with AAAMSA design criteria

Glazing shall comply with SAGGA regulations. Glass shall be " GSA Smartglass Intruderprufer" clear laminated performance glass as shown on the window schedules/drawings appended to these bills of quantities . Glass thickness shall comply with SAGGA regulations irrespective of thickness's shown on the schedules/drawings

Doors and windows shall be supplied with protective tape and plastic and shall be removed only once surrounding trades have been completed

For purpose made windows and doors, refer to drawings annexed to these bills of quantities

The following certificates shall be provided prior to commencement of site work:

1 A copy of the relevant AAAMSA Performance Test Certificate from the manufacturer/contractor supplying the architectural aluminium product

2 A Certificate of Conformance confirming that anodising or powder coating has been processed in accordance with SANS 999 and SANS 1796 respectively

3 A powder guarantee of not less than 15 years issued by the powder manufacturer. The

specific conditions contained in this guarantee shall form part of the powder coating process

4 A Certificate of Conformance confirming that glazing has been installed in accordance with SANS 0137, ensuring that safety glazing materials have been installed in the mandatory areas and that each individual pane of safety glazing materials has been permanently marked

5 A warranty from the manufacturer of the laminated safety glass and/or hermetically sealed glazing units guaranteeing the products against delamination and colour degredation for a period of not less than five years

Carried to Collection R

ALUMINIUM WINDOWS, DOORS, ETC

Refer to attached door and window schedules for details of doors and windows

ALUMINIUM WINDOWS

Powder coated anodised aluminium casement windows as per "Clipfront 44" system, complete with subframes, ironmongery, clear laminated safety glass, sealing, etc and fixing to brickwork or concrete

1	Purpose made window size 2810 x 1445mm high with burglar bars	No	1		

ALUMINIUM DOORS

Powder coated aluminium doors as per "Clipfront 44" system ,complete with subframes, ironmongery, "GSA Smartglass intruderprufe" or equal approved laminated safety glass, etc. sealing all round with silicone and fixing to brickwork or concrete

2	Purpose made aluminium double door 1575 x 2300mm high	No	1		

Carried to Collection R

Section No. 2

Bill No. 11

Metalwork

COLLECTION

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Total Brought Forward from Page No.	188		
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Section No. 2
Bill No. 11
Metalwork
REPLACEMENT OF GTM CIVIC CENTRE ROOF

Item No			Quantity	Rate	Amount
	BILL NO 12				
	PLASTERING				
	PREAMBLES				
	All tenderers are advised to study the General Preambles for Trades 2017 published by the Association of South African Quantity Surveyors, which are applicable on this project				
	SCREEDS				
	Screed wood floated on concrete				
1	50mm Thick on floors and landings	m2	47		
	INTERNAL PLASTER				
	Cement plaster steel trowelled, on brickwork				
2	On walls	m2	73		
3	On narrow widths not exceeding 300mm wide	m2	2		
	EXTERNAL PLASTER				
	Cement plaster wood floated, on brickwork				
4	On walls	m2	73		
5	On narrow widths not exceeding 300mm wide	m2	2		
	Carried Forward to Summary of Section No. 2			R	

Item No			Quantity	Rate	Amount
	BILL NO 13				
	PLUMBING AND DRAINAGE (PROVISIONAL)				
	PREAMBLES				
	All tenderers are advised to study the Model Preambles for Trades 2017 published by the Association of South African Quantity Surveyors, which are applicable on this project				
	RAINWATER DISPOSAL				
	0,8 mm Galvanised sheet steel gutters and rainwater pipes with powder coated finish on outside				
1	255 x 255mm Box gutters with one side 325mm high	m	97		
2	255 x 255mm Box gutters with one side 325mm high circular at radius 100.38m	m	48		
3	Extra over gutter for stopped end	No	20		
4	Extra over gutter for angle	No	20		
5	Extra over gutter for outlet for 150 x 150 mm pipe	No	20		
6	150 x 150mm Rainwater pipes	m	170		
7	Extra over rainwater pipe for shoe	No	10		
8	Extra over rainwater pipe for Y-intersection	No	20		
9	Extra over rainwater pipe for eaves or plinth offset	No	20		
	FIRE APPLIANCES ETC				
10	4,5kg Dry chemical powder fire extinguisher fixed onto and including 700 x 100 x 22mm thick backboarding finished with two coats approved varnish	No	2		
	Carried Forward to Summary of Section No. 2			R	

Item No		Quantity	Rate	Amount

BILL NO 14

PAINTWORK

PREAMBLES

All tenderers are advised to study the General Preambles for Trades 2017 published by the Association of South African Quantity Surveyors, which are applicable on this project

SUPPLEMENTARY PREAMBLES

PREPARATORY WORK TO EXISTING WORK

Previously painted plastered surfaces

Surfaces shall be thoroughly washed down and allowed to dry completely before any paint is applied. Blistered or peeling paint shall be completely removed and cracks shall be opened, filled with a suitable filler and finished smooth

Previously painted metal surfaces

Surfaces shall be thoroughly rubbed and cleaned down. Blistered or peeling paint shall be completely removed down to bare metal

Previously painted wood surfaces

Surfaces shall be thoroughly cleaned down. Blistered or peeling paint shall be completely removed and cracks and crevices shall be primed, filled with suitable filler and finished smooth

COLOURS

Unless otherwise described paintwork on ceilings shall be deemed to be in the "White" colour group and paintwork on all other components shall be deemed to be in the "Pastel" colour group in accordance with the Natural Colour System (NCS) adopted by the SA National Standards

Carried to Collection R

	PAINTWORK ETC TO NEW WORK				
	ON INTERNAL FLOATED PLASTER SURFACES				
	One coat alkali resistant primer and two coats premium quality polyurethane enamel paint				
1	Walls	m2	73		
	ON EXTERNAL FLOATED PLASTER SURFACES				
	One coat alkali resistant primer and two coats superior quality acrylic emulsion paint for interior and exterior use				
2	Walls	m2	73		
	ON SMOOTH CONCRETE SURFACES				
	One coat bonding liquid, one coat primer and two coats superior quality acrylic emulsion paint for interior and exterior use, including stopping blow holes				
3	Walls and columns	m2	23		
	ON METAL SURFACES				
	One coat alkyd based zinc phosphate primer, one coat alkyd based universal undercoat and two coats superior quality universal enamel paint, on steel				
4	Columns and beams	m2	1,446		
5	Rails, bars, pipes, etc not exceeding 300mm girth	m	867		
	PAINTWORK, ETC TO PREVIOUSLY PAINTED WORK				
	ON INTERNAL FLOATED PLASTER SURFACES				
	Two coats superior quality acrylic emulsion paint for interior and exterior use				
6	Walls	m2	54		
	Carried to Collection			R	

Section No. 2

Bill No. 14

Paintwork

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	194		
	195		

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SECTION SUMMARY - Building works

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1	Alterations (Provisional)	159		
2	Foundations (Provisional)	163		
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4	Masonry	170		
5	Roof coverings	173		
6	Carpentry and joinery	176		
7	Ceilings, partitioning and access flooring	180		
8	Floor Coverings	181		
9	Ironmongery	184		
10	Structural steel (Provisional)	187		
11	Metalwork	191		
12	Plastering	192		
13	Plumbing and drainage (Provisional)	193		
14	Paintwork	196		
	Carried to Final Summary		R	

Section No. 2
REPLACEMENT OF GTM CIVIC CENTRE ROOF

Item No			Quantity	Rate	Amount
	SECTION NO. 3				
	BILL NO 1				
	ELECTRICAL WORK (PROVISIONAL)				
	Specifications, drawings, etc				
	Tenderers are referred to the specification and drawings number 600-10 to 600-13 prepared by Anderson Consulting Engineers accompannying these bills of quantities for the electrical work,for the full descriptions of the following items which are to be read and priced in conjuction with the said specification and drawings				
	Distribution boards etc				
	Rates for distribution boards etc are to include for busbars, jumpers, neutral bars, internal wiring and connections, circuit identification markers, control gear labels, circuit legend cards and working drawings				
	Switches, socket outlets, etc				
	Rates for switches, socket outlets, etc are to include for screwing to outlet boxes, connecting up and cover plates				
	Light fittings				
	Rates for light fittings are to include for hanging, fixing and connecting and for lamp holders and fluorescent tubes and lamps of the type and wattage described				
	WIRING - FINAL CIRCUIT				
	FLAT TWIN & EARTH				
	Install SABS approved FT&E copper wiring fixed to cable tray, basket, ladder, ceiling hanger or installed in trunking / conduit (trunking /conduit elsewhere)				
1	1,5 mm²	m	120.00		
2	2.5 mm²	m	80.00		
	Carried to Collection			R	

3	4 mm²	m	40.00		
4	6 mm²	m	35.00		
	NORSK / SURFIX				
	Install SABS approved Norsk / Surfix copper cable fixed to cable tray, basket, ladder or installed in trunking complete with terminations. Type: Aberdare or equal and approved by Engineer (cable tray ,etc elsewhere)				
5	1,5 mm²	m	120.00		
6	2.5 mm²	m	80.00		
7	4 mm²	m	40.00		
8	6 mm²	m	35.00		
	CONDUIT PVC				
	Conduit fixed to Surface				
9	20mm dia	m	40.00		
10	25mm dia	m	30.00		
	Conduit chased into Brickwork				
11	20mm dia	m	20.00		
12	25mm dia	m	15.00		
	Conduit End complete				
13	20mm dia	No	13.00		
14	25mm dia	No	10.00		
	CONDUIT BOXES				
	Supply and installation of conduit boxes. Rates to include for boxes and termination of conduits into boxes.				
	Installed in Brick or Surface				
	Carried to Collection			R	

	Excluding covers (covers measured with outlets) unless otherwise indicated below entry into power skirting. [Rate to include for cutout in power skirting and fitting safety edge.]				
15	65 mm Round x 65 mm deep pvc draw box with cover plate.	No	33.00		
16	100 mm High x 50 mm wide x 50 mm deep galv outlet box	No	3.00		
17	100 mm High x 100 mm wide x 50 mm deep galv outlet box	No	4.00		
18	100 mm x 100 mm x 100 mm Concealed box for back	No	4.00		
	COVER PLATES				
	Blank cover plate (White) screwed onto conduit box				
19	100mm x 100mm Cover	No	5.00		
20	100mm x 50mm Cover	No	5.00		
	GALVANIZED DRAW WIRES				
21	1,6mm Dia galvanized steel draw wire drawn	m	200.00		
	into unwired conduits.				
	POWER SKIRTING				
	2 Cover, 2 compartment galv steel (0.8mm Thick) power skirting powder coated (standard colour). Type: Cabstrut P801,O-Line MS2 or equal & approved by Engineer				
22	Straight Length (Power Skirting)	m	20.00		
23	Elbow (Internal/External) (Power Skirting)	No	6.00		
24	Duct divider (Power Skirting)	No	20.00		
25	End cap (Power Skirting)	No	2.00		
	Carried to Collection			R	

	Power Skirting Outlets				
26	16A SSO Normal (White) & Cover (Outlet)	No	2.00		
27	16A SSO Dedicated (Red) & Cover (Outlet)	No	1.00		
28	Blank Cover plate (Outlet)	No	10.00		
	POWER POLE & FLOOR BOX				
	Floor Box				
	Concrete / Screed floor recessed box				
29	Cottage Pedestal 150x255x75mm 4xOutlet c/w recessed conduit box	No	1.00		
	Floor Box Outlets				
30	15A SSO Normal (White) & Cover.	No	1.00		
31	15A SSO Dedicated (Red) & Cover.	No	1.00		
32	Blank Cover plate.	No	2.00		
	SOCKET OUTLETS				
	Socket outlets, including cover plates and all accessories. Installed in surface or flush boxes. (Boxes, powerskirting & powerskirting outlets measured elsewhere). Type: SABS approved only, Crabtree Diamond or Clipsal S2000				
	Crabtree Diamond Range (Colour: White) 100x100mm				
33	16 A Single Swtiched Socket Outlet (Red) Dedicated	No	2.00		
34	16 A Double Swtiched Socket Outlet (Red) Dedicated	No	2.00		
35	Blank cover plate, fitted to 100 x 100 box.	No	6.00		
	LIGHT SWITCHES				
	Carried to Collection			R	

	Supply, installation and connection of surface or flush mounted light switches complete with cover plates and all accessories. (Boxes measured elsewhere) **Type: SABS approved Crabtree Diamond or Clipsal S2000 Crabtree Diamond Range (Colour: White) - 100x50mm**				
36	20 A, Single lever, one way.	No	1.00		
37	20 A, Single lever, one way, Dimmable	No	2.00		
	LIGHT FITTINGS				
	Supply & Install of light fittings delivered, off-loaded, stored on site & Installed.				
38	Type - Cove light - Linear led cove light, 12W/m, 4000K, c/w opal diffuser and control gear	m	20.00		
39	Type D1 - 12W Led downlight (cob) c/w die cast aluminium body. L90B10, CRI>85, 4000K, 1300Lm, 50 000HRS. Colour = white, cutout = 68mm diam.	No	12.00		
40	Type D1E - Emergency 12W Led downlight (cob) c/w die cast aluminium body. L90B10, CRI>85, 4000K, 1300Lm, 50 000HRS. Colour = white, cutout = 68mm diam. fitting with integral battery pack rated for minimun of 1HR or 3HR	No	2.00		
	LIGHTING PROTECTION				
41	Lighting Protection Risk Assessment to be completed in accordance with SANS10142-1, SANS 62305-2, SANS10313 for entire building		Item		
42	Design of Lightning Protection System for entire building.		Item		
43	Supply & Installation of Lightning Protection System to Building.		Item		
44	Construction Drawings		Item		
45	Certificate of Compliance & As-Built Drawings		Item		
46	Handover Documents		Item		
	Carried to Collection			R	

	PROVISIONAL SUMS TO BE ADJUSTED			
47	New Feature Column Lighting	Item		120,000.00
48	Relocating Power for HVAC	Item		30,000.00
49	Relocate existing DB at 'Roof E' position	Item		25,000.00
	Carried to Collection		R	

Section No. 3
Bill No. 1
Electrical Works
REPLACEMENT OF GTM CIVIC CENTRE ROOF

Section No. 3

Bill No. 1

Electrical Works

COLLECTION

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	200		
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	203		
Carried to Final Summary		R	

Item No		Quantity	Rate	Amount

SECTION NO 4

BILL NO 1

MECHANICAL INSTALLATION (PROVISIONAL)

AIR CONDITIONING AND VENTILATION (PROVISIONAL)

SUPPLEMENTARY PREAMBLES

Specifications, drawings, etc

Tenderers are referred to the specification and drawings prepared by Arquero Technical Support accompanying these bills of quantities for the mechanical work, for the full descriptions of the following items which are to be read and priced in conjunction with the said specification and drawings

Ductwork

Descriptions of ducts shall be deemed to include stiffeners, jointing materials, sealants, couplers in the running length and access/inspection panels in accordance with the specification

Dampers

Descriptions of smoke and fire dampers shall be deemed to include fusible links, sleeves, frames, supports and access openings in ducts

Air diffusion

Descriptions of air terminals, grilles, louvres and the like shall be deemed to include necks, frames, supports and flexible connections

Fans

Descriptions of fan assemblies shall be deemed to include supports from the structure, flexible or other connections to ductwork, vibration isolation mountings and airtight inspection doors

Carried to Collection R

Sound attenuators

Descriptions of sound attenuators shall be deemed to include flanged or flexible connections to ducts and supports from the structure

Fan coil units, fan air terminals and fan heaters

Descriptions of fan coil units, fan air terminals and fan heaters shall be deemed to include connection points for water, air and electrical supply, for air grilles, dust trays, condensate trays and vibration isolation mountings. Flexible ducts, flexible hose and connecting cables for connecting these units to each other or to water pipe, and electrical supply are separately measured

Major equipment

Descriptions of major equipment such as chillers, air handling units and the like shall be deemed to include connections to water, air and electrical supply and/or discharge points, supports, bearers, vibration insulation mountings, filters, insulation, inspection ladders and gangways, access doors and panels and painting etc as specified

Piping

Pipe diameters are nominal internal unless otherwise stated

Where fittings have reducing ends or branches they are described as "reducing". In the case of pipes with diameters not exceeding 60mm only the largest end or branch diameter is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained. In the case of pipes with diameters exceeding 60mm all diameters are given and no claim for extra bushes, reducers, etc will be entertained

Fixing of pipes

Unless otherwise stated, descriptions of pipes shall be deemed to include fixing to walls etc, casting in, building in or suspending not exceeding 1m below suspension level

Carried to Collection R

	Pump sets Descriptions of pumps shall be deemed to include connections to water and electrical supply and/or discharge points, vibration insulation mountings, insulation, drip trays with outlets, pressure gauges, etc Valves Descriptions of valves shall be deemed to include flanged or screwed connections to pipes, reducers, supports, etc Insulation Descriptions of insulation shall be deemed to include priming the pipes with zinc chromate primer before the insulation is applied, painting the insulation when completed and applying vapour barrier where specified **HVAC INSTALLATIONS** **SECOND FLOOR - NEW FRESH AIR SYSTEM** **EQUIPMENT AND ACCESSORIES**				
1	FAF2.1 CIRCULAR & SPIRAL DUCTING Dia.200	m	4.00		
2	Transformations - Supply and Install 300x 300 to Dia 250	No	1.00		
3	Dia 250 to Dia 200	No	1.00		
4	Spigots - Supply and Install Dia.200	No	1.00		
5	90° Bends - Supply and Install Dia. 200	No	1.00		
6	AIR DIFFUSION Supply air Disc Valves - Metal, white epoxy coated - Supply and Install Dia. 200 supply air disc valve (Rickard CCD type)	No	1.00		
7	Diffuser & Disc Valve Clamps - Supply and Install 200mm diam clamps	No	1.00		
8	Flexible ducting - Supply and Install Un-insulated 200mm diam.	m	1.50		
	Carried to Collection			R	

9	External Weather Louvres, Discharge Cowls & Wire Mesh Screens - Supply and Install 300 x 300 neck size, weather louvre complete with wire mesh screens :	No	1.00		
10	Supply and Fresh Air Filter Boxes c/w side access doors 300x300x75L complete with 50mm pleated, washable filters	No	1.00		
11	FAF2.2 Dia.250	m	16.00		
12	Dia.200	m	16.00		
13	Dia.100	m	37.50		
14	Transformations - Supply and Install 400 x 400 to Dia 400	No	1.00		
15	Dia 400 to Dia 250	No	1.00		
16	Dia 250 to Dia 200	No	1.00		
17	Spigots - Supply and Install Dia.250	No	7.00		
18	Dia.200	No	8.00		
19	90° Bends - Supply and Install Dia. 200	No	1.00		
20	Dia. 100	No	1.00		
21	AIR DIFFUSION Supply air Disc Valves - Metal, white epoxy coated - Supply and Install Dia. 100 supply air disc valve (Rickard CCD type)	No	15.00		
22	Diffuser & Disc Valve Clamps - Supply and Install 100mm diam clamps	No	15.00		
23	Flexible ducting - Supply and Install Un-insulated 100mm diam.	m	22.50		
24	External Weather Louvres, Discharge Cowls & Wire Mesh Screens - Supply and Install 400 x 400 neck size, weather louvre complete with wire mesh screens :	No	1.00		
	Carried to Collection			R	

25	Supply and Fresh Air Filter Boxes c/w side access doors 400x400x75L complete with 50mm pleated, washable filters	No	1.00		
26	Balancing Damper - Supply and Install Single blade damper with flynut lockable quadrant riveted onto the damper duct piece. Damper length should be at least 15% longer than the damper height. Dia. 100 butterfly damper	No	15.00		
27	Stop Ends - Supply and Install Dia.150	No	1.00		
	HVAC INSTALLATIONS **SECOND FLOOR - NEW FRESH AIR SYSTEM** **EQUIPMENT AND ACCESSORIES**				
28	FAF2.3 Dia.250	m	16.00		
29	Dia.150	m	24.00		
30	Dia.100	m	30.80		
31	Transformations - Supply and Install 400 x 400 to Dia 400	No	1.00		
32	Dia 400 to Dia 250	No	1.00		
33	Dia 250 to Dia 150	No	1.00		
34	Spigots - Supply and Install Dia.250	No	8.00		
35	Dia.150	No	8.00		
36	90° Bends - Supply and Install Dia. 100	No	2.00		
37	45° Bends - Supply and Install Dia. 150	No	2.00		
38	AIR DIFFUSION Supply air Disc Valves - Metal, white epoxy coated - Supply and Install Dia. 100 supply air disc valve (Rickard CCD type)	No	16.00		
39	Diffuser & Disc Valve Clamps - Supply and Install 100mm diam clamps	No	16.00		
	Carried to Collection			R	

40	Flexible ducting - Supply and Install Un-insulated 100mm diam.	m	24.00		
41	External Weather Louvres, Discharge Cowls & Wire Mesh Screens - Supply and Install 400 x 400 neck size, weather louvre complete with wire mesh screens :	No	1.00		
42	Supply and Fresh Air Filter Boxes c/w side access doors 400x400x75L complete with 50mm pleated, washable filters	No	1.00		
43	Balancing Damper - Supply and Install Single blade damper with flynut lockable quadrant riveted onto the damper duct piece. Damper length should be at least 15% longer than the damper height. Dia. 100 butterfly damper	No	16.00		
44	Stop Ends - Supply and Install Dia.100	No	1.00		
45	FAF2.4 Dia.250	m	8.00		
46	Dia.200	m	12.00		
47	Dia.150	m	8.00		
48	Dia.100	m	22.00		
49	Transformations - Supply and Install 400 x 400 to Dia 400	No	1.00		
50	Dia 400 to Dia 250	No	1.00		
51	Dia 250 to Dia 200	No	1.00		
52	Spigots - Supply and Install Dia.250	No	5.00		
53	Dia.150	No	6.00		
54	90° Bends - Supply and Install Dia. 250	No	1.00		
55	Dia. 100	No	4.00		
	Carried to Collection			R	

56	AIR DIFFUSION Supply air Disc Valves - Metal, white epoxy coated - Supply and Install Dia. 100 supply air disc valve (Rickard CCD type)	No	11.00		
57	Diffuser & Disc Valve Clamps - Supply and Install 100mm diam clamps	No	11.00		
58	Flexible ducting - Supply and Install Un-insulated 100mm diam.	m	16.50		
59	External Weather Louvres, Discharge Cowls & Wire Mesh Screens - Supply and Install 400 x 400 neck size, weather louvre complete with wire mesh screens :	No	1.00		
60	Supply and Fresh Air Filter Boxes c/w side access doors 400x400x75L complete with 50mm pleated, washable filters	No	1.00		
61	Balancing Damper - Supply and Install Single blade damper with flynut lockable quadrant riveted onto the damper duct piece. Damper length should be at least 15% longer than the damper height. Dia. 100 butterfly damper	No	10.00		
62	Stop Ends - Supply and Install Dia.150	No	1.00		
	HVAC INSTALLATIONS **SECOND FLOOR - NEW FRESH AIR SYSTEM EQUIPMENT AND ACCESSORIES**				
63	EXTRACT AIR FANS - SUPPLY AND INSTALL Wall mounted, Centrifugal, Axial & inline tube Fans complete with feet, flanges and support brackets and spring mounts/ Anti vibration mountings - Supply and Install Dia.250 FAF2.1 Axial Fan mounted fan for 0.105m³/s ,350 Pa total Pressure, 0.31 kW (400V, 50Hz)	No	1.00		
64	Dia.400 FAF2.2 Axial Fan mounted fan for 0.225m³/s ,350 Pa total Pressure, 0.41 kW (400V, 50Hz)	No	1.00		
65	Dia.400 FAF2.3 Axial Fan mounted fan for 0.225m³/s ,350 Pa total Pressure, 0.41 kW (400V, 50Hz)	No	1.00		
66	Dia.400 FAF2.4 Axial Fan mounted fan for 0.150m³/s ,350 Pa total Pressure, 0.41 kW (400V, 50Hz)	No	1.00		
	Carried to Collection			R	

67	Sound Attenuators complete with support brackets - Supply and Install Sound Attenuators to suit Dia. 250 Fan	No	2.00		
68	Sound Attenuators complete with support brackets - Supply and Install Sound Attenuators to suit Dia. 400 Fan	No	6.00		
69	Electrical and Electronic Connections - Supply and Install Electrical starter/isolator with overload protection, wired to fan and to isolator	No	4.00		
70	Electrical cabling and wiring of fans (all cabling and wiring measured as one item per fan)		Item		
71	Allow for 12 months guarantee and maintenance		Item		
	PROVISIONAL AMOUNTS TO BE ADJUSTED				
72	PROVISIONAL AMOUNTS Provisional Amount for Relocation of HVAC Unit Condensers, reconnection of refrigerant piping, recharging of refrigerant, testing and recommissioning		Item		110,000.00
	Carried to Collection			R	

Section No. 4

Bill No. 1

Mechanical instalation

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	205		
	206		
	207		
	208		
	209		
	210		
	211		
	212		
Carried to Final Summary		R	

Item No		Quantity	Rate	Amount

SECTION NO. 5

BILL NO 1

PROVISIONAL SUMS

General

Work for which budgetary allowances are provided will be measured and valued in accordance with clause 25 of the Principal Building Agreement and deducted in whole or in part if not required without any compensation for loss or profit on the said allowances

Prime cost amounts and provisional sums are net. Prime cost amounts include for delivery to site of all articles concerned

Provisional sums are for material and equipment supplied and installed complete by firms of specialists

Profit

Where stated, the contractor may allow for profit if required

General attendance on nominated/selected subcontractors

The item "Attendance" which follows each provisional sum for nominated/selected subcontractors' work, shall be deemed to cover all the contractor's costs incurred in providing free of charge to the nominated/selected subcontractors, the following:

1 The services as set out in clause B9.1 of the Preliminaries

2 Making good in all trades and cleaning down and removal of rubbish on completion

PROVISIONAL SUMS FOR SELECTED SUBCONTRACT WORKS

Carried to Collection R

	Synthetic timber cladding			
1	Provide the sum of R 1 150 000.00 (One million one hundred and fifty thousand Rands) for Synthetic timber cladding	Item		1,150,000.00
2	Profit		%	
3	Attendance		%	
	Fire detection			
4	Provide the sum of R 265 000.00 (Two hundred and sixty five thousand Rands) for Fire Detection	Item		265,000.00
5	Profit		%	
6	Attendance		%	
	Carried to Collection		R	

Section No. 5

Bill No. 1

Provisional Sums

COLLECTION

	Page No		Amount
Total Brought Forward from Page No.	214		
	215		
Carried to Final Summary		R	

FINAL SUMMARY

Section No		Page No		Amount
1	Preliminaries	154		
2	Building works	197		
3	Electrical installation	204		
4	Mechanical installation	213		
5	Provisional Sums	216		
	SUB-TOTAL		R	
	CONTINGENCIES			
	Provide the sum of R275,000.00 for contingencies to be authorised by the Client.		R	275,000.00
	SUB-TOTAL (EXCLUDING VAT)		R	
	PLUS: VALUE ADDED TAX (15% of Subtotal)		R	
	TOTAL		R	
	Carried to Form of Tender		R	

REPLACEMENT OF GTM CIVIC CENTRE ROOF

C3: SCOPE OF WORK

C3.1 DESCRIPTION OF WORKS

Removal of part of roof structure, modification and new roof structure, new roof covering, reinforced concrete structure, external façade, electrical and mechanical works.

C3.3.3.1 OCCUPATIONAL HEALTH AND SAFETY ACT 1993: HEALTH AND SAFETY SPECIFICATION

CLIENT
GREATER TZANEEN MUNICIPALITY

PROJECT SHE SPECIFICATION
FOR PROJECT :
ROOF REPLACEMENT AT CIVIC CENTRE

TYPE OF WORK PERFORMED	ROOF REPLACEMENT
PREPARED BY:	MM CONSULTANTS

INDEX

1. INTRODUCTION

1.1. In terms of Construction Regulation 5(1)(*b*) of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), as the Client and/or its Agent on its behalf, shall be responsible to prepare Health & Safety Specifications for any intended construction project and provide any Principal Contractor who is making a bid or appointed to perform construction work for the Client and/or its Agent on its behalf with the same.

1.2. The Principal Contractor and contractors shall be responsible for the Health & Safety Policy for the site in terms of Section 7 of the Act and in line with Construction Regulation 7 as well as the Health and Safety Plan for the project.

1.3. This 'Health and Safety Specifications' document is governed by the "Occupational Health and Safety Act, 1993 (Act No. 85 of 1993), hereinafter referred to as 'The Act'. It should be noted that no single Act or its set of Regulations be read in isolation. Furthermore, although the definition of Health and Safety Specifications stipulates 'a documented specification of all health and safety requirements pertaining to associated works on a construction site, so as to ensure the health and safety of persons', it is required that the entire scope of the Labour Legislation, including the Basic Conditions of Employment Act be considered as part of the legal compliance system. With reference to this specification document this requirement is limited to all health, safety and environmental issues pertaining to the site of the project as referred to here-in. Despite the foregoing it is reiterated that environmental management shall receive due attention.

1.4. Due to the wide scope and definition of construction work, every construction activity and site will be different, and circumstances and conditions may change even on a daily basis. Therefore, due caution is to be taken by the Principal Contractor and contractors when drafting the Health and Safety Plan based on these Health and Safety Specifications.

1.5. Prior to drafting the Health and Safety Plan, and in consideration of the information contained here-in, the contractor shall set up a Risk Assessment Program to identify and determine the scope and details of any risk associated with any hazard at the construction site, in order to identify the steps needed to be taken to remove, reduce or control such hazard. The Health and Safety Plan shall include documented 'Methods of Statement' (see definitions under Regulation 1 of Construction Regulations) detailing the key activities to be performed in order to reduce as far as reasonably practicable, the hazards identified in the Risk Assessment.

1.6. Every effort has been made to ensure that this specification document is accurate and adequate in all respects. Should it however, contain any errors or omissions they may not be considered as grounds for claims under the contract for additional reimbursement or extension of time, or relieve the Principal Contractor and contractors from his responsibilities and accountability in respect of the project to which this specification document pertains. Any such inaccuracies, inconsistencies and/or inadequacies must immediately be brought to the attention of the Agent and/or Client.

2. SCOPE OF HEALTH AND SAFETY SPECIFICATION DOCUMENT

The Health and Safety Specifications pertaining to the project: ROOF REPLACEMENT AT CIVIC CENTRE.

These specifications are contained in the index and intend to specify the normal and specific requirements of CLIENT pertaining to the health and safety matters (including the environment) applicable to the project in question. These Specifications should be read in conjunction with the OHS Act 85, 1993 and its Regulations with specific reference to the Construction Regulations. This will also include any Safety Standards which were or will be promulgated under the Act or incorporated into the Act and be in force or come into force during the effective duration of the project. The stipulations in this specification, as well as those contained in all other documentation pertaining to the project, including contract documentation and technical specifications shall not be interpreted, in any way whatsoever, to countermand or nullify any stipulation of the Act, Regulations and Safety Standards which are promulgated under, or incorporated into the Act.

3. PURPOSE

The purpose of this specification document is to provide the relevant Principal Contractor (and sub-contractor) with any information other than the standard conditions pertaining to construction sites which might affect the health and safety of persons at work and of persons in connection with the use of plant and machinery. It further aims to protect persons other than its employees against any potential hazards to their health and safety arising out of or in connection with the activities of persons at work during the construction work for CLIENT.

3.1. To brief the Principle and Sub Contractor on the significant health and safety requirements and aspects of the project. This shall include the provision of the following information and requirements namely:

Safety considerations affecting the site of the project and its environment;

Health and safety aspects of the associated structures and equipment;

Required submissions on health and safety matters required from the Principal Contractor (and Sub Contractor);

And the Principal Contractor's (Sub - Contractors) health and safety plan.

3.2. To serve to ensure that the Principal Contractor (and Sub-Contractors) is fully aware of what is expected from them with regards to the Occupational Health and Safety Act, 85 of 1993 and the Regulations made there-under including the applicable safety standards, and in particular in terms of Section 8 of the Act.

3.3. To inform the Principal Contractor that the Occupational Health and Safety Act, 85 of 1993 in its entirety shall apply to the contract to which this specification document applies. The Construction Regulations promulgated on 7 February 2014 and incorporated into the above Act by Government Notice R 84, published in Government Gazette 37305 shall specifically apply to all persons involved in the construction work pertaining to this project.

4. DEFINITIONS

"Purpose of the Act" -To provide for the health and safety of persons at work and the health and safety of persons in connection with the use of plant and machinery; the protection of persons other than persons at work against hazards to health and safety arising out of or in connection with the activities of persons at work; to establish an advisory council for occupational health and safety; and to provide for matters connected therewith.

"agent" means a competent person who acts as a representative for a client.
"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 the surface, rather than sliding or crumbling away;
"bulk mixing 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 being performed;
"competent person" means a person who— a) has in respect of the work or task to be performed the required knowledge, training and experience and, where applicable, qualifications, specific to that work or task: Provided that where appropriate qualifications and training are registered in terms of the provisions of the National Qualification Framework Act, 2000 (Act No.67 of 2000), those qualifications and that training must be regarded as the required qualifications and training; and b) is familiar with the Act and with the applicable regulations made under the Act;
"construction manager" means a competent person responsible for the management of the physical construction processes and the coordination, administration and management of resources on a construction site;
"construction site" means a work place where construction work is being performed;
"construction supervisor" means a competent person responsible for supervising construction activities on a construction site;

"construction vehicle" means a vehicle used as a means of conveyance for transporting persons or material, or persons and material, on and off the construction site for the purposes of performing construction work;

"construction work" means any work in connection with—

a) the construction, erection, alteration, renovation, repair, demolition or dismantling of or addition to a building or any similar structure; or

b) the construction, erection, maintenance, demolition or dismantling of any bridge, dam, canal, road, railway, runway, sewer or water reticulation system; or the moving of earth, clearing of land, the making of excavation, piling, or any similar civil engineering structure or type of work;

"construction work permit" means a document issued in terms of regulation 3

"contractor" means an employer who performs construction work;

"demolition work" means a method to dismantle, wreck, break, pull down or knock down of a structure or part thereof by way of manual labour, machinery, or the use of explosives;

"design" in relation to any structure, includes drawings, calculations, design details and specifications;

"designer" means—

(a) a competent person who—

(i) prepares a design;

(ii) checks and approves a design; or

(iii) arranges for any person at work under his or her control to prepare a design (including an employee of that person where he or she is the employer); or

(iv) designs temporary work, including its components,

(b) an architect or engineer contributing to, or having overall responsibility for a design;

(c) a building services engineer designing details for fixed plant;

(d) a surveyor specifying articles or drawing up specifications;

(e) a contractor carrying out design work as part of a design and building project; or

(f) an interior designer, shop-fitter or landscape architect;

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

"explosive actuated fastening device" 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. Change explosive power tools to explosive actuated fastening device;

"fall arrest equipment" means equipment used to arrest a person in a fall, including personal equipment such as body harness, lanyards, deceleration devices, lifelines or similar equipment.

"fall prevention equipment" means equipment used to prevent persons from falling from a fall risk position, including personal equipment, a body harness, lanyards, lifelines or physical equipment such as guardrails, screens, barricades, anchorages or similar equipment;
"fall protection plan" means a documented plan, which includes and provides for- a) all risks relating to working from a fall risk position, considering the nature of work undertaken; b) the procedures and methods to be applied in order to eliminate the risk of falling; and c) a rescue plan and procedures
"fall risk" means any potential exposure to falling either from, off or into;
"health and safety file" means a file, or other record containing the information in writing required by these Regulations;
"health and safety plan" means a site, activity or project specific documented plan in accordance with the client's health and safety specification;
"health and safety specification" means a site, activity or project specific document prepared by the client pertaining to all health and safety requirements related to construction work;
"material hoist" means a hoist used to lower or raise material and equipment, excluding passengers;
"medical certificate of fitness" means a certificate contemplated in regulation 7(1)(8);
"mobile plant" means any machinery, appliance or other similar device that is able to move independently, and is used for the purpose of performing construction work on a construction site;
"National Building Regulations" means the National Building Regulations made under the National Building Regulations and Building Standards Act, 1977 (Act No. 103 of 1977), and promulgated by Government Notice No. R. 2378 of 30 July 1990, as amended by Government Notices No's R. 432 of 8 March 1991, R. 919 of 30 July 1999 and R. 547 of 30 May 2008;
"person day" means one normal working shift of carrying out construction work by a person on a construction site;
"principal contractor" means an employer appointed by the client to perform construction work;
"Professional Engineer or Professional Certificated Engineer" means a person holding registration as either a Professional Engineer or Professional Certificated Engineer in terms of the Engineering Profession Act, 2000 (Act No. 46 of 2000);
"Professional Technologist" means a person holding registration as a Professional Engineering Technologist in terms of the Engineering Profession Act, 2000;
"provincial director" means the provincial director as defined in regulation 1 of the General Administrative Regulations, 2003;

"scaffold" means a temporary elevated platform and supporting structure used for providing access to and supporting workmen or materials or both;
"shoring" means a system used to support the sides of an excavation and which is intended to prevent the cave-in or the collapse of the sides of an excavation;
"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, bulk mixing plant, 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 falsework, 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 construction work which includes installation, commissioning, decommissioning or dismantling and where any construction work involves a risk of a person falling;
"suspended platform" means a working platform suspended from supports by means of one or more separate ropes from each support;
"temporary works" means any falsework, formwork, support work, scaffold, shoring or other temporary structure designed to provide support or means of access during construction work;
"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.

4.1. ABBREVIATIONS:

- GMR: General Machinery Regulations
- OHS Act: Occupational Health & Safety Act. Act 85 of 1993
- Constr. Reg: Construction Regulation 2014
- ORHVS: Operating Regulations for High Voltage Systems
- PPE: Personal Protective Equipment

5. OCCUPATIONAL HEALTH & SAFETY MANAGEMENT

5.1. ROLES AND ORGANISATION OF HEALTH AND SAFETY RESPONSIBILITIES:

All responsibilities fall under the legal requirement of legal appointment letters - each responsible person must have an appointment letter (also attached proof of competency for each appointee).

ROLE	RESPONSIBILITIES
Client Client Agent	The Client and/or its Agent shall ensure that the Principal Contractor, appointed in terms of Construction Regulation 5(1) (l), implements and maintains the agreed and approved Health and Safety Plan. Failure on the part of the Client or Agent to comply with this requirement will not relieve the Principal Contractor from any duties under the Act and Regulations.
CEO - Principle Contractor	The Chief Executive Officer of the Principal Contractor in terms of Section 16 (1) of the Act to ensure that the Employer (as defined in the Act) complies with the Act. The pro forma Legal Compliance Audit may be used for this purpose by the Principal Contractor or his/her appointed contractor.
Person responsible for Health and Safety Section 16(2)	All OHS Act (85 /1993), Section 16 (2) appointee/s as detailed in their respective appointment forms shall regularly, in writing, report to management on health and safety matters or deviations identified during routine or ad hoc inspections/ audits. All reports shall be made available to the principal Contractor to become part of their site records (Health & Safety File).
Construction Manager Or Assistant	The Construction Manager and Assistant Construction Supervisor/s appointed in terms of Construction Regulation 8 shall regularly, in writing, report to their managers on health and safety matters or deviations identified during inspections. All reports shall be made available to the principal Contractor to become part of site records (Health & Safety File). This manager must be registered with SACPCMP.
SHE Representatives	All Health and Safety Representatives (SHE-Reps) shall act and report as per Section 18 of the Act. She Representatives shall inspect and monitor activities on a daily basis and report finding to the Client and Health and Safety manager immediately. These safety representatives have the right to stop any unsafe work or work due to unsafe conditions and report findings and reason immediately to CLIENT management.
Other Legal Appointees	Further (Specific) Supervision Responsibilities for OH&S Several appointments or designations of responsible and /or competent people in specific areas of construction work are required by the Act and Regulations. The following competent appointments, where applicable, in terms of the Construction Regulations are required to ensure compliance to the Act, Regulations and Safety Standards.

LEGAL APPOINTMENTS AS REQUIRED IN THE CONSTRUCTION REGULATIONS			
Item	Construction Regulation	Appointment	Responsible Person
1.	5(1)(h)	Principal contractor for each phase or project	Client
2.	7(c)(v)	Contractor	Principal Contractor
3.	7(2)(c)	Contractor	Contractor
4.	8(1)	Construction Manager	Principal Contractor
5.	8(2)	Construction Manager sub-ordinates	Principal Contractor
6.	8(6)	Construction Safety Officer	Principal Contractor & Contractor
7.	9(1)	Person to carry out risk assessment	Principal Contractor & Contractor
8.	10(1)(a)	Fall protection planner	Principal Contractor & Contractor
9.	13(1)(a)	Excavation supervisor	Principal Contractor & Contractor
10.	OHS ACT 17(1)	OHS Reps	Principal Contractor & Contractor
11.	GSR 3/5	First Aid Attendant	Principal Contractor & Contractor
12.	14(1)	Supervisor demolition work	Principal Contractor & Contractor
13.	14(2) + (3)	Demolition expert	Principal Contractor & Contractor
14.	14(11)	Explosives expert	Principal Contractor & Contractor
15.	16(1)	Scaffold supervisor	Principal Contractor & Contractor
16.	17(1)	Suspended platform supervisor	Principal Contractor & Contractor
17.	20(1)	Bulk mixing plant supervisor	Principal Contractor & Contractor
18.	20(2)	Bulk mixing plant operator	Principal Contractor & Contractor
19.	23(1)(d)(i)	Construction vehicle and mobile plant operator	Principal Contractor & Contractor
20.	23(1)(k)	Construction vehicle and mobile plant inspector	Principal Contractor & Contractor
21.	24(d)	Temporary electrical installations inspector	Principal Contractor & Contractor
22.	24 (e)	Temporary electrical installations controller	Principal Contractor & Contractor
23.	28 (a)	Stacking and storage supervisor	Principal Contractor & Contractor
24.	29 (h)	Fire equipment inspector	Principal Contractor &Contractor

5.2. COMMUNICATION:

5.2.1. Communication between the Employer, the Principal Contractor, Sub Contractors, Project manager, Architect and other concerned parties shall take place in the SHE Committee or Project meeting.

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

5.2.3. The workforce may consult on Health and Safety matters with their Supervisor or She Representative.

5.2.4. The Principal Contractor shall be responsible for the dissemination of all relevant Health and Safety information to Sub Contractors and other Contractors e.g. design changes agreed with the Client and its Agent; instructions issued by the Client agent, exchange of information between Contractors, the reporting of hazardous/dangerous conditions/situations etc.

6. INTERPRETATION

6.1. The Occupational Health and Safety Act and all its Regulations, with the exception of the Construction Regulations, distinguish between the roles, responsibilities and functions of employers and employees respectively. It views consultants and contractors as employees of the "owner" of a construction or operational project, the "owner" being regarded as the employer. Only if formally agreed to by way of the written agreement in this regard between the "owner(s)" and consultant and /or between the "owner(s)" and the contractor(s), will these assumptions be relinquished in favour of the position agreed upon between the relevant parties.

6.2. In terms of the Construction Regulations the **"owner",** in terms of its instructions, operates (has to operate) in the role of client as per relevant definition.

6.3. The contractors working for the "client" are seen to be in two categories, i.e. the Principal Contractor and Sub-Contractors. The Principal Contractor has to take full responsibility for the health and safety on the site of the relevant project / contract. This includes monitoring health and safety conditions and overseeing administrative measures required by the Construction Regulations from all contractors on the project site.

6.4. Sub-Contractors are required to operate under the control (in terms of all health and safety measures which are covered in the Construction Regulations) of the Principal Contractor. Where, for the work the Principal Contractor will have to execute himself, practical health and safety measures are applicable, he will also be subject to the relevant requirements with which Sub Contractors have to comply. The Principal Contractor will, however, not have to actually fulfill such requirements in respect of any of the work / functions of any (ordinary / sub) Contractors on the site for which he has been appointed as Principal Contractor. However, he has to monitor / oversee such processes, ensuring that the requirements are complied with and that the required appointments / evaluations / inspections / assessments and tests are done and that the records are duly generated and kept as prescribed in the Construction Regulations. This has to feature clearly in the Principal Contractor's Health and Safety Plan.

Should you intend to appoint any subcontractor/s to assist you on this project, please ensure that they comply to the above as well. Also ensure that you draw up an agreement in terms of Sec. 37(2) of the Occupational Health & Safety Act 85 of 1993 with your subcontractor/s.

A list of all sub-subcontractors you intend to use on site to carry out any part of your works must be submitted to the Main Contractor prior to commencement of your subcontract works. In addition you must ensure that any sub-subcontractors observes and complies with all applicable project health, safety, quality and environmental requirements.

Permit to work: Sub-contractors:

To ensure that ALL subcontractors adhere to Main Contractors Health & Safety requirements the Main Contractor has to introduce a "Permit to Work" system.

The permit will be issued by the Safety Officer/Project Manager once he is satisfied that the Subcontractors personnel have been properly inducted, his health and safety plan is in order, the appropriate PPE has been issued, all appointments are in place and the operators of any plant and equipment have the required proof of competency.

The subcontractor will not be allowed to commence any work on site until he has in he's possession a permit to work.

Any subcontractor found to be working on site without a permit will be put off site immediately and will not be entitled to any payment.

7. RESPONSIBILITIES

7.1. CLIENT:

a) The Client or the appointed Client Agent will appoint each Principal Contractor for this project or phase/section of the project in writing for assuming the role of Principal Contractor as intended by the Construction Regulations.

b) The Client or the appointed Client Agent shall discuss, negotiate and approve the contents of the specified project health and safety plan submitted by the Principal and Sub Contractor.

c) The Client or his Agent will take reasonable steps to ensure that the health and safety plan of the Principle and Sub Contractor is correctly implemented and maintained. Periodical audits agreed between the client and the principal and any contractor (audits to take place at least every 30 days CR5.1 (o) shall be conducted to monitor the compliance.

d) The Client or his appointed Agent on his behalf, will prevent the Principal Contractor and/or the Contractor from commencing or continuing with construction work should the Principal Contractor and/or the Contractor at any stage in the execution of the works be found to:

- Have failed to have complied with any of the administrative measures required by the Construction Regulations in preparation for the construction project or any physical preparations necessary in terms of the Act;
- Have failed to implement or maintain their health and safety plan;
- Have executed construction work which is not in accordance with their health and safety plan;
- Have acted in any way which may pose a threat to the health and safety of any person(s) present on the site of the works or in its vicinity, irrespective of him/them being employed or legitimately on the site of the works or in its vicinity.

7.2. PRINCIPAL CONTRACTOR:

a) The Principal Contractor shall accept the appointment under the terms and Conditions of Contract. The Principal Contractor shall sign and agree to those terms and conditions and shall, before commencing work.

b) The Principal Contractor shall ensure that he is fully conversant with the requirements of this Specification and all relevant health and safety legislation. This Specification is not intended to supersede the Act nor the Construction Regulations or any part of either. Those sections of the Act and the Construction Regulations which apply to the scope of work to be performed by the Principal Contractor in terms of this contract (entirely or in part) will continue to be legally required of the Principal Contractor to comply with. The Principal Contractor will in no manner or means be absolved from the responsibility to comply with all applicable sections of the Act, the Construction Regulations or any Regulations proclaimed under the Act or which may perceivable be applicable to this contract.

c) The Principal Contractor shall provide and demonstrate to the Client a suitable and sufficiently documented health and safety plan based on this Specification, the Act and the Construction Regulations, which shall be applied from the date of commencement of and for the duration of execution of the works. This plan shall, as appendices, include the health and safety plans of all Sub-contractors for which he has to take responsibility in terms of this contract.

d) The Principal Contractor shall provide proof of his registration and good standing with the Compensation Fund or with a licensed compensation insurer prior to commencement with the works.

e) The Potential Principal Contractor shall, in submitting his tender, demonstrate that he has made provision for the cost of compliance with the specified health and safety requirements, the Act and Construction Regulations. (Note: This shall have to be contained in the conditions of tender upon which a tenderer's offer is based.)

f) The Principal Contractor shall consistently demonstrate his competence and the adequacy of his resources to perform the duties imposed on the Principal Contractor in terms of this Specification, the Act and the Construction Regulations.

g) The Principal Contractor shall ensure that a copy of his health and safety plan is available on site and is presented upon request to the Client, the Client's agent, an Inspector, Employee or Sub- contractor.

h) The Principal Contractor shall ensure that a health and safety file, which shall include all documentation required in terms of the provisions of this Specification, the Act and the Construction Regulations, is opened and kept on site and made available to the Client or Inspector upon request. Upon completion of the works, the Principal Contractor shall hand over a consolidated health and safety file to the Client.

i) The Principal Contractor shall, throughout execution of the contract, ensure that all conditions imposed on his Sub-contractors in terms of the Act and the Construction Regulations are complied with as if they were the Principal Contractor. All sub-contractors to be audited once a month by PC.

j) The Principal Contractor shall from time to time evaluate the relevance of the Health and Safety Plan and revise the same as required, following which revised plan shall be submitted to the Client and/or his/her Agent for approval.

8. SCOPE OF WORK

These specifications are applicable to the specific Scope of Work pertaining to Roof Replacement at Civic Centre, Finishes and Fittings.

As a result of the inherent generic nature of the Health and Safety Specifications document, specific relevant information on the project will be provided and will be attached to this document.

If at any time after commencement of the project changes are brought about to the design or construction, sufficient health and safety information and appropriate resources are to be made available to the Principal Contractor to execute the work safely.

Contractors are to appoint a full-time CONSTRUCTION HEALTH AND SAFETY OFFICER (in terms of Construction Regulation 8) will be required on this project. The construction Health and safety officer will be required to carry out basic functions of CHSO, as per SACPCMP Requirements. CHSO, should be registered with the SACPCMP. Provide proof of Registration or proof that Application for registration has been done and submitted to SACPCMP.

According to Construction Regulation 7(1)(c)(ii) the contractor must make provision for the cost of health and safety measures during the construction process. When submitting a tender the Principal Contractor shall therefore, make provision for the cost of health and safety measures in terms of their documented Health and Safety Plan and Clients Health and Safety Specifications. The cost shall be clearly specified and quantified within the tender document under a section for health and safety.

9. HEALTH AND SAFETY FILE

The Principal Contractor must, in terms of Construction Regulation 7(2)(b), keep a Health & Safety File on site at all times that must include all documentation required in terms of the Act and Regulations and must also include a list of all Contractors on site that are accountable to the Principal Contractor and the agreements between the parties and details of work being done.

A more detailed list of documents and other legal requirements that must be kept in the Health and Safety File is attached as an addendum to this document.

IMPORTANT:

The Health and Safety File will remain the property of the Client and/or its Agent on its behalf throughout the period of the project and shall be consolidated and handed over to the Client and/or its Agent on its behalf at the time of completion of the project.

The Occupational Health & Safety file must consist of the following documentation

NR	INDEX/DESCRIPTION
1.	Appointment Letter from the Client
2.	Notification of Construction work
3.	Letter of Good Standing - COID
4.	Copy of Public Liability Insurance Policy
5.	Health and Safety Specifications
6.	Scope of Works
7.	Tool and machinery List
8.	Method statement of all work that will be conducted
9.	Risk Assessment guide / procedure (plan)
10.	Baseline Risk Assessments
11.	Safe Work Procedure of all risks
12.	Health and Safety Information from Designer
13.	Medical Certificates (Done by Registered Occupational Medical Practitioner - Annexure 3)
14.	All Health and Safety Related policies
15.	Section 37.2 Agreements
16.	Induction Training information
17.	Site Specific Emergency numbers and Emergency Plan
18.	Site Specific Fall Protection and Rescue Plan
19.	Site Specific Health and Safety Plan
20.	Incident/Accident Management Control
21.	Traffic Management Plan
22.	Contractor Control Procedures
23.	Environmental Management
24	Hazardous Chemical Substance Register and MSDS
25.	Example of monthly Health and Safety Report
26.	Health and Safety Organogram
27.	Occupational Health and Safety (Construction) Appointments - With CV & Competencies
28.	Certificates for all lifting equipment
29.	Sample of all registers that will be used on site
30.	Copy of Construction Building Plans (A4)
31.	Copy of the Occupational Health and Safety Act and Construction Regulations 2014
32.	Checklists
33	List of Plant on Site

NOTE: All daily checklists and registers should be kept in a separate Work File.

10. OH&S GOALS AND OBJECTIVES AND ARRANGEMENTS FOR MONITORING AND REVIEWING OH&S PERFORMANCE (5x Safety Cardinal Rules)

The Principal Contractor is required to maintain an acceptable disabling incident frequency rate (DIFR) and report monthly on their performance to the Client or its Agent.

10.1. 3 X CARDINAL SAFETY RULES:

These rules are being implemented to prevent serious injury or death of any employee, labour broker, contractor employees, stakeholders or the public working/visiting any area on construction site.

The rules are:

RULE	DESCRIPTION OF RULE
Rule 1	Open, Isolate, Test, Earth, Bond and/or Insulate before Touch No person may work on any electrical network unless: • He / she is trained and authorised as competent for the task to be done. • A pre-task risk assessment to identify all risks and hazards has been conducted prior to any work commencing. • An equipotential zone is created for each worker on the job site by earthing, bonding and/or insulating according to approved procedures. • All conducting material is connected together, all staff on site wears electrical safety shoes and insulating techniques are applied according to standards. • The authorised person (team leader) has certified and shown all team members that the apparatus is safe to work on.
Rule 2	Hook up at heights Any person who performs work higher than two metres above ground level shall be attached to an anchor point at all times, or as identified during the risk assessment.
Rule 3	Be Sober No person is allowed to be under the influence of intoxicating liquor or drugs while on duty.

Distribution will take a stance of zero tolerance on these rules.

Any non-compliance to any health and safety requirement in this SHE specification is subject to discipline/removal of person from the project site.

Non-compliance to a cardinal rule will be considered serious misconduct and will lead to serious disciplinary action, which may include dismissal.

11. IDENTIFICATION OF HAZARDS AND DEVELOPMENT OF RISK ASSESSMENTS, STANDARD WORKING PROCEDURES (SWP) AND METHOD STATEMENTS

The Principal Contractor is required to perform risk assessments, compile Standard Working Procedures (SWP) and Method Statements for each activity executed in the contract or project.

The identification of hazards is over and above the hazards identification program and those hazards identified during the drafting of the Health and Safety Plan.

12. ARRANGEMENTS FOR MONITORING AND REVIEW

12.1. MONTHLY AUDIT BY CLIENT OR ITS AGENT

The Client and/or its Agent on its behalf will be conducting Periodic Audits at times agreed with the Principal Contractor to comply with Construction Regulation 7(1)(*c*)(vii) to ensure that the principal Contractor has implemented, is adhering to and is maintaining the agreed and approved OH&S Plan (audits will be done at least once every 30 days). This will include physical site conditions and administrative controls.

12.2. OTHER AUDITS AND INSPECTIONS BY CLIENT OR AGENT:

The Client or its Safety Agent reserves the right to conduct any ad hoc safety audits and inspections as it deems necessary.

A representative of the Principal Contractor and the relevant Health and Safety Representative(s) (SHE-Reps) must accompany the Client and/or its Agent on all Audits and Inspections and may conduct their own audit/inspection simultaneously. Each party will, however, take responsibility for the results of his/her own audit/inspection results. The Client or its Agent may request a copy of the Principle Contractor SHE Committee meeting minutes, reflecting possible recommendations made by that committee to the Employer for reference purposes.

12.3. INCIDENT INVESTIGATION AND REPORTING:

12.3.1. The Principal Contractor shall report all incidents where an employee is injured on duty to the extent that he/she:

- Dies
- Becomes unconscious
- Loses a limb or part of a limb
- Is injured or becomes ill to such a degree that he/she is likely either to die or to suffer a permanent physical defect or likely to be unable for a period of at least 14 days either to work or continue with the activity for which he/she was usually employed

Or where:

- A major incident occurred
- The health or safety of any person was endangered (this could be a near miss) and
- Where a dangerous substance was spilled
- The uncontrolled release of any substance under pressure took place
- machinery or any part of machinery fractured or failed resulting in flying, falling or uncontrolled moving objects
- machinery ran out of control,

To the Provincial Director of the Department of Labour within seven days and at the same time to the Client or its Agent.

Refer in this regard to Section 24 of the Act & General Administrative Regulation 8.

12.3.2. The Principal Contractor is required to provide the Client and/or its Agent on its behalf with copies of all statutory reports required in terms of the Act and the Regulations.

12.3.3. The Principal Contractor is required to provide the Client and/or its Agent on its behalf with a monthly "SHE Risk Management Report".

12.3.4. The Principal Contractor is required to provide a.s.a.p. the Client and/or its Agent on its behalf with copies of all internal and external accident/incident investigation reports including the reports contemplated in 12.7, 12.8.2, 15, 16, 17, 21 and 22 below. As soon as the occurrence of any accident/incident of whatever nature comes to the notice of the Principal Contractor, it shall be reported immediately to any of the following:

- Project Manager / Client Agent
- Health and Safety Manager.

12.4. REVIEW:

The Principal Contractor is to review the Hazard Identification, Risk Assessments and Standard Work Processes at each Construction Planning and Progress Report meeting as the construction work develops and progresses. Each time changes are made to the designs, plans and construction methods and processes. These items must be reviewed.

The Principal Contractor must provide the Client and/or its Agent on its behalf, other Contractors and all other concerned parties with copies of any changes, alterations or amendments as contemplated in the above paragraph.

12.5. SITE RULES AND OTHER RESTRICTIONS:

12.5.1. *Site OH&S Rules*

The Principal Contractor must develop a set of site-specific Health and Safety Rules that will be applied to regulate the Health and Safety Plan and associated aspects of the construction project.

When required for a site by law, visitors and non-employees upon entering the site shall be issued with the proper Personal Protective Equipment (PPE) as and when necessary.

12.5.2. *Security Arrangements*

The Principal Contractor must establish site access rules and implement and maintain these throughout the construction period. Access control must include the rule that non-employees shall at all times be provided with fulltime supervision while on site.

Additional Access Rules may be imposed by the Project Manager or Client Agent in the interest of the safety of CLIENT employees, visitors and customers.

The Principal Contractor must develop a set of Security rules and procedures for their allocated site and maintain these throughout the construction period. These security rules must be submitted to the Client for approval. Additional security measures or rules may be specified for risk minimisation purposes.

If not already tasked to the H&S Officer appointed in terms of Construction Regulation 8(6), the Principal Contractor must appoint a competent Emergency Controller who must develop contingency plans for any emergency that may arise on site as indicated by the risk assessments. These must include a monthly practice/testing programme for the plans e.g. January: trench collapse, February: flooding etc. and practiced/tested with all persons on site at the time, participating.

12.6. TRAINING:

The Principal Contractors and sub-contractors must have the appropriate qualifications, certificates and tickets, and are under competent supervision. Records of all training and qualifications of all contractor employees must be kept. The Contractor shall maintain comprehensive records of all employees under the contractor's control (including all employees of the sub-contractor) attending induction training. Acknowledgement of receiving and understanding the induction must be signed by all persons receiving the induction respectively.

12.6.1. *General Induction Training*

All employees of the Principal and other Contractors must be in possession of proof of General Induction training. Sub-contractors to have proof of permit to work.

12.6.2. *Site Specific Induction Training*

All employees of the Principal and other Contractors must be in possession of Site Specific Occupational Health and Safety Induction or other qualifying training.

12.6.3. Other Training

- All operators, drivers and users of construction vehicles, mobile plant and other equipment must be in possession of valid licenses and proof of training.
- All employees performing jobs requiring specific training in terms of the OHS Act 85, 1993 and
- Regulations must submit proof of such training.
- Occupational Health and Safety Training Requirements: (as required by the Construction Regulations and as indicated by the Health and Safety Specification Document & the Risk Assessment/s and recommendations by the Health and Safety Committee):

- General Induction (Section 8 of the Act)
- Site/Job Specific Induction (also visitors) (Sections 8 & 9 of the Act)
- Site/Project Manager
- Construction Supervisor
- OH&S Representatives (Section 18 (3) of the Act)
- Training of the Appointees indicated in 12.6.1 & 12.6.2 above
- Operation of Cranes (Driven Machinery Regulations 18 (11)
- Operators & Drivers of Construction Vehicles & Mobile Plant (Construction Regulation 23)
- Basic Fire Prevention & Protection (Environmental Regulations 9 and Construction Regulation 29)
- As a minimum basic First Aid to be upgraded when necessary (General Safety Regulations 3)
- Storekeeping Methods & Safe Stacking (Construction Regulation 28)
- Emergency, Security and Fire Coordinator

12.6.4. Visitors to site

Visitors to the site shall be required to undergo and comply with Client/Agents site-specific safety induction requirement prior to being allowed access to site.

All visitors must remain in the care and custody of a person (host) who has been properly inducted. No visitors are permitted to undertake any construction work, of any nature.

12.6.5. Toolbox Talk

Contractors are expected to have a daily toolbox meeting. The meeting is expected to be brief and concise. Subject topics are applicable to the job/task at hand. Near misses, accidents and up-coming work to be discussed along with suggestions and comments. These meetings can be used as a training meeting with a central idea of educating employees.

12.7. INCIDENT INVESTIGATION:

The Principal Contractor is responsible to oversee the investigation of all incidents. This will include first aid, medical treatment by a doctor and hospital or clinic cases. (General Administrative Regulation 9)

All incidents must be recorded in the Accident/Incident Register. (General Administrative Regulation 9)

The Principal Contractor is responsible for the investigation of all incidents as described in Section 24 (1) (b) & (c) of the Act and keeping a record of the results of such investigations including the corrective action to prevent similar incidents in future.

The Principal Contractor is responsible for the investigation of all road traffic accidents relating to the construction site and keeping a record of the results of such investigations including the steps taken to prevent similar accidents in future.

Notwithstanding the requirements of Section 24 of the Act, All incidents shall be investigated and reported on in writing, irrespective of whether such incident gave rise to injury or damage.

12.8. SHE REPRESENTATIVES AND SHE COMMITTEES:

12.8.1. Designation of SHE Representatives

- Where the Principal Contractor employs more than 20 persons (including the employees of the
- Sub-Contractors) he has to appoint a minimum of one SHE Representatives, then he must
- Appoint one for every 50 employees or part thereof. (OHS Act 85, 1993 - Section 17 and GAR 6; 7.)
- These SHE Representatives shall be designated in writing.

12.8.2. Duties and Functions of the H&S Representatives (This is based on the Construction norms and is not an exhaustive list)

- The Principal Contractor must ensure that the designated SHE Representatives conduct a formal weekly inspection of their respective areas of responsibility using a checklist. All findings must be reported to the Principal Contractor. The reports shall be submitted to the Health and Safety Committee for action. Record shall be kept in the form of minutes.
- SHE Representatives must take part in incident investigations.
- SHE Representatives shall be members of at least one SHE Committee and attend all the SHE Committee meetings.

12.8.3. Establishment of H&S Committee(s)

The Principal Contractor must establish H&S Committees consisting of designated H&S Representatives together with a number of Employers Representatives appointed as per Section 19(3) that are not allowed to exceed the number of H&S Representatives on the committee. The persons nominated by the employer on an H&S Committee must be designated in writing for such period as may be determined by him. The H&S Committee shall co-opt advisory (temporary) members (who are not allowed to vote on issues discussed) and determine the procedures of the meetings including the chairmanship.

Legally, the H&S Committee must meet minimum every 3 months but it is advised that they meet at least once a month and consider, at least, the following Agenda for the *first meeting*. Thereafter the H&S Committee shall determine its own procedures as per the previous paragraph.

Agenda:

1) Opening and determining of chairmanship (only when necessary)
2) Facilities and Hygiene
3) Housekeeping
4) Incidents and incident investigation
5) Inspection checklists and Registers:
   a. H&S Rep. Inspections
   b. Matters of First Aid
   c. Scaffolding
   d. Ladders
   e. Excavations
   f. Portable Electric Equipment
   g. Fire Equipment

h. Explosive Power Tools
i. Power Hand tools
j. Incident Investigation reports
k. Pressure Equipment and vessels under pressure
l. Personal Protective Equipment

6) Safety Statistics
7) Health and Safety Awareness / Training / Posters and Symbolic signs
8) First Aiders and First Aid equipment
9) Demarcation of work- /hazardous-/safe areas/walkways
10) Safety Suggestions
11) Environmental Management
12) General
13) Date of Next Meeting
14) Closing

13. PROJECT/SITE SPECIFIC REQUIREMENTS

The following is a list of specific activities and considerations that have been identified for the project and site and for which Risk Assessments, Standard Working Procedures (SWP), management and control measures and Method Statements (where necessary) have to be developed by the Principal Contractor:

Shaft interior	All brickwork and concrete to be even and clean before lift shaft is installed. Brickwork (stock bricks) facing shaft to be fair face with joints neatly struck level and no projections left on brickwork surface. The lift shaft will close off the building face of the shaft and no additional finishes is required
Building exterior	New brickwork and concrete beams exposed on building exterior to be finished with sand/cement plaster, primed and painted with two finishing coats super acrylic to match the existing paint.
Building interior	New brickwork and concrete beams exposed on building interior to be finished with sand/cement plaster, primed and painted two finishing coats super acrylic to match the existing paint.
Structural joints	Plaster joints between brickwork and concrete to be filled evenly with flexible acrylic joint filler and painted over to same as wall/beam/column. Structural joints in floor tor engineer's specification. Install flexible tile movement joint strip in floor tiles over structural joints
Dry walling	Soundproof dry wall system with taped and skimmed joints. Prime skimmed joints and paint partition on both sides with 3 coats super acrylic paint. Colour to later specification. Dry wall to extend from top of existing tiled floor to underside of existing ceiling.
Wall tiles	Tile masonry wall backing whb and wc in mayor's office from floor to ceiling with ceramic wall tiles. Allow R 130 (VAT incl) PC/m2 for tiles only.

Ceilings	Extend existing suspended 1200x600mm white steel t-grid ceiling with lay-in vinyl faced gypsum tiles in to new lift lobby areas. Take ceiling up to lift shaft and finish with a shadow line cornice on all edges Second floor: Install a plaster board ceiling with taped and skimmed joints on the same level as existing plastered concrete soffit (2 945mm ffl to be confirmed on site) and finish with a shadow-line cornice all round. Skimmed joints to be primed and entire ceiling to be painted with three coats super acrylic paint - colour "brilliant white"
Floor tiles	Carefully remove terracotta floor tiles in areas with demolishing work and re-install in ground floor and first floor lift lobby area. Second floor: Install new ceramic tiles in new lobby area to match tiles in stair lobby. Allow R 130 (VAT incl) PC/m2 for tiles only.

13.1. THE FOLLOWING ARE IN PARTICULAR REQUIREMENTS DEPENDING ON SCOPE OF WORKS AND WILL FORM A BASIS FOR COMPLIANCE AUDITS:

1) Administrative and Legal Requirements
2) Education, Training & Promotion
3) Public Safety and Emergency Preparedness
4) Personal Protective Equipment
5) Housekeeping
6) Scaffolding
7) Ladders
8) Electrical Safeguarding
9) Emergency Procedures /Fire Prevention and Protection
10) Tools
11) Personnel and Material Hoists
12) Transport and Materials Handling
13) Stacking and Storage Site/ Yards
14) Health and Hygiene
15) Facilities

14. OUTLINED DATA, REFERENCES AND INFORMATION ON CERTAIN AND/OR SPECIFIC OBLIGATORY REQUIREMENTS TO ENSURE COMPLIANCE

14.1. ADMINISTRATIVE & LEGAL REQUIREMENTS:

OHS Act Section/ Regulation	Subject	Requirements
Construction. Regulation 3 & 4	Application for construction work permit Notice of carrying out Construction work	Department of Labour must be notified by the client and by the contractor. Copy of Notice available on Site. Work permit to be displayed at the entrance.
General Admin. Regulation 4	Copy of OH&S Act (Act 85 of 1993)	Updated copy of Act & Regulations available on site. Readily available for perusal by employees.
COID Act Section 80	Registration with Compensation Insurer	Written proof of registration/Letter of good standing available on Site

OHS Act Section/ Regulation	Subject	Requirements
Construction. Regulation 5(1)	SHE Specification and Program	SHE Spec received from Client and/or its Agent SHE Program developed and updated.
Section 8(2)(d) of the OHS Act and Regulation 5(1) of the Construction Rag.	Hazard Identification & Risk Assessment	Identifications of hazards/Recorded Risk Assessment and - Plan drawn up/Updated Risk Assessment Plan available on Site Employees/Sub-Contractors informed/trained
Section 16(2)	Assigned duties (Managers)	Responsibility of complying with the OH&S Act assigned to other person/s by CEO.
Construction. Regulation 8(1)	Designation of Person Responsible on Site	Competent person appointed in writing as Construction Manager with job description
Construction. Regulation 8(2)	Designation of Assistant for above	Competent person appointed in writing as Assistant Construction Manager with job description
Section 17 & 18 General Administrative Regulations 6 & 7	Designation of SHE Representatives	More than 20 employees - one H&S Representative, one additional H&S Rep. for each 50 employees or part thereof. Designation in writing, period and area of responsibility specified in terms of GAR 6 & 7 Meaningful H&S Rep. reports. Reports actioned by Management.
General Administrative Regulations 5	Committee/s	All SHE Reps shall be members of SHE Committees Additional members are appointed in writing. Meetings held monthly, Minutes kept. Actioned by Management.
Section 37(1) & (2)	Agreement with Mandatories/ Sub-Contractors	Written agreement with (Sub-)Contractors List of Sub Contractors displayed. Proof of Registration with Compensation Insurer/ Letter of Good Standing (COID) Construction Manager designated Written arrangements regarding SHE Reps and Committee (OHSA Section 17,18) Written arrangements for First Aid (COID)
Section 24 & General Admin. Regulation 8 COID Act Sect.38, 39 & 41	Reporting of Incidents (Dept. of Labour)	Incident Reporting Procedure displayed. All incidents in terms of Sect. 24 reported to the Provincial Director, Department of Labour, within 3 days. (Annexure 1?)(WCL 1 or 2) and to the Client and/or its Agent on its behalf Cases of Occupational Disease Reported Copies of Reports available on Site Record of First Aid injuries kept

OHS Act Section/ Regulation	Subject	Requirements
General Admin. Regulation 9	Investigation and Recording of Incidents	All injuries which resulted in the person receiving medical treatment other than first aid, recorded and investigated by investigator designated in writing. Copies of Reports (Annexure 1) available on Site Tabled at H&S Committee meeting Action taken by Site Management.
Construction. Regulation 10	Fall Prevention & Protection	Competent person appointed to draw up and supervise the Fall Protection Plan Proof of appointees competence available on Site Risk Assessment carried out for work at heights Fall Protection Plan drawn up/updated and available on Site
Construction. Regulation 10(5)	Roof work	Competent person appointed to plan & supervise Roof work. Proof of appointees competence available on Site Risk Assessment carried out Roof work Plan drawn up/updated Roof work inspect before each shift. Inspection register kept Employees medically examined for physical & psychological fitness. Written proof on site
Construction. Regulation 14	Demolition Work	Competent person/s appointed in writing to supervise and control Demolition work Written Proof of Competence of above appointee/s available on Site Risk Assessment carried out Engineering survey and Method Statement available on Site Inspections to prevent premature collapse carried out by competent person before each shift. Inspection register kept
Construction. Regulation 16	Scaffolding	Competent persons appointed in writing to: - erect scaffolding (Scaffold Erector/s) - act as Scaffold Team Leaders - inspect Scaffolding weekly and after inclement weather (Scaffold Inspector/s) Written Proof of Competence of above appointees available on Site Copy of SABS 085 available on Site Risk Assessment carried out Inspected weekly/after bad weather. Inspection register/s kept

OHS Act Section/ Regulation	Subject	Requirements
Construction. Regulation 24/ Electrical Machinery Regulations 9 & 10/Electrical Installation Regulations	Inspection & Maintenance of Electrical Installation & Equipment (including portable electrical tools)	Competent person appointed in writing to inspect/test the installation and equipment. Written Proof of Competence of above appointee available on Site. Inspections: - Electrical Installation & equipment inspected after installation, after alterations and quarterly. Inspection Registers kept Portable electric tools, electric lights and extension leads must be uniquely identified/ numbered. Weekly visual inspection by User/Issuer/Store man. Register kept.
Construction Regulation 25	Use of temporary storage of flammable liquids on construction site	Flammable liquids must be stored in a way that it does not cause a fire or explosion hazard, and that the workplace is well ventilated. Suitable notices to be posted.
Construction Regulation 27	Housekeeping	Suitable housekeeping measures must be implemented to reduce the risk of injuries and damage to the structures, machinery, etc. Debris must be removed with a chute from a high place. Construction area must be fenced off.
Construction. Regulation 28/ General Safety Regulation 8(1)(a)	Designation of Stacking & Storage Supervisor.	Competent Person/s with specific knowledge and experience designated to supervise all Stacking & Storage Written Proof of Competence of above appointee available on Site
Construction. Regulation 29/ Environmental Regulation 9	Designation of a Person to Co-ordinate Emergency Planning And Fire Protection	Person/s with specific knowledge and experience designated to co-ordinate emergency contingency planning and execution and fire prevention measures Emergency Evacuation Plan developed: - Drilled/Practiced - Plan & Records of Drills/Practices available on Site Fire Risk Assessment carried out All Fire Extinguishing Equipment identified and on register. Inspected weekly. And inspection register kept. Serviced annually

OHS Act Section/ Regulation	Subject	Requirements
Construction Regulation 30	Employees Facilities	The contractor must provide and maintain in hygienic condition facilities for employees that include: Showers (1 for every 15 employees) Sanitary facilities for each sex (1 for every 30 employees) Changing facilities for each sex Sheltered eating areas
General Safety Regulation 3	First Aid	Every workplace provided with sufficient number of First Aid boxes. (Required where 5 persons or more are employed) First Aid freely available Equipment as per the list in the OH&S Act. One qualified First Aider appointed for every 50 employees. (Required where more than 10 persons are employed) List of First Aid Officials and Certificates Name of person/s in charge of First Aid box/es displayed. Location of First Aid box/es clearly indicated. Signs instructing employees to report all Injuries/illness including first aid injuries
General Safety Regulation 2	Personal Safety Equipment (PPE)	PPE Risk Assessment carried out Items of PPE prescribed/use enforced Records of Issue kept Undertaking by Employee to use/wear PPE. PPE remains property of Employer, and is not to be removed from the premises GSR 2(4)
General Safety Regulation 9	Inspection & Use of Welding/Flame Cutting Equipment	Competent Person/s with specific knowledge and experience designated to Inspect Electric Arc, Gas Welding and Flame Cutting Equipment Written Proof of Competence of above appointee available on Site All new vessels checked for leaks, leaking vessels NOT taken into stock but returned to supplier immediately Equipment identified/numbered and entered into a register Equipment inspected weekly. Inspection Register kept Separate, purpose made storage available for full and empty vessels

OHS Act Section/ Regulation	Subject	Requirements
Hazardous Chemical Substances (HCS) Regulations Construction Regulation 25	Control of Storage & Usage of HCS and Flammables	Competent Person/s with specific knowledge and experience designated to Control the Storage & Usage of HCS (including Flammables) Written Proof of Competence of above appointee available on Site Risk Assessment carried out Register of HCS kept/used on Site Separate, purpose made storage available for full and empty containers
Pressure Equipment Regulations	Pressure Equipment	Competent Person/s with specific knowledge and experience designated to supervise the use, storage, maintenance, statutory inspections & testing of Pressure Equipment. Written Proof of Competence of above appointee available on Site Risk Assessment carried out Certificates of Manufacture available on Site Register of Pressure Equipment on Site Inspections & Testing by Approved Inspection Authority (AIA): - after installation/re-erection or repairs - Every 36 months. Register/Log kept of inspections, tests. Modifications & repair
General Safety Regulation 13A	Inspection of Ladders	Competent person appointed in writing to inspect Ladders Ladders inspected at arrival on site and weekly thereafter. Inspections register kept. Application of the types of ladders (wooden, aluminium etc.) regulated by training and inspections and noted in register

14.2. EDUCATION & TRAINING:

Subject	Requirement
Company OH&S Policy Section 7(1)	Policy signed by CEO and published/Circulated to Employees Policy displayed on Employee Notice Boards Management and employees committed.
Company/Site SHE Rules (Section 13(a)	Rules published Rules displayed on Employee Notice Boards Rules issued and employees effectively informed or trained: written proof Follow-up to ensure employees understand/adhere to the policy and rules.
Induction & Task Safety Training (Section 13(a) General SHE Training (Section 13(a)	All new employees receive SHE Induction Training. Training includes Task Safety Instructions. Employees acknowledge receipt of training. Follow-up to ensure employees understand/adhere to instructions. All current employees receive specified SHE training: written proof Operators of Plant and Equipment receive specified training Follow-up to ensure employees understand/adhere to instructions.

14.3. PUBLIC SAFETY, SECURITY MEASURES & EMERGENCY PREPAREDNESS:

Subject	Requirement
Notices &Signs	Notices & Signs at entrances / along perimeters indicating **"No Unauthorised Entry".** Notices & Signs at entrance instructing visitors and non - employees what to do, where to go and where to report on entering the site/yard with directional signs. E.g. **"Visitors to report to Office"** Notices & Signs posted to warn of overhead work and other hazardous activities. E.g. General Warning Signs Nets, Canopies, Platforms, Fences etc. to protect members of the public passing / entering the site. Access control measures/register in operation
Site Safeguarding Security Measures	Security patrols after hours during weekends and holidays Sufficient lighting after dark Guard has access to telephone/ mobile/other means of emergency communication
Emergency Preparedness	Emergency contact numbers displayed and made available to Security & Guard Emergency Evacuation instructions posted up on all notice boards (including employees' notice boards)
Emergency Drill and Evacuation	Emergency contingency plan available on site/in yard Doors open outwards/unobstructed Emergency alarm audible all over (including in toilets) Adequate No. of employees trained to use Fire Fighting Equipment. Emergency Evacuation Plan available displayed and practiced.

14.4. PERSONAL PROTECTIVE EQUIPMENT:

Subject	Requirement
PPE needs analysis	Need for PPE identified and prescribed in writing. PPE remain property of Employer, not to be removed from premises GSR 2(4)
Head Protection	All persons on site wearing Hardhats including Sub-contractors and Visitors (where prescribed)
Foot Protection	All employees on site wearing Safety Footwear including Gumboots for concrete / wet work and non-slip shoes for roof work. Visitors to wear same upon request or where prescribed
Eye and Face Protection	Eye and Face (also Hand and Body) Protection (Goggles, Face Shields, Welding Helmets etc.) used when operating the following: • Jack/ Kango Hammers • Angle / Bench Grinders • Electric Drills (Overhead work into concrete / cement / bricks • Explosive Powered tools • Concrete Vibrators / Pokers • Hammers & Chisels • Cutting / Welding Torches • Cutting Tools and Equipment • Guillotines and Benders • Shears • Sanders and Sanding Machines • CO2 and Arc Welding Equipment • Skill / Bench Saws • Spray Painting Equipment etc.
Hearing Protection	Hearing Protectors (Muffs, Plugs etc.) used when operating the following: • Jack / Kango Hammers • Explosive Powered Tools • Wood/Aluminium Working Machines e.g. saws, planers, routers
Hand Protection	Protective Gloves worn by employees handling / using: • Cement / Bricks / Steel / Chemicals • Welding Equipment • Hammers & Chisels • Jack / Kango Hammers etc.
Respiratory Protection	Suitable/efficient prescribed Respirators worn correctly by employees handling / using: • Dry cement • Dusty areas • Hazardous chemicals • Angle Grinders • Spray Painting etc.

Subject	Requirement
Fall Prevention Equipment	Suitable Safety harnesses / Fall Arrest Equipment correctly used by persons working on / in unguarded, elevated positions e.g.: Scaffolding • Lift shafts • Edge work Other methods of fall prevention applied e.g. catch nets
*Protective Clothing	All jobs requiring protective clothing (Overalls, Rain Wear, Welding Aprons etc.) Identified and clothing worn.
*PPE Issue & Control	Identified Equipment issued free of charge. All PPE maintained in good condition. (Regular checks). Workers instructed in the proper use & maintenance of PPE. Commitment obtained from wearer accepting conditions and to wear the PPE. Record of PPE issued kept on H&S File. PPE remain property of Employer, not to be removed from premises GSR 2(4)

14.5. HOUSEKEEPING:

Subject	Requirement
Scrap Removal System	All items of Scrap/Unusable Off-cuts/Rubble and redundant material removed from working areas on a regular basis. (Daily) Scrap/Waste removal from heights by chute/hoist/crane. Nothing thrown/swept over sides. Scrap disposed of in designated containers/areas Removal from site/yard on a regular basis.
Stacking & Storage	Stacking: * Stable, on firm level surface/base. * Prevent leaning/collapsing * Irregular shapes bonded * Not exceeding 3x the base * Stacks accessible * Removal from top only. Storage: * Adequate storage areas provided.
(See Section 1 for Designation & Register)	* Functional - e.g. demarcated storage areas/racks/bins etc. * Special areas identified and demarcated e.g. flammable gas, cement etc. * Neat, safe, stable and square. * Store/storage areas clear of superfluous material. * Storage behind sheds etc. neat/under control. * Storage areas free from weeds, litter etc.

Subject	Requirement
Waste Control/Reclamation	Re-usable off-cuts and other re-usable material removed daily and kept to a minimum in the work areas. All re-usable materials neatly stacked/stored in designated areas. (Nails removed/bent over in re- usable timber). Issue of hardware/nails/screws/cartridges etc. controlled and return of unused items monitored.
Sub-contractors (Housekeeping)	Sub-contractors required complying with Housekeeping requirements.

14.6. WORKING AT HEIGHTS (INCLUDING ROOF WORK):

Subject	Requirement
Openings	Unprotected openings adequately guarded/fenced/barricaded/catch nets installed
Roof work	Roof work discontinued when bad/hazardous weather Fall protection measures (including warning notices) when working close to edges or on fragile roofing material Covers over openings in roof of robust construction/secured against displacement

14.7. SCAFFOLDING :

Subject	Requirement
Access/System Scaffolding	• Foundation firm / stable • Sufficient bracing. • Tied to Structure/prevented from side or cross movement • Platform boards in good condition/sufficient/secured. • Handrails and toe boards provided. • Access ladders / stairs provided. • Area/s under scaffolding tidy. • Safe/unsafe for use signs • Complying with OH&S Act/SABS 085
Free Standing Scaffolding	• Foundation firm / stable • Sufficient bracing. • Platform boards in good condition/sufficient/secured. • Handrails and toe boards provided. • Access ladders / stairs provided. • Area/s under scaffolding tidy. • Safe/unsafe for use signs • Height to base ratio correct • Outriggers used /tied to structure where necessary • Complying with OH&S Act/SABS 085

Subject	Requirement
Mobile Scaffolding	• Foundation firm / stable • Sufficient bracing. • Platform boards in good condition/sufficient/secured. • Handrails and toe boards provided. • Access ladders / stairs provided. • Area/s under scaffolding tidy. • Safe/unsafe for use signs
Mobile Scaffolding	• Wheels / swivels in good condition • Brakes working and applied. • Height to base ratio corrects. • Outriggers used where necessary • Complying with OH&S Act/SABS 085
Suspended Scaffolding	• Outriggers securely supported and anchored. • Correct No. of steel wire ropes used. • Platform as close as possible to the structure. • Handrails on all sides • All winches / ropes / cables / brakes inspected regularly and replaced as prescribed • Scaffolding complies with OHS Act (Act 85/93) • Winch(es) maintained by competent person(s)
Formwork / Support Work	All components in good condition. • Foundation firm / stable. • Adequate bracing / stability ensured. • Good workmanship / uprights straight and plumb. • Good cantilever construction. • Safe access provided. • Areas under support work tidy. • Same standards as for system scaffolding.

14.8. LADDERS:

Subject	Requirement
Physical Condition / Use & Storage	• Stepladders - hinges/stays/braces/stiles in order. • Extension ladders - ropes/rungs/stiles/safety latch/hook in order. • Extension / Straight ladders secured or tied at the bottom / top. • No joined ladders used • Wooden ladders are never painted except with varnish • Aluminium ladders NOT to be used with electrical work • All ladders stored on hooks / racks and not on ground. • Ladders protrude 900 mm above landings / platforms / roof. • Fixed ladders higher than 5 m have cages/Fall arrest system

14.9. ELECTRICITY (AS PART OF, OR ADDITIONAL TO THE **MANUAL "SAFETY & SWITCHING** PROCEDURES FOR ELECTRICAL INSTALLATIONS)

Subject	Requirement
Electrical Distribution Boards & Earth Leakage	• Colour coded / numbered / symbolic sign displayed. • Area in front kept clear and unobstructed. • Fitted with inside cover plate / openings blanked off / no exposed "live" conductors / terminals/Door kept close • Switches / circuit breakers identified. • Earth leakage protection unit fitted and operating. • Tested with instrument: Test results within 15 – 30 milliamps • Aperture/Opening/s provided for the plugging in and removal of extension leads without the need to open the door • Apertures and openings used for extension leads to be protected against the elements and especially rain
Electrical Installations & Wiring	Temporary wiring / extension leads in good condition / no bare or exposed wires. Earthing continuity / polarity correct: Looking at the open connectors to connect the wiring, the word "Brown" has the letter 'R' in it, so the b'R'ow n wire connects to the 'R ' ig ht hand connector. "Blue" has the letter 'L' in it, so the b'L 'ue wire connects to the 'L 'e f t hand connector. Cables protected from mechanical damage and moisture. Correct loading observed e.g. no heating appliance used from lighting circuit etc. Light fittings/lamps protected from mechanical damage/moisture. Cable arrestors in place and used inside plugs
Physical condition of Electrical Appliances & Tools	Electrical Equipment and Tools: (includes all items plugging in to a 16 Amp supply socket) • Insulation / casing in good condition. • Earth wire connected/intact where not of double insulated design • Double insulation mark indicates that no earth wire is to be connected. • Cord in good condition/no bare wires/secured to machine & plug. • Plug in good condition, connected correctly and correct polarity.

14.10. EMERGENCY AND FIRE PREVENTION AND PROTECTION:

Subject	Requirement
Fire Extinguishing Equipment	Fire Risks Identified and on record <u>The correct and adequate Fire Extinguishing Equipment available for:</u> • Offices • General Stores • Flammable Store • Fuel Storage Tank/s and catchment well • Gas Welding / Cutting operations • Where flammable substances are being used / applied. • Equipment Easily Accessible

Subject	Requirement
Maintenance	Fire equipment checked minimum monthly, serviced yearly
Location & Signs	Fire Extinguishing Equipment: • Clearly visible • Unobstructed • Signs posted including "No Smoking" / "No Naked Lights" where required. (Flammable store, Gas store, Fuel tanks etc.)
Storage Issue & Control of Flammables (incl. Gas cylinders	Storage Area provided for flammables with suitable doors, ventilation, bund etc. • Flammable store neat / tidy and no Class A combustibles. Decanting of flammable substances carried out in ignition free and adequately ventilated area. Container bonding principles applied • Only sufficient quantities issued for one task or one day's usage • Separate, special gas cylinder store/storage area. • Gas Cylinders stored / used / transported upright and secured in trolley/cradle/structure and ventilated. • Types of Gas Cylinders clearly identified as well as the storage area and stored separately. • Full cylinders stored separately from empty cylinders. • All valves, gauges, connections, threads of all vessels to be checked regularly for leaks. • Leaking acetylene vessels to be returned to the supplier IMMEDIATELY.
Storage, Issue & Control of Hazardous Chemical Substances (HCS)	• HCS storage principles applied: products segregated • Only approved, non-expired HCS to be used • Only the prescribed PPE shall be used as the minimum protection • Provision made for leakage/spillage containment and ventilation • Emergency showers/eye wash facilities provided • HCS under lock & key controlled by designated person • Decanted/issued in containers as prescribed with information/ warning labels • Disposal of unwanted HCS by accredited disposal agent • No dumping or disposal of any HCS on or inside the storage area or anywhere else on the project site • All vessels or containers to be regularly checked for leaks

14.11. TOOLS:

Subject	Requirement
Hand Tools	Shovels / Spades / Picks: • Handles free from cracks and splinters • Handles fit securely • Working end sharp and true Hammers: • Good quality handles, no pipe or reinforcing steel handles. • Handles free from cracks and splinters • Handles fit securely Chisels: • No mushroomed heads / heads chamfered • Not hardened • Cutting edge sharp and square Saws: • Teeth sharp and set correctly • Correct saw used for the job
Explosive Powered Tools.	• Only used by trained / authorised personnel. • Prescribed warning signs placed / displayed where tool is in use. • Work area must be properly isolated/demarcated during use of tool. • Inspected at least monthly by competent person and results recorded. • Issue and return recorded including cartridges / nails and unused cartridges / nails / empty shells recorded. • Cleaned daily after use.

14.12. SITE PLANT AND MACHINERY:

Subject	Requirement
Brick Cutting Machine	• Operator Trained. • Only authorised persons use the machine. • Emergency stop switch clearly marked and accessible. • Area around the machine dry and slip/trip free/clear of off-cuts • All moving drive parts guarded/electrical supply cable protected • Operator using correct PPE - eye/face/hearing/foot/hands/body.
Electric Arc Welder	• Welder Trained. • Only authorised / trained persons use welder. • Earth cable adequately earthed to work. • Electrode holder in good condition/safe • Cables, clamps & lugs/connectors in good condition. • Area in which welding machine is used is dry/protected from wet. • Welder using correct PPE - eye/ face/foot/body/respirator. • Correct transparent screens & warning signs placed

Subject	Requirement
Woodworking Machines	• Operators Trained. • Only authorised persons use machines. • Provided with guards. • Guards used. • Operators using correct PPE - eye/face/feet/hearing • Circular saws strictly operated according to prescribed methods and settings • Only prescribed saw blades (cross-cut, ripping blade, smooth cut, aluminium) shall be used for various applications
Compressors	• Relief valves correctly set and locked / sealed. • Maximum Safe Working Pressure (MSWP) indicated on face of pressure gauge: not on glass cover. • All drives adequately guarded. • Receiver/lines drained daily • Hoses good condition/clamped, not wired • Compressed air NEITHER used to dust off clothing/PPE/ and work areas NOR on bare skin
Concrete Mixer / Batch Plant	• Top platform provided with guardrails. • Dust abatement methods in use. • Operators using correct PPE - eye / hands / respirators. • All moving drive parts guarded. • Emergency stops identified / indicated and accessible. • Area kept clean/dry/and free from tripping and slipping hazards. • Operator's overseer identified and crane signals displayed and used.
Gas Welding / Flame Cutting Equipment	• Only authorised/trained persons use the equipment. • Torches and gauges in good condition. • Flashback arrestors fitted at cylinders and gauges. • Hoses in good condition/correct type/all connections with clamps • Cylinders stored, used and transported in upright position, secured in trolley / cradle / to structure. • All cylinders regularly checked for leaks, leaking cylinders returned immediately • Fire prevention/control methods applied/hot work permits

14.13. WORK PLACE ENVIRONMENT, HEALTH AND HYGIENE:

Subject	Requirement
Lighting	Adequate lighting in places where work is being executed e.g. stairwells and basements. Light fittings placed / installed causing no irritating/blinding glare. Stroboscopic effect eliminated (not only reduced) where moving objects or machinery is used
Ventilation	Adequate ventilation / extraction / exhausting in hazardous areas e.g. chemicals / adhesives / welding / petrol or diesel/ motors running and in confined spaces / basements.
Noise	Tasks identified where noise levels exceeds 85 dB at any one time. All reasonable steps taken to reduce noise levels at the source. Hearing protection used where noise levels could not be reduced to below 85 dB.
Heat Stress	Measures in place to prevent heat exhaustion in heat stress problem areas e.g. steel decks, when the WBGT index reaches 30. (See Environmental Regulation 4) Cold drinking water readily available at all times.
Ablutions	Sufficient hygiene facilities provided - 1 toilet per 30 employees (National Building Regulations prescribe chemical toilets for Construction sites) • Toilet paper available. • Sufficient showers provided. • Facilities for washing hands provided • Soap/cleaning agent available for washing hands • Means of drying hands available • Lock-up changing facilities / area provided. • Ablution facilities kept hygienic and clean.
Eating / Cooking Facilities	Adequate storage facilities provided. Weather protected eating area provided, separate from changing area Refuse bins with lids provided. Facilities kept clean and hygienic.
Pollution of Environment	Measures in place to minimize dust generation. Accumulation or littering of empty cement pockets, plastic wrapping / bags, packing materials etc. prevented. Spillage / discarding of oil, chemicals and dieseline into storm water and other drains or into existing or newly dug holes/cavities on site expressly prohibited.
Hazardous Chemical Substances	All substances identified and list available e.g. acids, flammables, poisons etc. Material Safety Data Sheets (MSDS) indicating hazardous properties and emergency procedures in case of incident on file and readily available. Substances stored safely. Expiry dates meticulously checked where applicable

15. THE PRINCIPAL CONTRACTOR'S GENERAL DUTIES

The Principal Contractor shall at all times ensure his status of an "employer" as referred to in the Act, and will abide by his/her responsibilities, duties and functions as per the requirements of the Act and Regulations with specific reference to Section 8 of the Act. The Principal Contractor shall keep, and on demand make available, a copy of the Act on site at all times and in addition to that he/she will introduce and maintain a file titled "Health and Safety File", or other record in permanent form, which shall contain all relevant aspects and information as contemplated in the Construction Regulations. He/she will make this file available to the client or his representative whenever necessary or on request to an interested party.

16. THE PRINCIPAL CONTRACTOR'S GENERAL DUTIES

THE PRINCIPAL CONTRACTOR'S SPECIFIC DUTIES

The Principal Contractor's specific duties in terms of these specifications are detailed in the Construction Regulations as published under government notice No. 84 dated 7 February 2014.

The Principal Contractor is specifically referred to the following elements of the Construction Regulations:

Regulation No. 1 - Definitions
Regulation No. 2 - Scope of application
Regulation No. 4 - Notification of construction work
Regulation No. 5 - Duties of client
Regulation No. 6 - Duties of designer
Regulation No. 7 - Principal Contractor and Contractor
Regulation No. 8 - Management and supervision of construction work
Regulation No. 9 - Risk Assessment for construction work
Regulation No. 10 - Fall protection
Regulation No. 11 - Structures
Regulation No. 12 - Temporary works
Regulation No. 14 - Demolition work
Regulation No. 16 - Scaffolding
Regulation No. 21 - Explosive actuated fastening device
Regulation No. 24 - Electrical installations and machinery on construction sites
Regulation No. 25 - Use and temporary storage of flammable liquids on construction sites
Regulation No. 27 - Housekeeping and general safeguarding on construction sites
Regulation No. 28 - Stacking & Storage on construction sites
Regulation No. 29 - Fire precautions on construction sites
Regulation No. 32 - Approved Inspection authorities
Regulation No. 33 - Offences and penalties

The Principal Contractor shall ensure compliance to the Act and its Regulations and specifically to the above regulations, and document each record in the Health and Safety File.

17. THE PRINCIPAL CONTRACTOR'S SPECIFIC RESPONSIBILITIES WITH REGARDS TO HAZARDOUS ACTIVITIES

The following activities are identifiable as hazardous in terms of the Construction Regulations.

The contractor shall execute the activities in accordance with the following Construction Regulations and other applicable regulations of the Act:

Regulation No. 10 - Fall protection
Regulation No. 14 - Demolition work
Regulation No. 16 - Scaffolding
Regulation No. 17 - Suspended platforms
Regulation No. 21 - Explosive actuated fastening device
Regulation No. 24 - Electrical installations
Regulation No. 25 - Use and temporary storage of flammable liquids on construction sites
Regulation No. 27 - Housekeeping on construction sites
Regulation No. 29 - Fire precautions on construction sites.

All of the above requirements will be read in conjunction with the relevant regulations and health and safety standards as required by the Act. All documents and records required by the Construction Regulations will be kept in the Health and Safety File and will be made available at any time when required by the client or his representative, or on request to an interested party.

18. GENERAL NOTES TO THE PRINCIPAL CONTRACTOR

Legal Framework and obligations:

The more important Acts and relevant subordinate/secondary legislation as well as other (inter alia Local Government) legislation that also apply to the State as well as to State owned buildings and premises: -

i. The latest issue of SABS 0142: "Code of Practice for the Wiring of Premises"
ii. The Local Government Ordinance 1939 (Ordinance 17 of 1939) as amended and the municipal by-laws and any special requirements of the local supply authority
iii. The Fire Brigade Services Act 1987, Act 99 of 1987 as amended
iv. The National Building Regulations and Building Standards Act 1977 (Act 103 of 1977) as amended and relevant proclaimed Regulations (SABS 0400)
v. The Post Office Act 1958 (Act 44 of 1958) as amended
vi. The Electricity Act 1984, Act 41 of 1984
vii. The Regulations of Local Gas Board(s), including Publications of the SABS Standards and Codes of
viii. Practice, with specific reference to GNR 17468 dated 4th October 1997
ix. Legislation pertaining to water usage and the environment
x. Blasting Regulation

Legal Liabilities:
Common Law and Legislation
Based on two main criteria -

- Would the reasonable person have foreseen the hazard?

That is a reasonable person in that specific position, taking experience, qualifications, authority, position in the organization etc. into consideration

- Would the reasonable person have taken precautionary measures (action) to prevent or limit the hazard?

Negligence can be proven on failure on any or both of the above criteria
(There may not necessarily be a relationship between criminal and civil liability!)

19. HOUSEKEEPING

Good housekeeping will be maintained at all times as per Construction Regulation No. 27. Poor housekeeping contributes to three major problems, namely, costly or increased accidents, fire or fire hazards and reduction in production. Good housekeeping will enhance production time.

In promotion of environmental control all waste, rubble, scrap etc, will be disposed of at a registered dump site and records will be maintained. Where it is found to be impractical to use a registered dump site or it is not available, the Principal Contractor will ensure that the matter is brought to record with the client or his representative, after which suitable, acceptable alternatives will be sought and applied.

Dross and refuse from metals, and waste matters or by-products whose nature is such that they are poisonous or capable of fermentation, putrefaction or constituting a nuisance shall be treated or disposed of by methods approved of by an inspector.

NOTE: No employer (Principal Contractor) shall require or permit any person to work at night or after hours unless there is adequate, suitable artificial lighting including support services in respect of Health and Safety.

19.1. CONTRACTOR'S SITE FACILITIES:

The contractor must outline how the site facilities should be managed. This should include, but not be limited to the following:

Project and Site Rules

The following basic safety rules should be taken into consideration:

- Approved hard hats and safety glasses.
- Steel Toe/Safety Toe work boots
- Additional eye protection shall be worn when job specific hazards dictate.
- Hearing protection shall be worn when entering all operations areas, areas posted as hearing protection areas or when using equipment that produces noise levels in excess of 85 DBA.
- Respiratory protection shall be worn when performing tasks that dictate the need for such equipment.
- Good housekeeping practices shall be continually maintained and work areas left in a clean and safe condition at the end of each shift.

- Smoking Policy: Smoking is permitted in designated areas only.
- Risk Assessment will determine the need for fall protection when working from height.
- Only trained, certified personnel shall operate aerial lifts, forklifts, or motorized equipment.
- Ladders must be properly constructed and kept in good repair. Ladders shall be the proper length and type for the task. All ladders shall be identified and registered
- All scaffolding will be constructed per SANS standards and OHS Act regulations. Each person responsible for working on an elevated platform shall visually identify that scaffolding has been inspected and tagged by a competent person prior to each shift.
- Compressed gas cylinders must be stored and used in the upright position and properly secured at all times, protective caps shall be in place when cylinders are not in use and gauges shall be removed prior to transportation of cylinders.
- All guards for personnel or equipment protection shall be kept in place and shall not be modified or tampered with.
- All floor and wall openings must be protected by adequate and firmly fixed means (i.e., coverings, guardrails, and toe plates).
- Employees shall not walk or work under suspended loads.
- Access to safety equipment must be kept clear at all times. A clear area must be maintained around fire hydrants at all times.
- All safety and warning tags and/or signs shall be observed.
- All incidents/injuries, no matter how minor, must be reported and recorded in writing to the Client/Agent.
- Note: Ensure compliance i.t.o. the requirements of the OHSA, and the COIDA.
- Bins provided on site must be utilized for all waste.
- Illegal drugs, alcohol, firearms or other dangerous substances shall not be allowed on the project. Reporting to work under the influence of an illegal drug, alcohol or other dangerous substance is not permitted.
- All contractors' employees must undergo full medical examination prior to any work on site.
- Do not use Cellular phones in areas where cell phone usage is prohibited.
- When walking through the site or to personal work areas use recognized thoroughfare. Don't take short cuts or walk on uneven ground surfaces.
- All fire extinguishers shall be:
    - Be clearly labelled
    - Conspicuously numbered
    - Entered in a register
    - Inspected monthly by a competent person
    - Tested and serviced at recommended intervals by an accredited supplier

NB: The Contractor shall provide adequate toilet facilities with toilet paper, potable water, soap and towels together with industrial soaps and barrier creams as appropriate. He shall maintain them in a clean and sanitary condition. Sufficient rubbish bins are to be provided at all eating areas.

20. 1ST AID REQUIREMENTS

- Contractors shall have one first aid box for the first 5 persons and thereafter one for every 50 or team of workers on site or part thereof.

- More first aid boxes shall be provided if the risks, distance between work teams or workplace requirements require it (it should be available and accessible for the treatment of injured persons at that workplace).

- 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 (100 g).
Item 4: Sterile gauze (minimum quantity 10).
Item 5: 1 Pair of forceps (for splinters).
Item 6: 1 Pair of scissors (minimum size 100 mm).
Item 7: 1 Set of safety pins.
Item 8: 4 Triangular bandages.
Item 9: 4 Roller bandages (75 mm X 5 m).
Item 10: 4 Roller bandages (100 mm X 5 m).
Item 11: 1 Roll of elastic adhesive (25 mm X 3 m).
Item 12: 1 Non-allergenic adhesive strip (25 mm X 3 m).
Item 13: 1 Packet of adhesive dressing strips (minimum quantity, 10 assorted sizes).
Item 14: 4 First aid dressings (75 mm X 100 mm).
Item 15: 4 First aid dressings (150 mm x 200 mm).
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.

- A prominent notice or sign in a conspicuous place at a workplace (SABS 1186 approved signs to indicate location of first aid boxes), indicating where the first aid box or boxes are kept as well as the name and contact details of the First Aider of such first aid box or boxes.

- The Principal Contractor and sub-contractor shall ensure that alternative arrangements shall be made for possible incidents occurring after normal working hours.

- Where services are not available from the medical centre or where there is no medical centre, the Principal Contractor shall make alternative arrangements for any medical assistance. Proof of this must be made available in the Principal contractors SHE Plan.

- All the first aid boxes shall be compliant to the legal requirements, failure to prove this could lead to work stoppage

21. EMERGENCY PREPAREDNESS AND RESPONSE

Contractor to implement a site specific emergency plan, together with the sub-contractors, will develop their own emergency response plan (as a guideline) for both site and offices and submit this plan to the Client Safety Agent for approval. It may be decided that one site specific emergency response plan be used for all contractors. He will ensure that the employees and the sub-contractor employees are trained on this plan. The plan shall be in line with the risk profile of the work to be undertaken.

Periodic emergency drills should be undertaken by the Principal Contractor; however, the principal contractor must initiate own emergency drills with permission from the Client's project manager. This must be recorded and provided on request.

22. INCIDENT INVESTIGATION

The Principal Contractor shall report all incidents/accidents as required in terms of legislation including near miss incidents, first aid, medical treatment, lost time incidents (lost time injuries and fatalities); Section 24 and 25 incidents; electrical contact; major equipment damage; chemical spillage and other environmental incidents within 24 hours or before the end of the work shift.

The Chairperson of the SHE Steering Committee shall determine which employee and contractor Loss Time Incidents, Environmental Sustainability Index Incidents, Repeat Incidents and Near-miss Incidents must be recorded by the contracting company. The purpose of these recordings are to confirm that all the root causes were identified, addressed and closed out and furthermore it serves as an opportunity for sharing the lessons that were learnt from each of those incidents.

- All fatal incidents, employee and contractor incidents, shall be reviewed by the committee within one week after the incident. Preliminary investigation information shall be shared.
- All employee and contractor incidents that were in contravention of any one of the Safety Cardinal Rules must be reported by the Contractor to the Client/Agent.
- If it is found that the Principal Contractor or the sub-contractor are hiding/not reporting incidents then steps (which may include disciplinary action) would be taken against the Principal Contractor and sub-contractor.
- A comprehensive and detailed investigation report shall be submitted to the Client/Clients Agent within 7 -14 days after the incident.
- The Principal Contractor shall ensure that all accidents/incidents are investigated by him/her and are discussed at the Project Progress committee meeting held on site.
- Accidents/incidents shall be investigated and recorded in terms of the requirements of the Occupational Health and Safety Act, the National Environmental Management Act and National Water Act as applicable.
- The Client/Agent shall be allowed to participate in any accident/incident investigation if the accident/incident is directly linked to any activity within the scope of the construction project.

- Case studies will be compiled for all near misses, lost time incidents and fatalities.
- The Principal Contractor shall keep on site/workplace a record of all accidents and incidents reported in the form of the OHS Act Annexure 1 investigation form as referenced in the OHS Act. (Incident Investigation Report)
- The Principal Contractor shall provide SHE related statistics to the Client at the end of each month.

First Aid Injuries

Chairman: Supervisor of Injured Person / Principal Contractor Relevant Supervisor
Attendees:

The severity and potential for injury and/or damage to plant/equipment will be determined, by at least the following people below:

- Project Manager (Client Safety Agent)
- Person involved or owner of equipment involved
- Health and Safety representative
- SHE Practitioner

All investigation teams must include at least 1 person (from both the Client and Principal Contractor) that is competent in Root Cause Analysis.

Contractors shall ensure the incident/accident scene is not disturbed until after the investigation unless it is done to prevent further injury or for rescue purposes (OHS .Act, Section. 24(2) applies). Investigation shall begin promptly after the incident/accident. Where applicable and with proper authorization, photographs may be taken of the scene of the incident as well as any equipment involved in the incident. The results of the investigation together with the Root Cause Analysis of the incident and the committee's recommendations for preventative action(s) shall be submitted to Project Manager, within 3 days after the incident occurred unless proof can be given that due to technical or other difficulties, more time is needed.

Contractors shall also review and analyze all incidents; to establish trends that may indicate deviations from established work standards and safe working procedures/practices. The Contractor shall take appropriate corrective action and submit report to Project Manager.

The Contractor shall investigate all incidents immediately and provide the Project Manager a report within the specified time frame, which shall include:

- Date, time and place of incident;
- Description of incident;
- Root cause of incident/accident;
- Type of injury (if any);
- Medical treatment provided (if any);
- Persons involved;
- Names of witness/s;
- Corrective action to prevent recurrence (with clear deadlines and responsible persons). It is required that all corrective action is closed out within 3 months. If this is not practicable within the time frame, then it is to be submitted at a later date agreed to by the Project Manager).

- If it is found that the Principal Contractor or the sub-contractor are hiding/not reporting incidents then steps (which may include disciplinary action) would be taken against the Line Management of the Principal Contractor and sub-contractor.
- Please note that providing the Accident/incident investigation report does not exempt the Principal Contractor from providing accident reports required by Statutory Authorities, in particular, the Contractors' responsibility for reporting accidents in accordance with the requirements of the OHS Act and COID Act.
- It is essential that the Principal Contractor demonstrate that corrective action has been taken and that correction action is communicated by a predetermined means to all Contractors staff affected. All corrective actions must be closed within 3 months from the date of issuing of investigation report.
- Feedback on the status of close out of corrective actions must be communicated at the following forums:

  a) Project Executive SHE Committee Meeting
  b) Area Specific SHE Meeting
  c) Project SHE Review Meeting
  d) Progress Meeting
  e) Contractor SHE Meetings

The Contractor shall compile and implement procedure for:

a) Reporting and investigation of incidents – This document sets out the procedures to be followed when reporting, recording and investigating incidents that occur on a construction site.

b) Workplace Injury and Disease Recording – The purpose of this document should be a guide to the Principal contractor on how to accurately evaluate, define and categorise fatalities, injuries and occupational diseases in a data format for the calculation of performance indicators for health and safety.

c) Health and Safety Past Performance- The following information regarding the contractor's past performance in safety shall be submitted with the tender documentation:

   For the past calendar year state the following:

   - Lost Time Injury Incident Rate (LTIR)
   - Number of lost work time injuries (OHS Act Section 24(a) incidents including Occupational Diseases)
   - Number of cases with medical attention only
   - Number of fatalities. Provide details.
   - Employee hours worked (used in the calculation of the DIIR)

   Other information required:

   - Trend for the LTIR (or other) figure over five years.
   - Has any work or activity been stopped due to safety, and/or health and/or environmental considerations? Provide details.
   - Has access been denied to work on any site due to health and safety reasons? Provide details.

23. GENERAL

The project under control of the Principal Contractor shall be subject to periodic health and safety audits that will be conducted by the client at intervals agreed upon between the Principal Contractor and the client, provided such intervals will not exceed periods of one month. The Principal Contractor is to ensure that he/she and all persons under his control on the construction site shall adhere to the above specifications, as non-conformance will lead to the client taking action as directed by Construction Regulation 5.1(q). The Principal Contractor should note that he/she shall be held liable for any anomalies including costs and resulting deficiencies due to delays caused by non -conformance and/or non-compliance to the above Health and Safety Specifications and the Health and Safety Plan based on these specifications.

24. PUBLIC SAFETY

Necessary precautionary and preventive safety measures shall be taken as work will be done at GTM Civic Centre during the day.

All work activities will be proper barricaded / hoarding to protect municipal stall and general public entering the Civic Centre.

25. HOURS OF WORK

All work conducted on site shall fall within the legal requirements in accordance with the Basic Conditions of Employment Act.

Contractors will notify their Supervisor/s of any work that needs to be performed after hours according to the agreed arrangements. (The application needs to be submitted timeously).

Where applicable, the notification should include proof of application, for overtime, to the Department of Labour and /or the letter of approval form the Department of Labour.

26. PRICING FOR OCCUPATIONAL HEALTH & SAFETY COMPLIANCE

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

27. IMPORTANT LISTS AND RECORDS TO BE KEPT

The following are lists of several records that are to be kept in terms of the Construction Regulations. The lists are:

1) List of appointments
2) List of record keeping responsibilities
3) Inspection checklist

These lists and documents are to be used as a point of reference to determine which components of the Act would be applicable to a particular site or task or project, as was intended under paragraph 1 ("Preamble") above.

27.1. LIST OF APPOINTMENTS:

See point 5.1 of appointment needed

27.2. LIST OF RECORD KEEPING RESPONSIBILITIES:

ITEM	CR	RECORD TO BE KEPT	RESPONSIBLE PERSON
1.	4(2)	Notification to the Provincial Director – Annexure 2, where applicable. Available on site	PC
2.	5(1)(m)	Copy of Principal Contractor's Health & Safety Plan Available on request	PC
3.	7(d)	Copy of Principal Contractor's Health & Safety Plan As well as each Contractor's Health & Safety Plan Available on request	Principal Contractor
4.	7(b)	Health and Safety File opened and kept on site (including all documentation required i.t.o. OHSA & Regulations Available on request	Every Contractor
5.	7(e)	Consolidated Health and Safety File handed to Client on completion of Construction work. To include all documentation required i.t.o. OHSA & Regulations and records of all drawings, designs, materials used and similar information on the structure	Principal Contractor
6.	7(f)	Comprehensive and Updated List of all Contractors on site, the agreements between the parties and the work being done Included in Health and Safety file and available on request	Principal Contractor
7.	8(6)	Keep record on the Health and Safety File of the input by Construction Safety Officer [CR 6 (7)] at design stage or on the Health and Safety Plan	Contractor
8.	9(1)	Risk Assessment - Available on site for inspection	Contractor
9.	7 (5)	Proof of Health and Safety Induction Training	Every Employee on site

10.	10(3)	Construction Manager [CR 8(1)] has latest updated version of Fall Protection Plan [CR 10(1)]	Contractor
11.	11(2)(b)	Record of inspections of the structure [First 2 years - once every 6 months, thereafter yearly] - Available on request	Owner of Structure
12.	11(2)(c)	Maintenance records - safety of structure - Available on request	Owner of Structure
13.	13(2)(h)	Record of excavation inspection - On site available on request	Contractor
14.	17(11)	Suspended Platform inspection and performance test records Kept on site available, on request	Contractor
15.	19(8)(c)	Material Hoist daily inspection entered and signed in record book kept on the premises	Contractor
16.	19(8)(d)	Maintenance records for Material Hoist - Available on site	Contractor
17.	20(8)	Records of Batch Plant maintenance and repairs On site available for inspection	Contractor
18.	21(2)(g)(ii)	Issuing and collection of cartridges and nails or studs (Explosive Powered Tools) recorded in register - recipient signed for receipt as well as return	Contractor
19.	23(1)(k)	Findings of daily inspections (prior to use) of Construction Vehicles and Mobile Plant	Contractor
20.	24(d)	Record of temporary electrical installation inspections [once a week] and electrical machinery [daily before use] in a register and kept on site	Contractor
21.	29(l)	Fire Evacuation Plan	Contractor

28. COVID-19 IMPLEMENTATION

28.1 INTRODUCTION

It will be incumbent upon the PC to establish a suitable and sufficient procedures for the identification of potentially infected employees and workers, the management of exposure to the corona virus on the project, including visitors and suppliers. Including a response plan for persons suspected of being infected with or exposed the virus. The procedure is to be applicable to all levels of management and supervision, employees and local labour.

28.2. ACCESSING THE SITE

- Site induction: All personnel to be re-inducted to also include COVID-19 preventative measures.
- Personnel / site visitors not informed on all relevant documentation with regards to COVID-19.
  - Training of all site personnel - information on virus, contamination, spread and prevention.
  - Training of personnel on all relevant documentation associated with virus spread management and prevention.
  - Controlling access to site
  - Monitoring and spread prevention measures to be implemented:
    - Body temperature measurement with non-contact measurement equipment.
    - Implementing hand wash and sanitising procedures
    - Placing of hand sanitising stations at office area, eating areas, toilets and meeting areas.
    - Disinfecting of mobile plant and transporting vehicles.
- Congestion at access gate, eating areas, toilets, meeting sessions, etc.
  - Staggering of work starting times, lunch- and other break times.
  - Managing of social distancing areas - at least 1 meter apart.
  - Constant supervision during monitoring.
- Contractors not conduction monitoring of body temperature, hand sanitising facilities.
  - Site management to ensure implementation by all site personnel and companies implement site safety specifications w.r.t COVID-19 prevention spread and infection.

- Transporting, delivery vehicles and other vehicles accessing site.
  - Implementing disinfecting of all vehicles accessing site.
  - Vehicles accessing site on regular basis to disinfect on arrival and departure.
- Personnel transporting vehicles not sanitised before and after use.

28.3. SITE OPERATIONS

- Congestion at on site eating areas, toilets, meetings, etc.
  - Staggering of work starting times, lunch- and other break times.
  - Managing of social distancing areas – at least 1 meter apart.
  - Constant supervision during monitoring.
- Site management not conducting body temperature monitoring, hand sanitising or sanitising facilities on site.
  - Procedures to be drafted and implemented to ensure monitoring of all personnel accessing site.
- Transporting, delivery vehicles and other vehicles accessing site.
  - Procedures to be drafted and implemented to ensure disinfecting of vehicles
- Mobile plant and machinery not sanitised before and after use.
  - Procedures to be drafted and implemented to ensure disinfecting of vehicles

28.4. SOCIAL DISTANCING

Social distancing has been shown to be an effective method to slow down the spread of the corona virus. It will be incumbent on the contractor to ensure that the construction site and facilities are set up in such a way that it will be possible as far as is practicable to maintain the required social distancing of a minimum of 1 metre between persons when at work.

28.4.1 Tasks that require more than 1 person to complete

Where it is not possible to maintain the required distance between workers due to the nature of the work activity, e.g. curb laying, confined working areas, rebar tying, preparing wire cages, the contractor will be required to implement, maintain and enforce a procedure to adequately protect such workers against potential infection with the corona virus. This includes but is not limited to:

- Providing adequate supplies of suitable PPE such as face masks, task specific gloves, safety glasses, disposable/additional coveralls;
- PPE used during multi-person activities to be exchanged immediately after the task is completed; o Sealed bins to be provided for disposable PPE such as masks, disposable coveralls, disposable gloves, etc.;
- Sealable bags provided to each person for keeping PPE requiring laundering, such as gloves and overalls, and
- Sanitising/washing facilities provided for immediate sanitizing of hard hats, safety glasses, shoes, safety harnesses etc. on completion of multi-person tasks.

All the above to be utilized when breaking for lunch or leaving the site, and before commencing with the next or new work activity. b. Access/Egress of Site, Welfare Facilities, Meeting Areas

28.4.2 Access/Exist of Site, Welfare Facilities, Meeting Areas

The PC is to ensure there is suitable and adequate provision to minimize the risk of persons who may be infected with Covid-19 entering the site, the spread of the virus between persons who work on or visit the site and the risk of potentially contaminated persons leaving the site and accessing public spaces or going home to their families. To achieve this, the contractor is required to implement, *inter alia* the following measures:

- Persons accessing the site in groups to maintain social distancing of at least 1 metre while waiting to access the site;
- Persons waiting to access the site to be segregated from the public where required by the provision of dedicated, prominently identified public pedestrian walkways situated in such a way that social distancing is maintained between site personnel and the public;
- Screening of each person who enters the site with a no-touch infrared thermometer;
- Means of (fully) sanitizing each person and their belongings, who access and leave the site;
- Dedicated facilities for safekeeping of personal for each person. Such facilities are to allow for total segregation of belongings and must be easy to sanitize. Provision of such facilities for safekeeping to be accompanied with a procedure for the use and sanitizing of the storage facility to reduce the risk of cross-contamination;

- Toolbox talks to be conducted outdoors when possible in order for persons to maintain social distancing. Where inclement weather does not allow for this, toolbox talks to be conducted with smaller groupings of workers in a sheltered area large enough to maintain social distancing, and
- Eating areas to be set up in such a way that the maximum number of persons who will use the area at any one time are able to maintain the required social distancing of 1 metre. Should this not be practicable, meal times are to be staggered on a rotational basis to avoid contact between persons.

**This guideline is not an exhaustive list and the contractor is encouraged to develop rigorous control measures and procedures to safeguard all persons accessing or working on the site against the risk of Covid-19.*

Where possible remote means of monitoring such as use of drones or security cameras to monitor site conditions and to do site inspections could be considered.

28.5. WORKERS TRAINING

28.5.1 All site personnel to be trained on the COVID-19 virus with regards to:

- Information on the virus
- Contamination, spread and prevention of virus

28.5.2 Appoint and train of site safety officer and/or CORONA Monitoring Officer

28.5.3 Training of all site personnel and communication of policies, safe work procedures and risk assessments.

28.6. PPE

The hierarchy of control applies with the use of PPE. Specific regard for the type and usage, training and control is to be outlined in the policies and procedures.

28.6.1 Masks

Masks are compulsory for all employees; personnel and professional team members, reducing the potential of inhaled COVID-19 droplets. For general administration purposes, for essential staff on site only, cloth masks may be worn. N95 masks are only to be worn by first aiders or high risk workers, due to the national shortage thereof.

All employees to have access to N95 or FFPT2 masks when required, only in instances of HIGH RISK OF EXPOSURE

All N95 and FFPT2 masks to be disposed with or after 1 day's use. Induction is to include training on the correct use of face masks.

Cloth face masks to be used on entering and leaving the site. It is advised that each worker is supplied with at least 3 cloth face masks. This would assist ensuring that the masks are hygienic (1 on the face; 1 in the wash and 1 as a backup).

The PC must ensure that sufficient stock is at all-time available on site. This will also have depended on the type of mask being issued.

All disposable masks are biological waste and must be properly disposed of. This must be disposed in container (locked) or in bags to be either removed as medical biological waste by registered service provider.

CLEARLY IDENTIFIABLE BINS INDICATING BIOLOGICAL WASTE TO BE PROVIDED

28.6.2 Face Shields

The principal contractor could also look at options such as full face shields for preventing spreading of virus through eyes. This would assist the employee who is doing hard physical work to breathe more easily but still protecting the mouth, eyes and nose.

Face shields should be cleaned daily before the shift and at the end of the shift. Proper cleaning agents/disinfectant must be used. Face shields should be issued to employees and no sharing is allowed.

28.6.3 Overalls

All employees must be issued with 3 overalls (1 overall we and one as the backup). This will ensure that the employee will be ab veralls. This must form part of the COVID-19 training for all employees.

28.6.4 Hand Gloves

It is preferable that surgical gloves are not worn unless indicated and workers trained in the proper use thereof. Gloves must only be used when the activity demand the wearing of specific type of hand gloves. This will be directed by the PC risk assessment.

Site office personnel need to be made aware of the risks in the office environment, this include to handling of documents and plans. These employees could be issued with the appropriate hand gloves or sufficient hand wash / sanitising facilities must be available in the site office.

28.7. SIGNAGE

The PC is to review all current signs and notices displayed on site. The PC is to avoid conflicting messages/notices that have been in place prior to lockdown and review according.

28.7.1 Access rules

The contractor shall install additional signage with site rules specific to the prevention of spreading the COVID-19 virus at the access control points of the site.

28.7.2 Notices/Posters with protocols

Notices and posters shall be placed and installed to raise awareness and regarding protocols to be followed on site. These notices and posters shall be placed conspicuously at various points on the site including the following places:

- Entrance
- Site notice board
- Site Office
- Eating areas
- Next to toilets and bathrooms
- Hand washing stations
- Storerooms

28.8. EMERGENCY PLANNING

An updated emergency plan is to be completed that is in line with the current Regulations of the National Disaster Management Act.

28.8.1 First aid

Extra gloves, and disinfectants are to be available, first aiders are to be issued with at least FFPT2 masks should they be required to respond

28.8.2 Evacuation plans

Evacuation plans should consider social distancing.

28.8.3 Isolation of potentially infected workers

The emergency plan is to consider how anyone who arrives on site and displays any of the symptoms, or has a raised temperature

28.9 PERMIT TO WORK

28.9.1 All traveling will only be allowed with a travel permit issued by the appointed 16.2 of the company initiating the traveling instruction.

28.9.2 Traveling will be strictly regulated only allowing 50% capacity of taxis and other bulk transporting vehicles and only allowing 2 persons per vehicle and tow in LDV and similar vehicles.

28.9.3 Permits will be with the person it was issued to at all times. Permits is not transferrable and will be made out to the person appointed as operators and/or driver.

28.9.4 Permits will be issued on a weekly basis and all recipients will sign for said permit.

28.10. MACHINERY SHUTDOWN AND LOCK OUT PROCEDURES

28.10.1 All vehicles traveling from site will be disinfected on the inside before leaving the site.

28.10.2 All vehicles and mobile plant will be disinfected before that start of each shift and the end of each shift.

28.10.3 Said disinfecting of all mobile plant and machinery will be noted on a checklist and signed off by the officer conducting the disinfecting.

28.11. WORK AREA ACCESS AND EXIST

28.11.1 All site access will be controlled by a manned control point.

28.11.2 All personnel accessing the site will sanitise their hands before entering the site.

28.11.3 Site starting and finishing times to be staggers to prevent access congestion.

28.11.4 All breaks to be staggered.

28.11.5 All meetings to be limited to 10 personnel with social distancing of at least one meter spacing between attendees – including site inductions and toolbox talks.

28.12. EMERGENCY AND FIRST AID ARRANGEMENTS

28.12.1 Appointing a COVID-19 Monitoring officer.

28.12.2 Displaying of appointed personnel's information.

28.12.3 Indicating signs and symptoms of CORONA-19 virus.

28.12.4 Displaying steps to be taken if employee suspects that they are infected

28.12.5 All incidents to be reported to supervisor and/or safety dept. as per procedure.

28.12.6 Body temperature measuring at entrance – not permitting personnel with body temperature of 38deg C and above to enter.

28.13 WASTE MANAGEMENT FOR COVID-19 WASTE

Waste management arrangements to be updated to include provision for the disposal of additional waste generated due to preventative measures implemented. All waste to be managed as hazardous waste.

28.13.1 Disposal of any gloves, masks

The contractor shall dispose of all used gloves and masks as hazardous waste and provide sealable bags and containers for the safe disposal of this waste.

28.13.2 Paper towels

The contractor shall provide adequate supplies of paper towels on site. At points where these towels are provided lined waste bins to be placed in order to collect all used towels and then to be disposed of in hazardous waste.

28.13.3 Disinfectant solution

The contractor to provide adequate supplies of disinfectant on site where the use of water and soap for cleaning is not practical. If disinfectant dispensers are not refilled it should be disposed with other hazardous waste.

28.13.4 Wastewater

Wastewater at washing points, toilets, and bathrooms to be contained in a drainage system that prevent surface spills. If wastewater is contained in waste buckets it must be sealed when removed and disinfected after it is cleaned.

28.14 EATING AREAS

The PC is to limit the number of employees at all activities to the minimum. Stagger lunchbreaks and resting periods for work teams. Training and awareness to address procedures and the importance of good hygiene practice and social distancing.

Workers are required to stay on site once they have entered it and not use local shops.

Dedicated eating areas should be identified on site to reduce food waste and contamination.

- Break times should be staggered to reduce congestion and contact at all times.
- Hand cleaning facilities or hand sanitiser should be available at the entrance of any room where people eat and should be used by workers when entering and leaving the area;
- Workers should be asked to bring pre-prepared meals and refillable drinking bottles from home;
- Social distancing to be applied whilst eating and avoid all contact;
- Where catering is provided on site, it should provide pre-prepared and wrapped food only;
  - Payments should be taken by contactless card wherever possible;
  - Crockery, eating utensils, cups etc. should be disposable if supplied;
- Drinking water should be provided with enhanced cleaning measures of the tap mechanism introduced;
- Tables should be cleaned and disinfected between each use;
- All rubbish should be put straight in the bin and not left for someone else to clear up;
- All areas used for eating must be thoroughly cleaned at the end of each break and shift, including chairs, door handles, vending machines and payment devices.

28.15 OTHER SPECIAL REQUIREMENTS

28.15.1 Implement record keeping measures for daily checks on sanitising stations, level of sanitising material and/or agents on site, personnel failing temperature testing, signs and symptoms, etc.

28.15.2 Ensure hand sanitising available in all personnel transports - personnel to sanitise before entering vehicle.

28.15.3 Sanitising interior of all personnel transport vehicle BEFORE and AFTER transport.

28.15.4 Contractors to draft COVID-19 plan for the site indicating actions to be taken when any of their personnel tests positive for COVID-19

28.15.5 Action plans also to indicate replacement of personnel and key personnel tested positive.

28.15.6 Should any person be tested positive on site and/or project. ALL work will be stopped, all contact with infected employee will be traced and all possible exposed personnel will be sent home to be tested. Personnel testing positive will only be able to return to work accompanied with a letter form a doctor indicating that said employee is not infected with the COVID-19 virus. Tests can only be conducted at approved testing facilities.

28.16. CONSEQUENCES OF NON-COMPLIANCE

When non-compliance activities are noted, that activity will be stopped. Should the remedial actions not take place the site will be shut down till the corrective actions have been implemented.

Employees that do not work according to the SSHSS and SSHSP must be disciplined according to the company's disciplinary codes and practices.

Supervisory employees on site must ensure compliance, and when non-conformances are noted disciplinary actions should also be followed.

PCs should note that they could be fined and even according to the Disaster Management Act, arrested.

29. ANNEXURE A

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

In terms of the Construction Regulations (2014), it is the Client's duty to ensure that the cost for health & safety has been provided for by the Principal Contractor, before appointment.

Acting on behalf of our Client, we require the following health & safety costs to be included by the Principal Contractor. It must be made very clear that these are just some of the health & safety costs to be included in your tender price. It is the duty of the Principal Contractor and Contractors to ensure that all aspects of the Occupational Health & safety Act 85/1993 and Construction Regulations are catered for.

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

ITEM	DESCRIPTION
1	Supply of all items of Personal Protective Clothing/Equipment & ensure use thereof for full compliance
1.1	Steel toe capped safety boots
1.2	Overalls
1.3	Reflective vests(high visibility)
1.4	Hard hats
1.5	Dust masks
1.6	Hearing protection
1.7	Hand gloves
1.8	Any other :Principal Contractor to specify
2	Supply and provision of Equipment for working at Heights & ensure use thereof for full compliance
2.1	Fall protection equipment (Safety Harness)
2.2	Double lanyard harness
2.3	Fall protection plan (to be compiled by competent Fall Protection Planner)
2.4	Scaffolding access ladders/toe boards/hand rails
2.5	Portable Ladders
2.6	Any other: Principal Contractor to specify :
3	Barricading: Supply & install, including removal upon completion to ensure full compliance to legislation
3.1	Rigid type barricading (orange snow netting)
3.2	Temporary fence barricading along perimeter of excavated area
3.3	Danger tape pre-warning tape (no danger tape will be allowed as means of barricading)
3.4	Any other: Principal Contractor to specify :
4	Related Training
4.1	First Aid Training
4.2	Health and Safety Representative training
4.3	Emergency Rescue training(Height)
4.4	Hazard Identification Training
4.5	Training of Personnel working at heights
4.6	Construction Plant Training (Plant Operators)

ITEM	DESCRIPTION
4.7	Legal Liability(OHSACT) Training
4.8	COID ACT Training
4.9	Scaffold Erector and Inspector Training
4.10	Any other: Contractor to specify : Working at elevated
5	Occupational Health and Safety Administration
5.1	Develop of a Site Specific Health and Safety Plan and Hazard and Risk Assessment by competent person
5.2	Develop of Fall Protection and Rescue Plan by a Competent Fall Protection Plan Developer Developer.
5.3	Competent Occupational Health and Safety Officer/Consultant (Registered with SACPCMP)
6	Medical Surveillance
6.1	Medical Certificates of fitness for all Employees by an Occupational Health Practitioner.
7	Facilities and Equipment
7.1	Sanitary facility for each sex and for every 30 workers.
7.2	Changing facilities for each sex (provide lockers for worker belongings)
7.3	Sheltered eating areas
7.4	First aid boxes
7.5	Fire extinguishers
7.6	Waste bins
8	Safety Signage
8.1	Sufficient and adequate safety signage on constructions site and at all flammable stores.
9.	All Relevant COVID-19 Requirements

CLIENT
GREATER TZANEEN MUNICIPALITY

RISK ASSESSMENTS MONITORING & REVIEW PLAN FOR PROJECT :
ROOF REPLACEMENT AT CIVIC CENTRE

TYPE OF WORK PERFORMED	ROOF REPLACEMENT
PREPARED BY:	MM CONSULTANTS

RISK ASSESSMENTS

MONITORING & REVIEW PLAN

CR 9(1)(d) Monitoring plan and CR 9(1)(e) Review Plan.

THE CONTRACTOR will as part of the Risk Management process involve regular checking by way of monitoring and review. THE CONTRACTOR will strive for continuous improvement of our Risk Management framework.

Monitoring and review will be a planned part of the risk management process and involve regular checking or surveillance. The results should be recorded and reported externally and internally, as appropriate. The results should also be an input to the review and continuous improvement of **THE CONTRACTOR's** risk management framework.

Responsibilities for monitoring and review will be clearly defined. The firm's monitoring and review processes will encompass all aspects of the risk management process for the purposes of:

- Ensuring that controls are effective and efficient in both design and operation
- Obtaining further information to improve risk assessment
- Analysing and learning lessons from risk events, including near-misses, changes, trends, successes and failures
- Detecting changes in the external and internal context, including changes to risk criteria and to the risks, which may require revision of risk treatments and priorities
- Identifying emerging risks.

As part of the monitoring process, the thresholds for the risk criteria will be reviewed at the commencement of each risk assessment cycle to identify the processes that may be subject to increased risks and, as such, would derive the greatest value from the risk assessment.

MONITOR & REVIEW:

THE CONTRACTOR will regularly update the risk register and document any actions or events that change the status of a risk, for example:

- Changes to a risk evaluation as a result of improvements in controls
- A control breach and near miss will be logged at the time of the event
- A new risk that has been identified.

Personnel will review the risk register on a regular basis, such as at a monthly safety meeting, to determine if any remedial action needs to be taken immediately.

CONTINUOUS IMPROVEMENT:

The effectiveness of the risk management framework implemented needs to be periodically reviewed to ensure continuous improvement of risk management in the firm.

The purpose of the framework is to embed a risk aware culture within THE CONTRACTOR. This can be evaluated in light of breaches and near misses, the effectiveness of communication, and assessing what lessons have been learned and remedial actions taken.

The framework is only effective if the context remains relevant to the activities, as this sets the scope for risk management. Ensure the practice objectives and the internal and external context for risk management are current and accurate.

The assessment criteria used in the risk framework also will be reviewed to ensure they remain relevant to the size and complexity of the project.

THE CONTRACTOR will ensure effective monitoring and review through:

- Reporting to management (change in scope)
- Involvement of all personnel in the monitoring
- Progress will be monitored on 2 weekly basis or per new task
- Regular review (critical milestones) on effectiveness of risk mitigation measures. Findings will be used to improve better implementation
- Evaluation of the outcomes
- Collective objectives for monitoring & review of risks
- The Construction Supervisor; Manager and Risk Assessor will be responsible for the monitoring of the Risk Management process and gathering of data

The key output for the Risk monitoring and review stage of the project is an on-going process. The documentation of the risks can be implemented by way of a Risk Register:

Reference: OHSA 85 of 1993
Construction Regulation 2014

CLIENT

GREATER TZANEEN MUNICIPALITY

BASELINE HAZARD IDENTIFICATION AND RISK ASSESSMENT

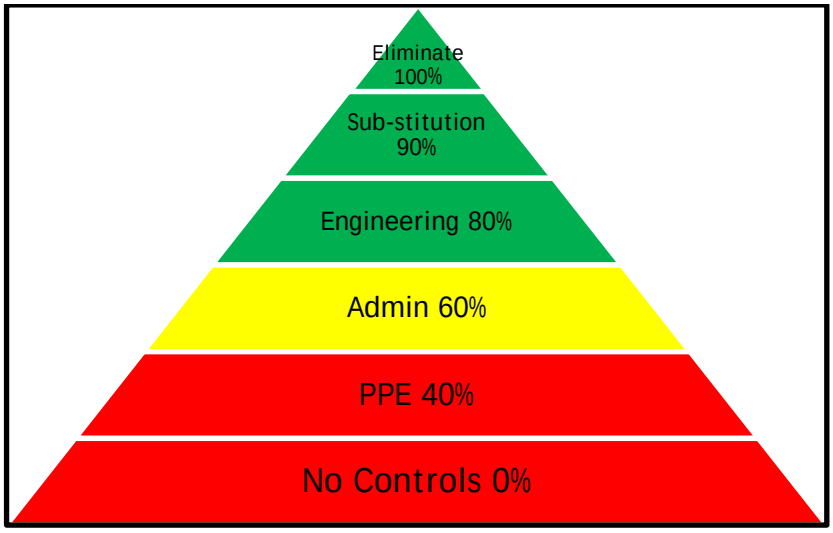
FOR PROJECT :

ROOF REPLACEMENT AT CIVIC CENTRE

TYPE OF WORK PERFORMED	ROOF REPLACEMENT
PREPARED BY:	MM Consultants

RISK ASSESSMENT CONTROL SAMPLES

EFFECTIVENESS OF CONTROLS:



CONTROLS (EXAMPLES ONLY)		
ENGINEERING	ADMINISTRATIVE	PPE
• Local exhaust ventilation • General ventilation • Silencer on machine • Installed lighting • Barricading • Bunding • Access control cages • Automated lockout • Filter bags • Drip tray • Machine fixed guard • Earth leakage • Automated braking system • Wet scrubber • Sound proofing • Closed water reticulation • Drainage/water channels • Automated access control • Filtration system • Speed limiter • Reconditioning • Product reuse in process • Ligt curtain • Methane/ energy capture	• Inspections • Culture survey • Posters • Demarcation • Symbolic signage • Colour coding • Waste permits • Monitoring programme • Labelling • Lock out • Performance tests • MSDS • Vehicle licence • Certificate of compliance • Toolbox talks/awareness • Training • Appointments • Emergency plan • Mock drill • Internal or external audits • Incident recall • HSE committee meeting • Supervision • Medical surveillance • Man-job specification • Work instructions • Planned job observation • Waste management • All documentation	• Hard hat • Goggles • Safety harness • Boots • Face shield • Gauntlets • Boot flap • Gloves • Lead apron • Ear protection • Hazchem suit

BASELINE RISK MATRIX		HAZARD EFFECT / CONSEQUENCE				
Loss Type		**1 Insignificant**	**2 Minor**	**3 Moderate**	**4 Major**	**5 Catastrophic**
Timeline		No impact on overall project timeline	May result in overall project timeline overrun of less than 5%	May result in overall project timeline overrun of between 5% and less than 20%	May result in overall project timeline overrun of between 20% and less than 50%	May result in overall project timeline overrun of 50% or more
Budget		No impact on the budget of the project	May result in overall project budget overrun of less than 5%	May result in overall project budget overrun of between 5% and less than 20%	May result in overall project budget overrun of between 20% and less than 50%	May result in overall project budget overrun of 50% or more
Investment Return – NPV loss		Less than R5m	R5m to less than R50m	R50M to less than R500m	R500m to R5b	R5b or more
Quality		No impact on quality	Minimal quality issues that can be addressed in a short timeframe with minimal interactions	Some quality issues that requires immediate management action	Significant quality issues that requires senior project management interaction	Significant quality issues that requires sponsorship intervention with significant resource and cost implications for rework
Safety / Health		First aid case / Exposure to minor health risk	Medical treatment case / Exposure to major health risk	Lost time injury / Reversible impact on health	Single fatality or loss of quality of life / Irreversible impact on health	Multiple fatalities / Impact on health ultimately fatal
Environment		Minimal environmental harm – L1 incident	Material environmental harm – L2 incident remediable short term	Serious environmental harm – L2 incident remediable within LOM	Major environmental harm – L2 incident remediable post LOM	Extreme environmental harm – L3 incident irreversible
Legal & Regulatory		No legal impact	Minor legal concerns with minor impact	Some legal concerns with manageable level of impact	Serious legal concerns and significant impact on operations	Legal non-compliance with risk of shutdown of operations with significant cost impacts
Reputation / Social / Community		Slight impact - public awareness may exist but no public concern	Limited impact - local public concern	Considerable impact - regional public concern	National impact - national public concern	International impact - international public attention
LIKELIHOOD		**RISK RATING**				
5 Almost Certain	The unwanted event has occurred frequently; has a 90% and higher probability of reoccurring	**11 Medium**	**16 Significant**	**20 Significant**	**23 High**	**25 High**
4 Likely	The unwanted event has a probability of between 60% and less than 90% of occurring	**7 Medium**	**12 Medium**	**17 Significant**	**21 High**	**24 High**
3 Possible	The unwanted event has a probability of between 30% and less than 60% of occurring	**4 Low**	**8 Medium**	**13 Significant**	**18 Significant**	**22 High**
2 Unlikely	The unwanted event has a probability of between 1% and less than 30% of occurring	**2 Low**	**5 Low**	**9 Medium**	**14 Significant**	**19 Significant**
1 Rare	The unwanted event has never occurred, has a probability of less than 1% of occurring	**1 Low**	**3 Low**	**6 Medium**	**10 Medium**	**15 Significant**

BASELINE RISK ASSESSMENT

NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	C	L	RR	HOW IS HAZARD TO BE DEALT WITH	BY WHOM	BY WHEN?
1.	SECTION 1 : SITE ESTABLISHMENT								
1.1	- INCOMPETENT PERSONS - INCORRECT STACKING - PROCEDURES DURING SITE ESTABLISHMENT	• Injuries during off loading • Cuts and burns • Rushed activities • Incorrect supervision • Trip and fall • Cuts • Collapsing of stacks	• Hand and back injuries • Dropping of equipment • Physical injuries • Lost Time injuries • Medical treatment cases • Potentially fatal accidents • Loss of limbs	2	2	6	• The contractor must declare all employees competent in writing • Contractor OHS file must be approved prior to site establishment begins • Site specific safe work procedures must be followed • Site -induction must be given to all employees to make them aware of the specific hazards • Employees must be issued with correct PPE before work begin • All workers on site must be declared medically fit by a medical practitioner	- Construction supervisor - Contractor Safety Officer - CHSA (Construction Health & Safety Agent) - Construction Manager - Construction supervisor	During site establishment
1.2	OFFLOADING HEAVY EQUIPMENT AND CONTAINERS P/C SITE ESTABLISHMENT	• Defective mobile crane can cause accidents • Adverse weather conditions • Untrained personnel/ Operators • Unsafe hooking methods unstable load	• Serious injury and fatalities • Damage to property and equipment • Potential hand & foot injuries • Standing time	3	4	19	• Material to be stacked on firm and level ground. • Stacking to be supervised by a competent supervisor. • Adequate storage area to be provided • All unstable stacks to be dismantle and stacked over • Load test certificate will be submitted to the client. • Rope certificates must be submitted to the client. • Safe load indicator must be in good working order. • Over wind device must be in place and in working order. • Daily checks as per checklist by operator. • Checklist signed by supervisor and filed by safety officer.	- Construction Supervisor - CHSO - Construction Manager	During site establishment
1.3	SITE SECURITY AND FENCING	• Theft of property • Fires • Unsafe conduct or access by visitors/or public	• Financial losses • Loss of equipment / documentation • Stolen goods/material	2	2	5	• Fence with lockable gates • 24 Hour Security deployed • Fire prevention • All required OHS signage	- Construction Manager	

NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	C	L	RR	HOW IS HAZARD TO BE DEALT WITH	BY WHOM	BY WHEN?
1.4	HOUSEKEEPING: - ABLUTION FACILITIES - CLEAN DRINKING WATER - SHELTERED EATING AREA - DESIGNATED PARKING AREAS - BUNT AREA FOR DIESEL - STORAGE / OFFICE FACILITIES - DESIGNATED STACKING AREAS	• Poor health and diseases • Unsafe movement of people and equipment on site • Personal injuries • Trip & fall incidents • No proper stacking & storage - lead to trip & fall	• Diseases • Serious injuries • Environmental impact • Personal injuries • Lost time injuries • Medical treatment cases • Uncontrolled traffic management could lead to accidents	2	2	3	• Use site establishment checklist to ensure compliance with all items • Designated stacking area to be identified • Laydown area • Parking area for vehicles • Correct signage	- Construction Supervisor - Construction Manager - Housekeeping Supervisor - Stacking & Storage Supervisor	
1.5	TEMPORARY ELECTRICAL SUPPLY	• Incorrect installation • Electrocution • Damaged services • Unstable positioning Electrical box	• Medical treatment cases • Fatality due to electrocution • Lost time injuries	4	4	21	• Ensure all cables are marked properly and isolated • Electrician to provide C.O.C for temporary installation • Lock-out/Isolation • Qualified Electrician	- Construction Supervisor - Contractor Safety Officer - Electrical Engineer	At all times
2	THEFT/SECURITY	• Unauthorised removal of tools, equipment or substances • Theft of equipment & material	• Financial losses to the company. • Tools, equipment or substances which may be used by inexperienced or incompetent persons could result in injury or ill health to such persons.	4	3	18	• All tools, equipment or substances will be stored in a safe and secure manner. • Security staff will conduct searches of premises and persons in a random basis. • Relevant records will be kept. • Access controls to premises will be maintained.	- Construction Supervisor - CHSO - Security (24 Hr) to be arranged	At all times
3	LABOUR CONTROL	• Sub-standard time keeping and attendance records • Poor record keeping • Disputes due to poor labour practices	• Persons remaining on site after the official end of shift time could be injured • Legal disputes and strikes • Standing time due to strikes • Financial losses due to strike action	4	4	20	• Attendance registers are kept at the main offices. • Records of overtime • Sign all company policies with labourers • Proper induction of workforce • Ensure labour contracts signed with all labourers • Signed copies of labour contracts are kept on file in the site office	- CLO - Contractor	Before work commence

NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	C	L	RR	HOW IS HAZARD TO BE DEALT WITH	BY WHOM	BY WHEN?
4	ENVIRONMENT: - WATER POLLUTION - AIR POLLUTION	• Hazardous substances from the construction process entering rivers, streams or dams • Waste substances from workshops, repair bays or salvage/scrap site • Dust from construction work • Gases and fumes released into the atmosphere	• Contamination of rivers, streams or dams which could result in illness to persons who may consume the water • Contamination of ground water resulting in possible illness to persons • Contaminated water entering rivers or streams • Persons exposed to harmful dust which could result in respiratory illness • Persons exposed to gases and fumes • Damage to structures through corrosion	2	2	9	• Biological monitoring programmes • Regular environmental surveys are conducted • Fumes and gas emission controls at discharge points, i.e. filler system. • Regular environmental survey.	- Construction Supervisor - Construction Health & Safety Officer	Before works commences
5	TEMPORARY STOCKPILING OF MATERIAL (WASTE MANAGEMENT)	• Stacker's working area always to be kept clean and tidy. Floor area to be free from obstacles • Stacker to stay away from all moving parts of machinery • Un-barricaded area could lead to unauthorised access	• Injury to hand, feet, legs and arms • Lost time injuries • Medical treatment cases • Crushed fingers; Splinters in fingers or hands • Cut to fingers or hands, feet or legs injured • Injury to hands, arms, legs and feet • Injury to all parts of body	2	2	8	• Stackers to be inducted into the use maintenance and reason for wearing PPE • The following PPE is to be used: - Overalls - Safety boots - Gloves - Hard hat - Earplugs(if required) • Units are to be stacked according to a set standard the stack is to be stable and secure before strapping operation may begin • Strapping is also to be done to pre-planned set standard • Be aware of forklift movement when it comes to collect the load • Stackers are to be trained how to stack properly and in a safe way • Stackers are to be trained how to strap properly • Forklift driver to alert stacker that is entering his working area • Stacker to be inducted at his work place. Re: housekeeping and safety • Stacker to be inducted to stay away from the composite plant and moving machinery	- Construction Supervisor - Construction Health & Safety Officer - Hand tools Inspector - Stacking and Storage Supervisor	All the time

NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	C	L	RR	HOW IS HAZARD TO BE DEALT WITH	BY WHOM	BY WHEN?
6	FIRE	• Lightning • Burning of refuse on site • Unsafe electrical connections could lead to fire hazards • Uncontrolled Hot Works/ Sparks lead to ignition source	• Damage to property or equipment • Destruction of vegetation and possible damage to property or equipment • Injury to persons who enter the area • Environmental pollution	4	3	17	• Fire breaks around structures and buildings • Fill excavations with top soil when full • Maintain perimeter fence and fire breaks • Access gates to be locked • Removal of potential fire hazard sources	- Fire Control Officer - Construction Supervisor - CHSO	At all times
6.1	FIRES IN STORES	• Spontaneous combustion caused when chemicals such as HTH and oil products come into contact with each other • Accumulation of vapours/fumes in confined spaces • Accidental ignition during vehicle refuelling. • Ignition of flammable substances due to smoking or naked flames. (i.e. grease/oil, paint, etc.) • Ignition of compressed gas • Ignition of items such as timber, cotton waste, etc. • Ignition due to faulty electrical cables/fittings	• Fires or explosions which could result in damage to property and injury to person • Lost time injuries • Potential for ignition due to naked flames or smoking • Fatalities • Medical treatment cases • Fire or explosion resulting in injury and damage to property • Injury to persons or damage to property or serious injury to personnel • Damage to property	4	3	17	• Conform to the manufacturer's safe handling and storage instructions • MSDS for all combustible materials (chemicals) • Ensure storage area is well ventilated • Display relevant symbolic signs • Adequate fire extinguishers placed in strategic positions. • Warning signs informing persons of danger. • Stored in approval storage areas, i.e. flammable stores • Fire hydrants are required at strategic points • Electrical cables and fitting must not be secured to timber roof beams/ structures i.e. use steel brackets	- Fire Control Officer - Construction Supervisor - Hazardous Chemical Supervisor	At all times

NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	C	L	RR	HOW IS HAZARD TO BE DEALT WITH	BY WHOM	BY WHEN?
2	SECTION 2: BUILDING WORK								
1	ROOF WORK (WORKING AT HEIGHTS) - Lifting of Roof Trusses unto Roof	• Inadequate preparedness for type of equipment could lead to serious injuries and fatality. • Use of incorrect equipment could cause falls, falling objects • Defective equipment could lead to collapsing structures • Fragile surfaces • Overloading can lead to ropes; slings snapping and cause damage & injury to personnel	• Fatality major disabling injuries • Standing/Lost Time Injuries • Failure to establish safe system for work could lead to fatalities & serious disabling injuries • 1st Aid Medical Treatment cases	4	3	18	• SWL for steel beams to be inspected • Inspect slings; chains; pulleys and hooks • Inspect if overhead power lines • Barricade working area • Qualified operator • No workers under suspended load	- Site Supervisor - Team members - Safety Rep - Working at heights Supervisor - Fall Protection Plan Developer - Construction Supervisor	Before and During task
2	ELECTRICAL INSTALLATIONS - External main power supply	• Falling from ladder, back injuries • Hand injuries • Dust particles falling from roof, • Eye damage. • Damage to cable if not done properly. • Electrocution • Falling of lights, damage to property / assets • Fire from incompetent electrician when misconnecting cables etc.	• LTI • 1st Aid Cases / Medical treatment • Serious injuries from falling • Back injuries from falling • Possibility of budget overrun on project • May result in project time overrun	4	3	17	• Ensure power is off and isolated. • All workers must wear PPE to prevent injuries • Trained and qualified electrician to complete task • Proper supervision from Supervisor • Toolbox Talks to be conducted on electrical tasks. • Always have a Fire Extinguisher at job task • All tools and equipment must be inspected. • Fire extinguishers must be available and serviced • Proper supervision must be applied from Supervisor • Correct tools and equipment must be used. • All workers must wear correct and sufficient PPE as required. • Toolbox Talk on Power tools • Ensure Electricity is isolated and locked out / switched off.	- Site Supervisor - Safety Rep - Team - Competent Electrician - Electrical Engineer	Before and During task

NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	C	L	RR	HOW IS HAZARD TO BE DEALT WITH	BY WHOM	BY WHEN?
3	FIRE PROTECTION - Fire Extinguishers	• Inadequate and wrongly placed fire equipment can cause delay in dealing with fire should it occur. • Poor housekeeping • Falling of objects • Hand injuries • Back injuries • Strains • Non availability of fire equipment's • Untrained personnel using wrong type of equipment to extinguish the fire delays in searching for fire extinguisher. • Fire alarm not functional or inaudible • Access blocked and people trapped inside, firefighting team not able to obtain access. • Shortage or non-operation of firefighting equipment. • Overcrowding at exit point during fire.	• LTI • Medical Cases / 1st Aid Cases. • May result in overall project overrun • Trip slip and falls. • Serious injuries or possible fatalities when fire gets out of control. • Damage to property • Medical treatment • Bruises, cuts, broken limb. • 1st aid case treatment • Loss of life	3	3	13	• Adequate fire equipment to be provided and placed at suitable location • Monthly checklist of all fire equipment's. • Provide training and have fire drills periodically. • Store material in demarcated areas. • Cigarettes to be extinguished properly and thrown into rubbish bins. • Ashtrays and waste bins to be emptied daily. • Fire escape routes and assembly points to be determined and clearly marked. • All workers must use appropriate PPE, • Close supervision • Discuss risk assessment with workers. • Induction training. • Toolbox talks training.	- Construction Supervisor - Foreman - Fir fighting Team - First Aider - Fire prevention supervisor	Before and During task
4	RETAINING STRUCTURES	• Falling objects • Unstable surfaces • Unplanned activities • Incorrect work procedure • Collapsing structures	• Lost time injuries • Medical treatment cases • Collapsing structures leading to standing time	4	3	18	• Proper instruction • Engineer design • Proper supervision • Correct tools for the task • Correct PPE • All workers to be inducted on PPE	- Construction Supervisor - Construction Manager	At all times

NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	C	L	RR	HOW IS HAZARD TO BE DEALT WITH	BY WHOM	BY WHEN?
5.1	Ergonomics	• Repetition movements resulting in MSD's	• Lost time injury • Medical treatment cases • Body Injuries • Project time and budget overrun.	4	3	17	• Train employees in recognizing MSD symptoms. • Encourage early reporting of MSD symptoms. • Re-evaluates work procedures. • Ensure regular resting periods.	- Site Supervisor - Safety Officer - Safety Rep - Team	Before and During task
5.2		• Grip force with hands, wrists, arms resulting in muscle fatigue and inflammation of the muscles and tendons	• Lost time injury • Medical treatment cases • Body Injuries • Project time and budget overrun	4	3	17	• Employees must rest regularly. • Re-evaluates work procedures and workflow	- Site Supervisor - Safety Officer - Safety Rep - Team	Before and During task
5.3		• Lift/Lower force activities that could result in lower back injuries	• Lost time injury • Medical treatment cases • Body Injuries • Project time and budget overrun	4	3	17	• Employees need proper training in lifting practices. • Job task observations to ensure adequate employees to complete tasks. • Mechanical lifting where possible should be encouraged. • Packaging and type of material to be used can also be redesigned.	- Site Supervisor - Safety Officer - Safety Rep - Team	Before and During task
5.4		• Working in awkward positions this squatting, kneeling and sitting resulting in fatigue and the effects associated with overuse of muscles, joints and tendons	• Lost time injury • Medical treatment cases • Body Injuries • Project time and budget overrun	4	3	18	• Adequate resting brakes should be allowed. • Continuous job tasks analyst should be conducted. • Redesigning of the task should be investigated. • Employees are encouraged to report when any discomfort is experienced.	- Site Supervisor - Safety Officer - Safety Rep - Team	Before and During task
5.5		• Extreme temperatures that could also lead to heat exhaustion	• Lost time injury • Medical treatment cases • Body Injuries • Project time and budget overrun	4	3	17	• Trained first aider with knowledge of heat exhaustion should always be on site. • Sufficient fresh water must be taken every hour (600ml). • Where possible proper bush hats to be issued to protect employees from direct sunlight. • Sunscreen should also be available.	- Site Supervisor - Safety Officer - Safety Rep - Team	Before and During task

NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	C	L	RR	HOW IS HAZARD TO BE DEALT WITH	BY WHOM	BY WHEN?
5.6	Ergonomics (continue)	• Activities that result in hand-arm vibration (HAV) and whole - body vibration (WBV) that could result in MSD and white finger syndrome	• Lost time injury • Medical treatment cases • Body Injuries • Project time and budget overrun	4	3	17	• Equipment with the lowest vibration factor should be used where possible. • Work procedures where vibrating equipment are excluded should be preferred. • Proper maintenance schedules must be in place. This must include seating in mobile plant. • Proper medical surveillance program should be in place. • Employees must have proper training in the use of vibrating equipment. • Where hand held vibrating equipment is used vibrating reducing hand gloves must be issued.	- Site Supervisor - Safety Officer - Safety Rep - Team	Before and During task

NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	C	L	RR	HOW IS HAZARD TO BE DEALT	BY WHOM	BY WHEN
	SECTION 3: COVID-19								
1.	Pre-construction site opening	1.1. Site management not trained and/or informed on spread, contracting, identifying and managing the possible spread and infection on site.	• Management Personnel not trained/aware of risks associated with COVID-19 in working under high risk virus contamination conditions. • Ineffective preventative and/or mitigation implemented for project. • Site personnel infected. • Site closure.	5	5	25	• All site management to be trained on COVID-19 virus and site management w.r.t prevention, identifying and spreading of virus • Policy with procedure/method statement, risk assessment to be developed for COVID-19 management during project before re-opening of site. • Site Specifications to be changed and re-approved	Site Manager / Safety Officer	Before construction commence
		1.2. No Corona COVID-19 risk assessment / policy and/or procedures available for managing COVID-19 for project.	• Personnel not trained/aware of risks associated with COVID-19 in working under high risk virus contamination conditions.	3	3	18	• Site induction: All personnel to be re-inducted to also include COVID-19 preventative measures • Principal Contractor to compile and/or draft policy, procedure and risk assessment for COVID-19 management. • Re-induct and train site safety officer and/or CORONA Monitoring officer to implement and manage preventative measures. • Monitoring officer to implement and manage preventative measures - at least one permanent employee on site to comply with COVID-19 preventative measures for project.	Site Manager / Safety Officer	Before construction commence

NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	C	L	RR	HOW IS HAZARD TO BE DEALT	BY WHOM	BY WHEN
	Pre-construction site opening (continue)	1.3. No trained assessing, monitoring and implementation staff	• Infected personnel accessing site.	3	3	18	• Train site safety officer and/or CORONA Monitoring officer to implement and manage preventative measures. • Monitoring officer to implement and manage preventative measures - at least one permanent employee on site to continued compliance with COVID-19 preventative measures for project.	Site Manager / Safety Officer	Before construction commence
		1.4. No and/or ineffective site access control.	• Ineffective monitoring of personnel accessing site. • Infected and/or unauthorised personnel accessing site.	5	5	25	• STRICT access control measures to be implemented with permanent gate guarding. • All authorised personnel to be issued with access card for inspection at manned access gate. • Project personnel to wear appropriate over-all with company logo to ensure only authorised personnel is on site. • Plan on staggering starting times to reduce congestion at access gate and to maintain social distancing. • All site access systems to be changed to NON-SKIN CONTACT access and/or control systems such as time keeping/biometric systems, turn style access system, etc.	Site Manager / Safety Officer	Before construction commence
		1.5. Site safety specifications does not include COVID-19 preventative measures and/or actions.	• Site contractors implementing incorrect / not sufficient mitigating factors for COVID-19 virus prevention	5	5	25	• All site-specific safety specifications to be reviewed by appointed project safety agent and revision to be issue to project. ALL contractors to receive new revision safety specifications and to implement said preventative measures	Site Manager / Safety Officer	Before construction commence

NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	C	L	RR	HOW IS HAZARD TO BE DEALT	BY WHOM	BY WHEN
2.	Accessing the site	2.1 Site visitors / un-informed personnel accessing the site.	• Personnel not aware of implemented mitigating factors and PPE to be used during work.	5	5	25	• <u>Site induction: All personnel to be re-inducted to also include COVID-19 preventative measures</u> • Personnel trained/made aware of risks associated with COVID-19 in working under high risk virus contamination conditions before work starts. • Personnel to be trained on all mitigating factors for accessing and working on site. • Personnel instructed on preventative measures - non-contact body temperature monitoring, application of hand sanitiser before entering access gate, regular hand sanitising at sanitising stations on site, fulltime wearing of facial masks - 3xply surgical or N95 rated masks, NO personal contact between employees, keeping hands from face. • Body temperature above 38.5deg C to be reported and employee to be refused access to site, • COVID-19 site policy or procedure to be followed with said employee. • Information- and notice boards, posters and other promotional material to be displayed throughout the site reminding and/or indicating sanitising, hand washing procedure and other information to assist with COVID-19 spread prevention	Site Manager / Safety Officer	Before construction commence
		2.2 Congestion at access gate eating areas, toilets, toolbox talk sessions, etc. - no social distancing possible or incorrectly applied	• Employees exposed to possible infected personnel. • Spreading of virus on site to other employees. • Personnel infected at work causing infection at home and/or community.	5	5	25	• Staggering of work start/stopping times, site meetings and lunch times for the project. • Marking of gathering areas to ensure 1m distance between personnel waiting to be monitored and hand sanitised. • Constant supervision and monitoring by safety personnel and/or appointed COVID-19officer. • Limiting number meetings and attendees to only 10 personnel for meetings. • Use of social media for site- and feedback meetings • Non-contact temperature testing before leaving work.	Site Manager / Safety Officer	Before construction commence

NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	C	L	RR	HOW IS HAZARD TO BE DEALT	BY WHOM	BY WHEN
3.	Site Operations	3.1 Congestion at on site eating areas, toilets, toolbox talk sessions, meetings, et	• Employees exposed to possible infected personnel. • Spreading of virus on site to other employees. • Personnel infected at work causing infection at home and/or community	5	5	25	• Staggering of work start/stopping times, site meetings and lunch times for the project. • Marking of gathering areas to ensure 1m distance between personnel waiting to be monitored and hand sanitised. • Constant supervision and monitoring by safety personnel and/or appointed COVID-19 officer. • Limiting number of meetings and training sessions (site inductions) and attendees to only 10 personnel for meetings. Use of social media for site- and feedback meetings	Site Manager / Safety Officer	Before construction commence
		3.2. Principal Contractor not providing non-contact temperature monitoring, hand washing and hand sanitiser/ facilities and/or PPE for personnel entering site - inadequate face masks	• Possible infected personnel accessing site and spreading the virus. • Possible infected Personnel spreading virus by coughing / sneezing - infected saliva breathed in by other employees.	5	5	25	• PC to compile policy, Risk Assessment / Method Statement and Safe Work Procedure for project. PC to instruct all contractors to do the same. All said documentation to be communicated to all site personnel. Proof of comms to be retained in site safety file. • PC to conduct non-contact body temp. monitoring at least 3 x per day. PC to place hand washing and/or hand sanitiser facilities at site entrance, office area and strategically on site • PC to provide correct PPE for minimising saliva spread: 3xplay surgical masks, N95 or similar, full site specified PPE. • Transport operator / PC not limiting passengers to ensure social distancing as prescribed by Government (1m spacing) • Supplying personnel with 3-layer face masks - 3x layer disposable surgical face masks or 3 layer re-usable material face masks	Site Manager / Safety Officer	Before construction commence

NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	C	L	RR	HOW IS HAZARD TO BE DEALT	BY WHOM	BY WHEN

	Site Operations (Continue)	3.3. Personnel travelling to and from construction site, delivery vehicles and other off-site mobile plant and/or machinery.	• Overcrowding of transport carriers. Personnel not complying with social distancing.
			• COVID-19 virus spread due to 8-hour life expectancy on material on inside of transport.
			• Not adhering to risk assessment, safe work procedure and actions for personnel being transported toPersonnel not trained in working under high risk COVID-19 contamination conditions
				5	5	25	• PC to compile policy, Risk Assessment / Method Statement and Safe Work Procedure for transporting of personnel and all deliveries to and from site
							• Training all site personnel:
							  • Information on COVID-19, symptoms, spread and prevention of spread.
							  • Personal hygiene w.r.t COVER-19: Cleaning of clothing/PPE daily.
							  • All policies. Procedures/method statements and risk assessment.
							• PC to instruct all contractors to do the same. All said documentation to be communicated to all site personnel. Proof of comms to be retained in site safety file.
							• PC to conduct non-contact body temp. monitoring before personnel accessing transport vehicle.
							• Ensuring all personnel use hand sanitiser before accessing transport vehicle. place hand washing and/or hand sanitiser facilities at site entrance, office area and strategically on site.
							• PC to provide correct PPE for minimising saliva spread: 3xplay surgical masks, N95 or similar, full site specified PPE.
							• Transport operator / PC not limiting passengers to ensure social distancing as prescribed by Government (1m spacing)
							• Supplying personnel with 3-layer face masks: 3-layer disposable face masks or 3-layer re-usable material face masks.
								Site Manager / Safety Officer	Before construction commence

NO	HAZARD/ITEM	RISK ASSOCIATED WITH HAZARD	CONSEQUENCES	C	L	RR	HOW IS HAZARD TO BE DEALT	BY WHOM	BY WHEN
	Site Operations (Continue)	3.4. Transporters not sanitised before and/or after use.	• Spreading of contaminated transport vehicle. • Possible infected personnel accessing site and spreading the virus. • Possible infected Personnel spreading virus by coughing / sneezing - infected saliva breathed in by other employees.	5	5	25	• PC to compile policy, Risk Assessment / Method Statement and Safe Work Procedure for project. PC to instruct all contractors to do the same. All said documentation to be communicated to all site personnel. Proof of comms to be retained in site safety file. • All mobile plant and vehicles to be disinfected after use at least once per day for mobile plant and machinery and after every trip for all personnel transporters.	Site Manager / Safety Officer	Before construction commence

C4: SITE INFORMATION

C4.1 SITE INFORMATION

The site is located in the existing Tzaneen Civic Centre building, Agatha Street Tzaneen. Tenderers are expected to familiarise themselves with the area. No claims will be considered from a contractor during the contract as a result of the failure to familiarise themselves with the site.

Enclosure of the works – specific requirements (General Preliminaries Clause 4.2)

Hoarding requirements

Hoard off and secure building areas. The extent of which is as defined on drawing, including temporary directional signage and dustproofing, to allow work to proceed with minimum disruption to the existing adjacent facilities and protection of the public and municipal staff in accordance with health and safety regulations, to be dismantled and removed from site on completion of work. The temporary barriers are to secure the facility from intruders during both working and non-working hours.

C5-SPECIFICATIONS

C5.1 LIGHTING PROTECTION

Appendix A

LIGHTNING PROTECTION

LIGHTNING PROTECTION GENERAL SPECIFICATION

DATE: 26-Jan-21

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1. GENERAL REQUIREMENTS

1.1. CODES AND STANDARDS

Documents referred to in this section:

LOCAL CODE:	
SANS 10313:	Protection against lightning — Physical damage to structures and life hazard
SANS 62305:	Protection against lightning
	Part 1: General requirements
	Part 2: Risk analysis
	Part 3: Physical damage to structures and life hazard
	Part 4: Electrical and electronic systems within structures.
SANS 1063	Earth rods, couplers and connections
SANS 10199	The design and installation of earth electrodes
OHS Act of 1993	Occupational Health and Safety Act 85 (Act No. 85 of 1993)
SANS10400	National Building Regulations
SANS10142	The wiring of premises Parts 1 & 2
INTERNATIONAL CODE:	
BS EN 62305 – 1 to 4	Protection against lightning
BS EN 50164 – 1 to 3	Lightning protection components (LPC)
BS EN 13601	Copper and copper alloys. Copper rod, bar and wire for general electrical purposes
BS 7430	Code of practice for earthing

2. PRODUCTS

2.1. LIGHTNING PROTECTION

a) Lightning protection systems shall be designed and installed in accordance with the requirements of the South African and international standards. All lightning protection components shall be tested and certified compliant with SANS10313 and SANS 62305.

b) The system shall comprise of an air termination(s), down conductor(s), testing joint(s), earth termination(s) and earth electrode(s). Steel reinforcing in columns can be used as a down conductor provided it is in compliance with the SANS 10313 and SANS 62305 requirements and does not endanger persons or structure.

c) The materials for the component parts of the lightning protective system shall be those detailed within BS EN 62305 or SANS documents. Care shall be taken in the selection of bonding clamps to prevent corrosion from the action of dissimilar metals.

d) All components shall be from a proprietary manufacturer approved by the Engineer.

e) The overall resistance to earth of the lighting protection system, before bonding to the metal or services in or on the structure, shall be less than 10 Ohms.

f) Metallic roofing and cladding shall be verified as being electrically continuous and bonded to the lightning protection system. All metallic projections on or above the main surface of the roof structure shall be bonded to the lightning protection system. All bonding connections shall be covered in grease to prevent corrosion.

g) Any extended metal running vertically through the structure shall be bonded to the lightning conductor at the top and bottom, unless the clearances are in accordance with the standards and codes.

h) Where the foundations or piles, etc. are being used as the earth termination network for the lightning protection scheme, reference electrodes shall be installed for periodic monitoring of the condition of the network.

i) All earth electrodes shall be solid copper bonded earth rod type jointed by internal threaded coupling dowels complete with appropriate driving stud and spikes. The overall diameter of the rod shall not be less than 12mm and the minimum length shall be 2.4m. The lighting protection system shall comprise of dedicated earth electrodes or bonded in accordance with the regulations to the structural reinforcing. Low resistance earthing compound shall be utilised as backfill material for all bore holes to minimise the effects of corrosion.

j) Interconnecting conductors shall be enclosed within 50mm PVC ducts and buried to a depth of at least 450mm. Connections between earthing leads and electrodes shall be by means of solder-less non-ferrous mechanical connectors.

k) The terminated head of each electrode shall be located in a light weight inspection pit suitable to handle a static load of 6.0 tones.

l) All underground joints shall be carried out using an exothermic process and protected against corrosion. Above ground joints shall be made using gunmetal or phosphor bronze fittings and fixtures. All above ground joints shall be accessible for inspection.

m) Joints between any ferrous, steel or aluminium structures or equipment casings and the copper lighting protection system shall be via suitable bi-metallic connectors in compliance to the local regulations and codes.

n) Any exposed metal parts e.g. balcony hand rails etc shall be bonded to the main lightning protection system at the same intervals / spacing as per the horizontal conductor's placement from the height of 20m and above. These shall be bonded using a cable with a minimum cross-sectional area of 50mm2.

o) Bonds shall be of the same material as the main lighting conductor network, except where they are installed direct in the ground when they shall be 25mm x 3mm copper strip. Under no circumstances shall an aluminium strip be installed direct into the ground.

p) The installer shall take full account of the environmental conditions at the site and the materials used in the building construction to supply and a lightning protection system that will provide trouble-free life of at least 25 years.

q) Any building weatherproofing shall not be impaired.

r) Testing joints shall be provided in a convenient position for testing, approximately +400mm above finish floor level.

s) Earth electrodes shall consist of metal rods or tapes or a combination of both as directed by the Engineer.

t) On completion of the installation, the whole system shall be tested in accordance with the SANS requirements. Copies of the test results shall be forwarded to the Engineer for approval.

3. EXECUTION OF WORKS

3.1. GENERAL

The specialist lighting protection installer shall submit the risk evaluation and the achieved LPL calculation based on SANS requirements. The level of class and basis of design will need to be submitted to the Electrical Engineer for comment.

All lightning protection components shall be tested and certified compliant with BS EN 50164-1 and BS EN 50164-2 and/or the local South African Standards.

Whilst other trades are providing components that will form part of the lightning protection system, such as piles, reinforcement bars, metallic handrails, etc. The Lightning Protection Contractor is responsible for the overall system, this includes linking of the conductor system to the structural steelwork and reinforcing bars, miscellaneous bonds to structural steelwork, lift guide rails, tracks, grilles, cladding system and any other exposed metallic conductive parts, testing the whole system in conjunction with the structural package contractors.

The Structural Contractor and the Lightning Protection Contractor is responsible for providing continuous structural steelwork and reinforcement bars which are electrically continuous, although the Lightning Protection Contractor shall be responsible for the verification /testing of joints etc. to the satisfaction of the Engineer prior to concrete pours.

The Lightning Protection Contractor shall make allowance for a system which is not based on the use of the structural steel in case approval for the above proposal is rejected by the local authority.

The Contractor shall provide provisions to allow the system to be maintained regularly.

C5.2 EARTHING AND BONDING

Appendix B

EARTHING & BONDING

EARTHING & BONDING GENERAL SPECIFICATION

DATE: 26-Jan-21

TABLE OF CONTENTS:

1. GENERAL REQUIREMENTS

1.1. CODES AND STANDARDS

1.1.1) Materials, equipment, and associated works shall be carried out in strict accordance with the following standards and regulations as applicable:.

LOCAL CODES:	
SANS10142	The wiring of premises Parts 1 & 2
OHS Act of 1993	Occupational Health and Safety Act 85 (Act No. 85 of 1993)
SANS10400	National Building Regulations
SANS 10292	Earthing of low-voltage (LV) distribution systems
SANS 10198	The selection, handling and installation of electric power cables of rating not exceeding 33 kV
SANS 10313:	Protection against lightning — Physical damage to structures and life hazard
SANS 62305:	Protection against lightning
	Part 1: General requirements
	Part 2: Risk analysis
	Part 3: Physical damage to structures and life hazard
	Part 4: Electrical and electronic systems within structures.
SANS 1063	Earth rods, couplers and connections
SANS 10199	The design and installation of earth electrodes
INTERNATIONAL CODE:	
BS 951	Clamps for earthing and bonding purposes.
BS 2754	Construction of electrical equipment for protection against electric shock.
BS 6651	Code of Practice for protection of structures against lightning.
BS 7430	Code of Practice for earthing.
BS 7671	Requirements for electrical installations IEE Wiring Regulations

2. PRODUCTS

2.1. GENERAL

Earthing and bonding of the electrical services installation shall comply with the South African Standards and Codes of Practice detailed at the end of this section and the particular requirements of the local supply authority i.e. City Power.

The function of Earthing System for an electrical installation shall be:

- To maintain potential of any part of the installation of a definite value with respect to the ground.
- To allow current to flow in the event of a fault to ground, so that the protective equipment will operate and the faulty circuit thus become isolated.
- To ensure that in the event of the fault, equipment normally “dead” (un-energised) does not attain a dangerous potential above or below ground.

3. EXECUTION

3.1. GENERAL

a. Where pipes etc are to be bonded, the cable shall be connected to an adjustable metal clamp complying with the Standards for use with variable sizes of water and/or gas pipe.

b. Approved warning labels shall be fixed to each earth termination or bonding connection to structural steel, water or gas pipes etc, durably marked with the words 'Safety Electrical Connections – Do Not Remove'.

c. Where metal conduit, trunking, cable sheaths and/or armouring is employed as part of the earthing system all joints, terminations and connections shall be constructed to afford a low impedance path for fault currents. All joints and connections shall be suitably protected to prevent deterioration caused by bi-metallic or other corrosion. The cross sectional area of the material shall comply with the requirements of the national standards.

d. Mechanical joints between aluminium and copper shall have the joint faces lightly coated with a suitable compound to prevent corrosion, before the connection is made.

e. The armouring of plastic sheathed cables shall terminate in a suitable compression gland fitted with a purpose made earth tag. A suitable protective conductor shall connect the earth tag to the apparatus earthing terminal. The earth tag shall be manufactured from a high conductivity material compatible with the cable gland.

f. The armouring of metal sheathed cables shall be securely clamped to the gland at the cable termination with a purpose made bolted clamp. A suitably sized protective conductor shall be installed to connect the armour clamp or gland to the apparatus earthing terminal.

g. For an outdoor termination, the armouring shall be suitably protected to prevent corrosion.

h. Where metal sheathed and/or armoured single core cables are employed, bonding conductors shall be installed at each end of the cable run and connected to the apparatus earthing terminal. These bonds shall effectively connect the sheaths and/or armouring of the single core cables where they leave trefoil formation. Cable glands in such circumstances shall be lightly insulated to prevent circulating sheath currents. Where the cable run does not exceed 10m, only one bond shall be installed, to earth the cable sheath and/or armouring.

i. Metal sheaths and/or armouring of multicore cables connected to a cubicle-type switchboard shall be effectively connected to the switchboard earth bar as described elsewhere in this specification.

j. Where armoured multicore cables are terminated on a unit motor starter panel or local disconnector a separate protective conductor shall connect the incoming and outgoing armouring to the starter panel or disconnector earthing terminal. Similarly, the motor

frame shall be connected to the cable armouring or the starter panel or local disconnector whichever is more convenient.

k. The earth terminal of all socket-outlets shall be connected to the protective conductor of the final circuit. Where the protective conductor is formed by conduit, trunking or the metal sheath and/or armouring of cables the earth terminal of the socket-outlet shall be connected to an earth terminal in the box or enclosure associated with the conduit, trunking, or cable.

l. Joints in cable runs will not be permitted.

3.2. CLEAN EARTH

a. Where a 'clean' earth system is specified it shall be derived directly from the main earth bar and only connected to earth at that point and at no other point throughout its entirety. The connection shall be made through a disconnecting test link. a white engraved label with the legend clean earth in 25mm orange lettering shall be provided in a prominent position above the test link.

b. Protective earth functions must take priority however and any combined 'clean'/protective conductor shall be coloured green/yellow.

3.3. EARTHING FOR MV/LV TRANSFORMERS

a. The earthing system shall comprise low resistance earth electrodes for earthing the transformer neutral and metalwork associated with the medium voltage distribution, a main earth busbar, and connections to the transformers and switchgear.

b. The earth electrode system shall consist of driven copper clad steel rods or copper strips lay in formed trenches. The earth resistance shall not exceed 1 ohm before interconnection with the building metal work, cable armour, etc.

c. Insulated stranded cables shall be run to the transformer neutrals via the LV switchboard neutral busbar and to the earth electrodes.

d. The size of all cables and tapes shall be as detailed on the drawings.

e. Earthing of MV/LV Transformers shall be to the requirements and approval of the local supply authority and national standards

3.4. MAIN EARTH TERMINAL

a. A main earth bar, mounted on insulators, shall be located in a convenient position in the LV room and shall be drilled to accept copper tape and insulated standard conductors. The earth bar shall be rated in accordance with SANS10142. It shall be at least 500 mm

long and shall comply with the particular requirements of the local supply authority i.e. City Power / Eskom.

b. The main earth bar shall be provided with two 100% rated main earthing lead connections. Disconnecting test links shall be provided to allow periodic testing of a live installation. The requirements of the main earth bar shall be as detailed elsewhere.

c. Copper tape shall be run to connect the frames, HV switchgear frames, any fences, gates, etc., and the LV switchgear frames.

3.5. EARTHING ELECTRODES AND PITS

a. Earth electrodes shall be copper clad steel, complete with all drive type heads and connectors, and cable clamps. The number, locations, and depth of installation shall be as specified elsewhere.

b. Each earth rod shall be protected by a purpose made enclosure that is accessible for testing and maintenance purposes.

c. Where the earth rod is internal to the building, the enclosure can be formed in the floor structure, with a load bearing cover. It shall be of a proprietary manufactured sealed type, to prevent water ingress. The rod shall pass through a 75mm diameter tube that has been cast into the floor structure. The top of the 75mm diameter tube shall be sealed with a non-hardening mastic compound and a sealing gland assembly to prevent the ingress of water into the earth pit.

3.6. PROTECTIVE MULTIPLE EARTHING (PME)

a. Metalwork forming part of a telegraphic, telephone or signalling circuit need not be bonded.

b. The minimum size of the consumer PME bonding is related to the size of the service cable and shall be as required by the PME regulations where applicable.

c. The earthing connections shall be made using single core cables with insulation coloured green/yellow or equal and approved.

d. Approved warning labels shall be fixed to each connection suitably marked with the words ‘Safety Electrical connection - Do Not Remove’.

C5.3 GENERAL ELECTRICAL INSTALLATION

Appendix C

ELECTRICAL INSTALLATION

Electrical Installation Specification Document

DATE: 27-Jan-21

1. TABLE OF CONTENTS:

3. SCOPE OF WORK

1) Earthing & Lightning protection to the new Roof which include down conductors on the new external columns
2) External lights to the new columns
3) Lighting and small power to the new board room
4) Relocating power supplies to some of the external HVAC units.

4. SCOPE

This specification details the requirements for the design, manufacture, installation, testing and commissioning of all electrical installations.

5. APPLICABLE DOCUMENTS & STANDARDS

SANS 10142:	Code of Practice for the Wiring of Premises
OSHA (Act85):	Occupational Health & Safety Act
SANS 10114 :	Interior Lighting
SANS 162:	Metal Conduit
SANS 1507-1:	Electric Cables with Extruded Solid Dielectric Insulation for Fixed Installations (300/500V to 1,900/3,300V) Part 1: General
SANS 1507-2:	Electric Cables with Extruded Solid Dielectric Insulation for Fixed Installations (300/500V to 1,900/3,300V) Part 2: Wiring Cables
SANS 1507-3:	Electric Cables with Extruded Solid Dielectric Insulation for Fixed Installations (300/500V to 1,900/3,300V) Part 3: PVC Distribution Cables
SANS 1507-4:	Electric Cables with Extruded Solid Dielectric Insulation for Fixed Installations (300/500V to 1,900/3,300V) Part 4: XLPE Distribution Cables
SANS 1507-5:	Electric Cables with Extruded Solid Dielectric Insulation for Fixed Installations (300/500V to 1,900/3,300V) Part 5: Halogen-Free Distribution Cables
SANS 1507-6:	Electric Cables with Extruded Solid Dielectric Insulation for Fixed Installations (300/500V to 1,900/3,300V) Part 6: Service Cables
SANS 97:	Electric Cables - Impregnated Paper-Insulated Metal-Sheathed Cables for Rated Voltages 3,3/3,3kV to 19/33kV (Excluding Pressure Assisted Cables)
SANS 1339:	Electric Cables - Cross-Linked Polyethylene (XLPE) Insulated Cables for Rated Voltages 3,8/6,6kV to 19/33kV
SANS 1411-1:	Materials of Insulated Electric Cables & Flexible Cords Part 7: Conductors

SANS 1411-2: Materials of Insulated Electric Cables & Flexible Cords Part 8: Polyvinyl Chloride (PVC)

SANS 1411-3: Materials of Insulated Electric Cables & Flexible Cords Part 9: Elastomers

SANS 1411-4: Materials of Insulated Electric Cables & Flexible Cords Part 10: Cross-Linked Polyethylene (XLPE)

SANS 1411-5: Materials of Insulated Electric Cables & Flexible Cords Part 11: Halogen-Free, Flame-Retardant Materials

SANS 1411-6: Materials of Insulated Electric Cables & Flexible Cords Part 12: Armour

SANS 1411-7: Materials of Insulated Electric Cables & Flexible Cords Part 13: Polyethylene (PE)

Where any document or standard is referenced, it shall be deemed to be the latest version of that document.

6. REQUIREMENTS

6.1) GENERAL

The supervision of all electrical work carried out by the Contractor shall be done by qualified licensed and competent personnel.

A list of key personnel and their CV's shall be submitted to the Engineer at the time of tendering, for his approval.

A sufficient complement of such personnel shall be maintained on site. Changes to key personnel shall only be done with the written consent of the Engineer.

The full time presence on site of the above approved supervisory personnel is required.

The Contractor will be responsible for:

- The Supply of Tools, Material & Equipment Required for Construction
- Transporting, Offloading & Storage of All Above to Site
- The supply, delivery, installation, termination and testing of all cabling. This cabling includes all power reticulation cabling, both MV and LV as well as all internal wiring required.
- The design, supply, delivery and installation of all cable trays according to routes indicated.
- The supply, delivery and installation of all conduit and power skirting according to routes indicated.
- The supply, delivery and installation of all small power distribution boards, conduit and conduit fittings, luminaries, switches, switched socket outlets, trunking, cable and wire, termination kits and all other paraphernalia required to effect a fully operational small power installation.
- QA & Test Certification as Required & Detailed Elsewhere
- Final Documentation as Detailed Elsewhere in this Document

In the absence of a compulsory site visit, the tenderer shall ensure that he has satisfied himself of the prevailing site conditions. No claims in this regard will be entertained.

The tenderer will allow for any items not specifically mentioned in the BOQ, but which are obviously required for the successful completion of the job.

Where a serious omission is noted by the Contractor, he will communicate his concerns to the Engineer as soon as he becomes aware of such an omission.

Where a Contractor intends to deviate from this specification, he will communicate his intention to the Engineer. Such deviation will only be allowed at the discretion of the Engineer. Where no such notice of deviation is received from the tenderer, it will be assumed that his offer meets all requirements of this specification.

6.2) COMPLIANCE WITH REGULATIONS, STANDARDS & SPECIFICATIONS

The complete Electrical Installation shall satisfy all National and Local Laws, Standards and By-Laws as applicable to the area where the installation is to take place.

The installation shall be carried out in strict accordance with the current Rules and Regulations of OHSA Act 85 and the local Fire Regulations.

An Electrical Certificate of Compliance (COC) shall be issued by the Contractor upon completion of his work.

Where the installation is in a hazardous environment, all relevant SANS codes shall apply. The Contractor will be provided with the relevant Hazardous Area Classification by the Engineer. He will ensure that he installs equipment which is correctly rated for the area.

Equipment shall be installed so as to ensure that:

- Inspection, Maintenance, Cleaning & Replacement is Easy to Perform & at Minimum Cost
- Safe Operation Under Site Conditions is Ensured

All Client enforced safety standards shall at all times be observed and adhered to by the Contractor. All site personnel will be required to attend the Client's safety induction training. The Contractor will accordingly provide for this in his submission.

Where a Contractor is barred from site by the Client appointed safety personnel, no claim for standing time will be entertained.

The Contractor will at all times maintain and keep up to date a safety file and present it on demand, for inspection, to the Engineer or the Client's Safety Officer.

6.3) SAFETY & SWITCHING

At no time will any circuit be powered up without the prior written approval of the Client's Electrical Engineer. The Contractor will inform the Engineer of his program in good time so that the necessary permission can be issued and the appropriate safety steps taken.

6.4) COMMUNICATION WITH THE RELEVANT SUPPLY AUTHORITY

The Contractor will be responsible for communicating to the Relevant Supply Authority, be it a Local Authority or the Client himself, all requests for switching.

The Contractor will be responsible for ensuring that a circuit is safe to work on when it is switched off.

6.5) QUALITY OF MATERIALS & WORKMANSHIP

Only new and unused materials of best quality shall be used. Materials shall, where applicable, comply with SANS specifications and where possible be of South African manufacture. This applied in particular to electrical cable.

Jointing of cores is not permitted. Joints in cable are only allowed when the length of cable exceeds the standard manufactured length of cable on a drum. Joints will only be made using an approved jointing kit and by qualified personnel. Buried joints will be clearly marked and noted on “as built” drawings.

The trimming of strands in order to fit a cable core into a lug is not permitted. Where a connection is required to be made using a nut and bolt, the nut and bolt shall be high tensile steel and appropriately treated against corrosion. Spring washers are not permitted. Cup washers will be used. The bolt and nut shall be torqued to manufacturer’s specifications.

The storing, transporting, handling and laying of cables shall be carried out in accordance with approved and accepted practice. When cable is rolled off a drum, it shall be adequately supported to prevent twisting, undue tension and subsequent damage. The Contractor will have at his disposal all tools and equipment required to lay and install cable correctly.

Before any cables are laid, the Engineer or his representative will inspect all cable trays, supports, trenching and routing in general.

Installation of instruments and other equipment shall be installed in accordance with the manufacturer’s specifications and project requirements.

Shoddy workmanship will not be permitted.

All cabling points of entrance or egress from buildings will be adequately sealed against the adverse effects of weather and vermin. ROXTEC or expanding foam will be acceptable.

All cables, including spares should be terminated and marked in accordance with Client requirements.

Any work not conforming to the specification, or general requirements of good workmanship shall be made good or replaced at the discretion of the Engineer.

6.6) CABLE TRAYS/RACKING/TRUNKING/POWER SKIRTING

The Contractor shall supply and install the appropriate cable trays as required by the cable routes. Provision should be made for 30% extra space in the width of the cable trays for future expansions.

Cable racks will in general be medium to heavy duty perforated, galvanized and of local manufacture. Mesh type racking may be acceptable in light application and above false ceilings.

Racking shall be supported at maximum centers of 1,5m, depending on the load and span. Racks shall also be supported at each change of direction. Supports may be fixed either from a wall and/or ceiling; rawl bolted or clamped whichever is applicable. Minimum distances between walls/ceilings and cable racks will be 150mm.

Trunking/sleeving should have the capacity to cater for at least the same amount of cable already installed, or as otherwise specified.

Where the Contractor is required to weld or drill any existing structure in order to affix cable supports, this will only be carried out with the approval of the Client.

Power skirting will in general have at least two compartments or as otherwise specified. Power circuits will be tapped every 500mm and the looped wire left inside the trunking, if not immediately connected to a socket outlet.

6.7) CONDUIT

Conduit installed in areas designated as office space will be flush mounted. PVC conduit is acceptable.

Conduit installed in workshop or other industrial areas will be steel. All metal conduit will conform to SANS 162-2011.

6.7.1) METAL CONDUIT

Metal conduit shall be of heavy gauge solid drawing or welded steel, bearing the SANS mark. Except where otherwise stated, all conduits shall be galvanized.

All cast metal conduit accessories shall be of the malleable iron inspection type.

Metal conduit shall be assembled by means of the “BOSAL” system of threadless conduit fittings. All accessories used on the “BOSAL” system shall be cadmium plated.

Mechanical earth continuity must be ensured at all points.

6.7.2) PVC CONDUIT

PVC conduit is permitted in offices and other non-industrial areas.

6.7.3) SURFIX CABLE

Surfix cabling will be allowed where specified on the electrical drawings and single line diagrams.

6.7.4) FLEXIBLE CONDUIT

All flexible conduit shall be of the type with a flexible galvanized shell core, with a black watertight oil-resisting PVC sheath.

Termination fittings for the conduit shall be of the watertight screwed type, fitted with nylon sealing rings and screw-in earth continuity cones. Flexible conduit shall be equal and similar to “Sealtite” or “Hydratite” manufacture.

6.8) CONDUIT INSTALLATION PRACTICE

6.8.1) GENERAL REQUIREMENTS

Lighting and plug circuits are to be run in separate conduits and not more than one circuit will be allowed in a conduit, except where otherwise specified.

Likewise, each point shall be wired through a conduit dedicated to that power point only, except where otherwise specified.

Conduit installed in ceiling in roof spaces shall be run parallel and at right angles to roof members and not at random and is to be securely saddled at intervals not exceeding 1,5m for metal and 1.0m for PVC. Conduit installations for confined spaces of less than 1,0m clearance or where the space will after completion of the work be inaccessible, shall be carried out from outside such space.

Metal conduit terminating in boxes, trays, etc., shall be finished off with lock nuts and brass bushes.

Except in the case of concrete slabs, conduit terminating in ceiling points is to be taken to the face of the ceiling and finished off under the fittings with a brass or plastic bush depending on the type of conduit used. Conduit shall be firmly supported at these points.

All conduit joints are to be tightly assembled. Screwed running joints with long threads are to be provided with a lock nut to ensure a mechanically strong and electrically continuous joint.

The entire conduit system is to be electrically and mechanically continuous throughout.

6.8.2) CHASING & BUILDING IN

The Civil Contractor will be responsible for the building in of all conduit, switch boxes, distribution boards etc., which are to be built in as work progresses. It is however the responsibility of the Electrical Contractor to ensure that conduits are correctly positioned and he must ensure at all times that the conduit is placed in position in good time. The Electrical Contractor will be held responsible for any delays or damage caused by failure to observe this clause. Where by arrangement with the Civil Contractor, the Electrical Contractor is required to chase conduit, all such work and consequent damage as well as the making good thereof, shall be for the Electrical Contractor's account.

6.8.3) CONDUIT IN CONCRETE

Conduit shall be installed as close as possible to the neutral axes of concrete beams or slabs. Conduit and outlet boxes shall be securely fixed to shuttering to obviate displacement during the pouring of concrete.

Conduit shall drop to the lower face of concrete and terminate at outlet boxes only at points where such boxes are to be installed. On existing concrete structures, conduit shall be run only in approved positions and where required, the depth of chasing of such structures shall be approved.

The Contractor will liaise closely with other Contractors and providers of other services in order to ensure that clashes with other equipment are kept to the bare minimum.

The Electrical Contractor is to be present during the casting processes so as to ensure that no damage or displacement occurs to conduit.

Immediately after each section of shuttering has been stripped, the Electrical Contractor shall by means of steel tape establish whether all conduit boxes are accessible and all conduit runs intact and clear. Any shortcoming detected at this juncture must be immediately rectified in an approved manner.

6.8.4) CONDUIT ON SURFACE

Where surface work is permitted, conduit runs shall be perfectly straight and level.

After completion of surface work, no exposed thread shall show, except where running joints occur. The latter shall only be resorted to where absolutely unavoidable and must be fitted with a sliced coupling as a lock nut.

Saddles shall be fixed by means of approved patented wall plugs. Screws used will be plated or passivated.

All saddles shall be galvanized hospital type spacer saddles.

6.8.5) BENDS & DRAW BOXES

Normal bends or elbows will not be allowed except where specifically approved. All sets shall have a radius of at least five times the outside diameter of the conduit and conduit showing signs of flattering or cracking shall be rejected.

Draw boxes shall be installed in approved positions so that not more than two bends occur between one end of a run and draw box or between boxes. Draw boxes shall be arranged so as to be accessible after the completion of the building and must be provided with cover plates, which shall finish neatly and flush in the final surface, except where the surface is finished in paneling, in which case a door to match the paneling shall be provided at the expense of the Electrical Contractor.

Draw boxes shall, where possible, be located in inconspicuous places allowing for a common cover and rectangular shall be square with respect to walls.

6.8.6) REAMING

The ends of all conduits shall be cleaned internally by means of a reamer of all burrs and rough edges in compliance with the Wiring Code.

6.8.7) WALL BOXES

Wall boxes for socket outlets, switches, micro-gap isolators, etc., shall be of the heavy gauge pressed steel galvanized type, provided with lugs and shall be drilled and tapped for fixing screws. Where appropriate and permitted, boxes of rigid plastic, bearing the SANS mark, may be employed.

Knock-out conduit entry holes shall be provided on all sides, including the back.

All steel wall boxes shall be treated with “Anodite” red oxide primer before installation, applied by brush or by dipping, as an added rust proofing agent. Before applying the primer, all surfaces shall be cleaned with a suitable emulsion type galvanized iron cleaner.

The normal dimensions of wall boxes shall be as follows:

- Single Switch Units: 50x100x50
- Two Switch Units on Common Cradle: 50x100x50
- Switched Socket Outlets (Single or Double): 100x100x50
- Plug & Special Miniature Single Pole MCCB: 100x100x50

Not more than one circuit shall appear in any one wall box except where otherwise specified. The Electrical Contractor shall supervise the building-in of wall boxes to ensure correct positioning.

6.8.8) EXPANSION JOINTS

Where conduit installed in concrete crosses a building expansion joint shall be provided with a conduit expansion joint in the conduit run, without loss of earth continuity.

6.9) FLUSH-MOUNTED DISTRIBUTION BOARDS

Care must be taken to make sure that expanded metal to the rear of bonding trays are spot-welded properly where installed in 115mm walls.

Panels must be fixed to the architrave frame by means of two fixed locating pins and two chromium-plated screwdriver or square key quick-release and quick-loss catches. Self-tapping screws are not acceptable.

6.10) WIRING OF CONDUIT

A suitable rated 3 phase 4 wire 50Hz supply will be available from the local LT supply main DB to the subsequent DB’s. Available voltages may vary from site to site. The Contractor will be informed of the voltages in the RFQ document.

Circuits shall consist of the following wire types:

	Phase	Neutral	Earth
• Lighting (General)	2.5mm	2.5mm	2.5mm

• Lighting (High Bay)	4mm	4mm	2.5mm
• 16A Socket Outlets	2.5/4mm	2.5/4mm	2.5mm
• Console AC Units	4mm	4mm	2.5mm
• UPS 16A Socket Outlets	4mm	4mm	2.5mm
• Welding Plugs	6mm	6mm	4mm

All wiring shall be carried out in a 600V Grade PVC insulated wire. Wiring of any circuit shall only be carried out after the whole of that particular circuit conduit installation has been installed and fixed into positions.

It should be possible for wires to be drawn through the complete conduit installation without any undue strain.

Not more than five 2.5mm² or four 4.0mm² together with earth wires where applicable will be allowed in 20mm tubes, or in accordance with SANS 10142.

All conductors shall be in colours selected to facilitate identification of circuits, black being reserved for neutral conductors, and green/yellow for insulated earth conductors. Three phase circuits shall be colour coded to identify phases.

All metal conduits must be earthed and bonded to form effective earth continuity conductors. In addition a bare copper earth continuity conductor shall be drawn into each conduit serving apparatus which is required to be earthed in terms of the Standard Regulations for the Wiring of Premises.

Earthing clips or straps are to be made of copper.

6.11) CABLE ROUTES

Supply and install cables on underground or surface routes as indicated on the drawings. The cable schedules, if provided, indicate provisional route lengths which are to be used for tendering purposes but the actual lengths required are to be measured on site and these lengths submitted to the Engineer for approval before ordering. Any variation between tendered and measured lengths will be covered by price adjustments in accordance with the Contract variation rates.

NOTE:

Where parallel cables are specified the cable lengths are to be calculated by multiplying the route length by the number of parallel cables.

6.12) CABLE SPECIFICATION

No damaged or previously used cable will be accepted.

Cable shall be manufactured and supplied on one length to the lengths specified unless these lengths exceed a standard drum length, in which case a ruling shall be obtained from the Engineer. Under no circumstances will joints be allowed unless specifically directed in writing by the Engineer.

6.12.1) LOW VOLTAGE PVC CABLES

All electrical cables must be sized according to load current and voltage drop as required by SANS 10142.

If not elsewhere specified all power cable supplying three phase units shall be either three or four core, with the black conductor serving as neutral, PVC PVC SWA PVC to SANS 1507.

The minimum cable size shall be 2.5mm².

6.12.2) MEDIUM VOLTAGE PAPER-INSULATED LEAD-COVERED CABLES

Cables shall be manufactured in accordance with SANS 97 and shall come only from fresh stocks.

The cable construction shall be impregnated paper-insulated/lead alloy E sheathed type with an extruded PVC impermeable bedding for protection against electrolysis/double steel tape or galvanized steel wire armoured/outer PVC sheath.

The conductors shall be of high conductivity, annealed, stranded copper that may be shaped or circular.

The conductor insulation shall consist of impregnated paper tapes, either pre-impregnated or mass-impregnated with a non-draining compound.

The bedding shall consist of an extruded layer of PVC and the sheath shall be lead alloy E. The serving shall consist of watertight extruded black PVC to eliminate electrolytic corrosion of the cable.

Where the cables may be subject to severe vibration, the lead sheath shall be alloy B instead of alloy E. (Roadway crossings, bridges or near railway tracks).

Armouring shall consist of double steel tape of galvanized steel wire. It should be noted that a cable with wire armour has a much higher earth fault rating than a cable with tape armour and that in vertical installations only wire armoured cable shall be used.

The cable insulation shall be suitable for the supply voltage specified and the cable must be suitable for a system with an unearthed neutral.

At the request of the Engineer, tests shall be carried out on production runs of the cable in accordance with SANS 97.

6.12.3) MEDIUM VOLTAGE CROSS LINKED POLYETHYLENE CABLES

Cables shall be manufactured in accordance with SANS 1339 and shall come only from fresh stocks.

The cable construction shall be of cross linked polyethylene dielectric (XLPE) type with conductors and core screens, bedding tape, copper tape screens, binder in the case of multi core cables, extruded bedding, armouring (steel wire or aluminium as specified) and an outer PVC sheath.

The conductors shall be of high conductivity, annealed, stranded copper or aluminium in accordance with SANS 1411: Part 1. Aluminium cables can only be used where indicated on electrical engineers drawings.

A semi conducting screen shall be provided on each conductor, either extruded or taped. The dielectric shall be in continuous adherent contact with the conductor screen and be itself covered with a semi-conducting core screen and a metallic screen. Semi-conducting bedding tape is required.

The core screen may be semi-conducting tape, overlapping, or extruded, as allowed in SANS 1339-2010. The metallic screen shall be annealed copper tape as allowed in SANS 1339-2010.

Cables shall be either single core tape A1 or A2, three core type A, type B or type C as specified.

Where subject to environmental conditions deleterious to the dielectric, a lead alloy sheath (alloy B or E as specified) and heat barrier in accordance with SANS 1339-2010 may be specified.

PVC bedding for armoured cables is required. Armouring shall be steel wire armour (SWA) in the case of 3 core cables and where required and shall be hard drawn aluminium (AWA) in the case of single core cables and where required.

The outer sheath shall be PVC, colour as specified and U/V stabilised where specified.

At the request of the Engineer (and if specified), tests shall be carried out on production runs of the cable in accordance with SANS 1339-2010.

6.12.4) INSTALLATION OF CABLES IN TRENCHES, SLEEVES & DUCTS

The storing, transporting, handling and laying of cables shall be carried out in accordance with approved and accepted practice. When cables are rolled off the drums, it shall be adequately supported to prevent twisting, undue tension and subsequent damage. The Contractor must have at his disposal enough and adequate equipment and labour to prevent damage to the cables during these operations.

Before any cables are laid, all trays shall be inspected by the Engineer or his representative.

Except where otherwise specified, trenches for cables up to 1,000V shall be 600mm deep, whilst trenches for cables in excess of 1,000V shall be 900mm deep.

Trenches shall be wide enough to accommodate all cables of like voltage in one horizontal plane, separated by at least twice the diameter of the largest cable.

Danger tape shall be provided and laid by the Contractor, 200mm above cables.

Properly sifted bedding soil shall be placed in the bottom of the trench to a depth of 50mm. The cables shall be covered with a further layer of sifted soil to a depth of 100mm. The soil used will not be river sand but will match the soil removed during excavation of the trench.

Prior to any trench being closed, the Contractor will call the Engineer to inspect. In laying and covering underground cable, due cognisance should be taken of the theft risk associated with cables lying exposed and uncovered.

Cable markers shall be provided and installed by the Contractor at the beginning and end of a cable trench as well as any direction change.

6.12.5) EXCAVATIONS & TRENCHING

a) Hard Rock shall mean granite, quartzitic sandstone, slate and rock of similar or greater hardness, solid shale and boulders over 300mm in diameter. For the purpose of applying representative rates for trench excavations this definition may be further subdivided into rock that may be dislodged and loosened by machine, e.g. jackhammer, ripper, etc. and all rock so firmly cemented as to present all characteristics of solid rock which can only be removed by drilling and blasting.

b) Soft Rock shall mean rock that can be loosened by hand-pick and includes hard shale, compact ou-klip and boulders from 75mm up to 300mm in diameter.

c) Earth shall mean ground that can be removed by hand-shovel and includes loose gravel, clay, make-up ground, loose or soft shale, loose ou-klip and boulders less than 75mm in diameter.

NOTE:

Notwithstanding that a formal site inspection may or may not have been held, all excavations and trenches shall be priced in accordance with the rate applicable to Soft Rock. It shall be determined at the time of executing the work which category actually applies, or if differing conditions are encountered, what quantities of each category apply and the Contract shall be adjusted accordingly.

In trenches made in soft and hard rock, the cables shall be laid on a 75mm thick bed of sieved sand and be covered with a 150mm layer of sieved sand before the trench is filled. The first 300mm of backfilling above all cables shall be completely free of stones.

For the purposes of the Tender it shall be assumed that neither sieving of sand nor importing of sieved sand shall be required. A rate shall, however, be provided for sieving excavated material and for importing sieved sand so that the Contract may be adjusted according to the actual requirements.

The Contractor shall, before excavations commence, familiarize himself with the route and conditions on site and it shall be his responsibility to obtain the necessary information with regard to other plant along the route and every effort shall be made to avoid damage to this plant.

The exact positioning of trenches shall be approved on site by the Employer and/or Engineer and excavations shall not commence until approval has been received.

The cable trenches shall be excavated to a depth of 1 000mm and 6-00mm below ground level for MV and LV cables respectively and shall not be less than 300mm wide for one or two cables, and the width shall be increased where more than two cables are laid together, so that the cables may be placed at least 150mm apart throughout the run. The bottom of the trench shall be level and clear, and the bottom and sides free from rock or stones liable to cause damage to the cables.

Tenderers may, with the permission of the Principal Contractor and with the approval of the Engineer obtain information regarding the water table on the Site. The cost of excavation shall include for removing water from the trenches. The Tenderer should satisfy himself on this matter and may carry out tests on Site.

The Contractor shall take care to avoid damage to buried pipes such as earthenware drain and effluent pipes, etc.

6.12.6) CABLE INSTALLATION

All cables to be installed by qualified personnel having the necessary skill, training and experience.

Cable bend radius to be at least twelve times the diameter of the cable over armouring. Sufficient slack to be left to relieve stresses.

All ends shall be sealed off immediately after cutting to prevent moisture absorption.

The Contract Price shall not include making good concrete or macadamized surfaces.

Should any cable routes cross any roads or railways, these crossings must be sleeved by 150mm diameter reinforced concrete pipes which are to be supplied and installed by the Principal Contractor. In each case a spare sleeve is to be provided for possible further additions. Only one cable is to be installed in a cable pipe duct or sleeve except in the case of very small cables if there are insufficient ducts for all cables.

Cables in trenches shall be laid with sufficient slack to relieve stresses. The cables shall be clamped where necessary to relieve the stress on joints of the lead sheath.

The Contractor shall provide all necessary equipment and labour for handling cables and for drawing into ducts, etc. All bends shall be in easy sweeps and no twisting of cables shall take place. All ends for drawing into sub-stations, building, etc., and overlaps for jointing shall be allowed. All cutting, capping and depressing of cable ends must be carried out by the Contractor. Cables must be handled with care to ensure that the insulation will not be damaged. In all cases where long lengths are pulled a purpose-made cable sock and cable rollers shall be used.

The Contractor shall take the necessary precautions to avoid injury or damage as a result of the excavations and the Contractor will be held liable in the event of claims arising from such injury or damage. Tenderers are advised to include for taking out a suitable insurance policy.

Prior to laying the cables in the ground the trench shall be inspected thoroughly to ensure that it is free from all objects likely to damage the cable either during or after cable laying operations.

Except where ducts, tunnels or pipes are provided and unless instructed to the contrary, the Contractor shall lay the cables direct in the ground.

Cable rollers shall be used at all times whilst laying cables, but they shall have no sharp projecting parts liable to damage the serving on the cables. They shall be placed in the trench in such a manner as to prevent the cable being dragged along the bottom of the trench or ground.

Where cables have to be drawn around corners, skid plates or cable rollers turned on edge shall be used for this purpose. The skid plates shall be well lubricated and must be securely fixed between rollers and must be constantly examined during cable laying operations.

The Contractor shall ensure that during laying operations the minimum bending radius is not exceeded. Particular care should be taken where the cables are "flaked" for ease of laying.

When more than one length of cable is laid between two points, the cable shall be laid in one direction only to avoid cross-over of phase cores in joints.

In the event of the Contractor having to extend an existing cable, it shall be his responsibility to obtain the existing cable phase rotation to ascertain in what direction he has to lay the new cable.

Where the Contractor has to lay two cables for a future "cut-in" to an existing cable, he shall at all times lay the first cable in the one direction and the second cable in the opposite direction.

Every precaution shall be taken to maintain paper-insulated cable moisture-free during any jointing or terminating operation, and when cables are cut the ends shall be immediately lead capped to exclude moisture and are to remain sealed until they are to be made off. No temporary sealing will be permitted.

6.12.7) BACKFILLING & REINSTATEMENT

All excavations made shall be backfilled in 300mm layers, the earth in each layer being well tamped and consolidated and sufficient allowance made for settlement.

The refilled trench shall be maintained by the Contractor at his expense, in a thoroughly safe condition for the duration of the Contract.

All backfilling of road crossings shall be preferably consolidated with a mechanical power-driven compactor.

Surplus excavated material shall be disposed of by and at the cost of the Contractor who shall leave the trench and adjacent area in a clean and safe manner.

6.12.8) CABLES LAID IN PIPES, DUCTS & CABLEWAYS

Where specified, cables to be laid under railways or roads shall be laid in Pitch Fibre or Fibre Cement Pipes. (Pipe sleeves by others).

The Contractor shall ensure that all cable pipes are sound, clean and free from "rag" before drawing cables therein. Where numerous pipes are to be installed, they shall be installed in banks with a maximum of three banks. The minimum clearance between the uppermost pipe and the finished road level shall be 750mm. Where spare pipes are installed, their ends shall be blanked off with suitable "End Caps" after they have been cleared of any soil, etc., that might have entered at the time of installation. After the cables have been laid the ends of the pipes shall be sealed with a weak mix of coarse builder's sand and cement, the price of which shall be included for in the unit price for laying the cable pipes.

6.12.9) BURIED CABLE MARKERS

All buried cable routes shall be marked with approved concrete slab type cable markers at intervals of not more than 20m and at every change of direction. The positions of all cable markers are to be approved by the Engineer and the actual location of the cable markers is to be recorded accurately by the Contractor on drawings. The exact information recorded on the cable marker is to be decided in conjunction with the Engineer.

6.13) JOINTING & TERMINATING OF CABLES

Connection of cables to switchgear shall always be effected in such a way that the various phases, seen from the front of the switchgear shall be in the following positions:

No. 1 Conductor: Left (red) (A)

No. 2 Conductor: Centre (white) (B)

No. 3 Conductor: Right (blue) (C)

Exposed armouring shall be covered with bitumen-base paint.

All cable ends shall be supplied with the necessary earth connection.

A channel or other approved means of support shall be provided to remove mechanical stress from the glands.

Cable cores shall be marked with heat-shrunk sleeves where necessary to identify the phases.

The current-carrying capacity and breakdown voltage of the cable end shall be the same as for the complete cable.

Cables shall be terminated in accordance with the recommendations laid down by the manufacturers of the cables and glands employed.

It is a definite requirement that the Contractor shall only employ personnel fully conversant with cable manufacturer's recommendations for joining and terminating cables.

6.13.1) HEAT SHRINKABLE MATERIALS

Heat shrinkable materials may only be used in exceptional circumstances with the written permission of the Engineer.

The complete kit shall be packed in a container that is marked for the type of cable insulation and construction as well as the voltage range for which the materials are suitable.

An illustrated set of instructions for the installation of the materials shall accompany every kit.

The joints and terminations shall make minimal, if any, use of insulating or stress relieving tapes. The use of electrical stress control and insulating tubing that is heat-shrunk onto the termination or joint is preferred above other methods.

The materials shall comply with VDE 0278 and the supplier shall be called upon to confirm this aspect before acceptance of the materials or installation.

The heat-shrinkable and other materials used for the terminations and joints shall be of a high quality and shall retain their electrical and mechanical properties without deterioration.

a) Terminations with Heat-Shrinkable Materials

   i. Terminations shall be made of a material that gives lasting protection against ultraviolet radiation.

   ii. The cores of all cables terminated outdoors and the cores of 3,3kV and higher voltage cables terminated indoors, shall be completely covered with a shrunk-on protective layer against surface tracking, ultraviolet radiation and weathering.

   iii. Outdoor terminations shall be designed to prevent flashover under wet or contaminated conditions and to ensure additional mechanical strength. This shall be achieved with shrunk-on insulating spacers and rain shields.

b) Joints with Heat-Shrinkable Materials

i. The electrical continuity of all the conductors, screens and armouring shall not be impaired by the joints and the earth continuity shall be accomplished within the joints, i.e. no external earth continuity conductor that will be subject to corrosion, is acceptable. The joints shall be completely covered by a watertight sheath to prevent corrosion.

ii. In the case of joints in cables with an outer PVC anti-electrolysis sheath, the joints shall be subject to the same electrical insulation test as the outer sheath of the cable.

c) Resin Filled Joints

i. The resin filled joint kit shall comprise a self-sealing plastic mould of high mechanical strength having sufficient connector space.

ii. The exact amount of cold hardening resin shall be provided in a two-compartment plastic bag.

iii. The resin shall have absolute minimum shrinkage.

iv. The mould and resin shall be completely waterproof and non-hygroscopic and shall be resistant to ultraviolet radiation.

v. Joint kits shall be of "SCOTCHCAST", "CELLPACK" or similar.

d) Cable Box Joints

i. Cable box shall be manufactured of die cast aluminium material for normal conditions or glass fibre reinforced thermosetting compound where exposed to corrosive conditions.

ii. The lid shall provide an absolute moisture barrier.

iii. Boxes shall contain 2, 3 or 4 entries as required.

iv. Unused entries shall be sealed with watertight blanking plugs.

v. Earth continuity shall be maintained through the box by means of the material of the box in the case of aluminium boxes or by means of earth straps and studs in the case of glass fibre reinforced boxes.

vi. Cable boxes shall be of "PRATLEY", "CCG HANDIFIT" or similar manufacture.

6.13.2) TERMINATIONS OF PAPER-INSULATED CABLES

The ends shall be terminated in cable end boxes field with bituminous, cold filling or resin oil semi-fluid compound or heat shrinkable terminations in accordance with clauses 3.14.1 above.

a) Testing For Presence of Moisture

Before terminating or joining paper-insulated cables, a test to establish the presence of moisture must be carried out.

The following procedure should be followed:

- Place an adequate quantity of cable impregnating oil in a suitable container and heat up to 130°C +/- 5°C
- Cut a small length (±300mm) of the cable concerned and remove the armouring and sheath, taking care not to handle the dielectric in any way.

- Dip a section of the outer insulating impregnated paper (belt paper) in the heated oil, taking care not to contaminate the tapes with moisture from the hands. If frothing appears on the surface of the oil, this is a clear indication of the presence of moisture in the paper.
- The same procedure should than be repeated on the insulating impregnated paper around the cores (especially those layers closest to the cores). Frothing will also indicate the presence of moisture.
- Should only a small number of bubbles appear on the surface of the oil, this is an indication of air bubbles on the paper and not moisture since the presence of moisture will result in a series of bubbles rising to the surface of the oil for a number of seconds, until all moisture has been removed.

The armouring shall be bonded to the main earth bar of the switchgear or transformer.

The lead sheath shall be wiped against the conical wiping gland.

All cut cables ends which will be exposed to the atmosphere for more than two hours shall be sealed and wired to prevent penetration of moisture.

b) Cable End Boxes

Cable end boxes shall be suitable to accept paper-insulated lead covered cables.

The cable end boxes shall be of the metal clad type suitable for indoor or outdoor use as required for the specific application. Only inverted type boxes shall be supplied for outdoor use. The insulators of the inverted type boxes are angled downwards.

The boxes shall be equipped with armour clamps and brass or gunmetal conical wiping glands.

The cable boxes shall be suitable for filling with bituminous, cold filling compound or resin oil semi-fluid compound.

The cable boxes for resin oil semi-fluid compound shall be equipped with a sight glass for compound level indication.

c) Cable End Box Filling Compound

d) Bituminous Compound

The compound boxes shall be suitable for filling metal clad cable end boxes.

The compound shall comply with BS 1858, shall be non-hygroscopic and shall have a high dielectric strength and insulation resistance.

The compound shall have good adhesive properties and shall not be susceptible to cracking.

The compound shall be suitable for use in high ambient temperatures and system voltages of up to 22kV nominal.

e) Resin Oil Semi-Fluid Compound

The compound shall be suitable for filling metal clad cable end boxes with level indicators.

The compound shall have a pouring temperature above 100°C.

The compound shall be non-hygroscopic and shall have a high dielectric strength and insulation resistance.

The compound shall have minimal contraction when cooling.

The compound shall be "HENLEY COMPOUND NO. 57018, INSULOL DG" or equivalent.

f) Quantity

An adequate quantity of compound shall be supplied to fill each cable end box. The supply of the compound is included in the contract. The compound level shall be checked after approximately six months and topped up.

6.13.3) TERMINATIONS OF XLPE CABLES

Cross-linked polyethylene cables (XLPE) shall be terminated in accordance with the requirements for terminations and joints specified above unless a pre-fabricated system based on pre-moulded slip-on EPR stress cones is used.

The copper tapes of the earth screen on the cable shall be bonded to the main earth bar of the switchgear or transformer, but the bond shall be easily removable for testing purposes.

The cable shall be firmly secured on the switchgear by means of a clamp to prevent mechanical stress on the cable and terminations.

6.13.4) TERMINATIONS OF PVC CABLES

Cable ends shall be terminated by means of adjustable glands in accordance with the standard specification for glands, clause 3.4.1 above.

The glands shall be fitted in accordance with the cable and gland manufacturer’s instructions.

The correct size and type of gland shall be used for the particular cable and application.

6.13.5) CONNECTION OF CABLE CONDUCTOR

Suitable lugs shall be used, preferably solidly sweated to the cable conductor ends. Lugs may be crimped, using mechanical or pneumatic tools designed for this purpose, on condition that evidence is submitted that the method used complies with the performance requirements of BS 4579, Part 1: "COMPRESSION JOINTS IN COPPER".

Contact surfaces shall be thoroughly cleaned and smoothed and fixing bolts shall match the hole size of the lug.

Cables that are connected to clamp type terminals where the clamping screws are not in direct contact with the conductor need not be lugged, but the correct terminal size shall be used.

Ferrules shall be used on cable conductor ends where the cable conductors are connected directly to equipment with screws against the conductor strands.

When cutting away insulation from cable conductors to fit into lugs, care shall be taken that no strands are left exposed. Under no circumstances may any of the conductor strands be cut away to fit into lugs.

6.13.6) JOINTS

Verification or authorized in writing by the Engineer.

Jointing shall be carried out strictly in accordance with the manufacturer's instructions and by personnel competent in jointing the types of cables used.

During outdoor jointing operations, the joint bays shall be adequately covered by tents of waterproof material suitably supported. Where necessary a trench shall be excavated around the bay to prevent the ingress of moisture. The sides of the hole shall be draped with small tarpaulin or plastic sheeting to prevent loose earth from falling in during jointing operations.

The joint shall not impair the anti-electrolysis characteristics of the cable.

The Contractor shall notify the Engineer timeously of the day on which jointing is to be carried out in order that an inspection may be arranged if so required. Any cable joint not inspected by the Engineer because of insufficient notice being given, shall be opened for inspection and redone at the discretion of the Engineer and at the cost of the Contractor.

MV cable joints on paper insulated cables shall be of the compound cast type and the compound used shall comply with the specification provided above.

MV cable joint on XLPE-insulated cables shall be of the heat-shrinkable type and shall comply with the specification above or shall be based on a prefabricated system utilising pre-moulded slip-on EPK stress cones.

LV cable joints shall be of the epoxy-resin type.

Joints shall be fully water and air tight and shall be free of voids and air-pockets.

The crossing of cores in joints will not be permitted under any circumstances.

6.13.7) CABLE GLANDS

Mechanical cable glands required for the attachment of cables complying with the requirements of SANS 150 to enclosures for electrical apparatus, including enclosures for type "e" apparatus and enclosures that are dust-ignition-proof or hose-proof or both, shall comply with the requirements of SANS 1213 and shall bear the mark.

Each gland shall bear the following information in legible and permanent marking:

- The Manufacturer's Name, Trade Name or Trademark
- The Size Designation of the Gland
- In the case of glands for use on enclosures for type "e" apparatus, or on enclosures that are dust-ignition-proof or hose-proof or both, an indication to that effect shall be provided.

For outdoor applications and for environments where the cable gland will be exposed to water, suds or oils, gases and dust, the cable gland shall be fitted with a seal and a shroud in accordance with the requirements of Clauses 4.5 and 4.6 respectively of SANS 1213.

Glands required for use on enclosures for type "e" apparatus or enclosures that are dust-ignition-proof or hose-proof or both, shall comply with the requirements of Clause 4.7 of SANS 1213.

Glands for armoured cables required for use on non-metallic enclosures shall be provided with an attachment for the purpose of applying an earthing bond to the gland and shall comply with the requirements of Clause 3.4 of SANS 1213.

Glands for armoured cables required for use in highly corrosive atmospheres and/or for use on enclosures or motor specified for a degree of protection of IP65 or better, shall be tested in accordance with the requirements of IP65/IEE144, shall carry the SANS mark and shall be type CCG EIW by CCG Systems or equal and approved.

6.13.8) CABLE JOINTING FERRULES & CABLE TERMINATING LUGS

Only ferrules and lugs which meet the requirements of the performance specification BS 4579 – Part 1 may be used, alternatively ferrules and lugs which meet the dimensional requirements of DIN 46235 may be used.

The cross-sectional area of the material of the ferrule or lug shall not, under any circumstances, be less than the cross-sectional area of the conductor to be jointed or terminated.

The size of ferrules and lugs must match exactly the size of the conductor to be jointed or terminated. The use of oversized lugs or the removal of strands of the conductor is not acceptable.

The use of cable lugs with oversized bolt holes or the connection to busbars with undersized bolts is not acceptable.

The crimping of ferrules and lugs shall be carried out by means of the circumferential single hexagonal or, preferably, double hexagonal crimp. Indentation crimping is not acceptable.

Copper cable ferrules and lugs shall be manufactured by a cold forming process, shall be completely free of seams or joints and shall be manufactured by Metmak, BICC-Burndy or equal and approved.

6.13.9) IDENTIFICATION OF CABLES

Cables shall be identified at all terminations by means of punched metallic bands or marked with labels or tags.

The use of PVC tape with punched characters is not acceptable.

The identification numbers of cables shall be shown on "as built" drawings of the installation and shall correspond with the Cable Schedule.

6.14) EARTHING

Provide all required labour, materials and specialized Contractor services necessary for a completely safe installation of an Earthing System in full conformity with requirements of the Wiring Code and authorities having jurisdiction. Include in general the following:

- Main Earth Electrode System
- 230/400 Volt Service & Equipment Earthing
- Miscellaneous Earthing

All earthing shall also be carried out in accordance with BS CP 1013/1965, except where this varies from the Wiring Code.

All earth connections shall be lugged.

6.14.1) SUPPLY EARTHING

An appropriately sized copper earth conductor in accordance with the requirements of SANS 10142 will accompany all power cables.

6.14.2) SAFETY EARTHING

All cabinets (including doors) and equipment bodies shall be earthed and equipotentially bonded in accordance with SANS 10142.

6.14.3) EARTH LEAKAGE UNITS

All circuits serving switched socket outlets shall be routed via an earth leakage unit. Any other circuit, as required by the Engineer will be routed via an earth leakage unit.

6.14.4) MATERIALS

Earth conductors shall generally be stranded copper with green PVC insulation. The conductors shall conform to SANS 150 (current edition) quality specification for "PVC-INSULATED CABLES". All earth

conductor sizes shall be determined in accordance with SANS 0142, paragraph 4.6 where the earth does not form an integral part of the cable.

Earth conductors for substations, cable trays and rising mains shall generally be copper bar or solid drawn copper rod (annealed). Conductor sizes, where not specified, shall be no less than the size determined in accordance with SANS 10142.

6.14.5) SUB-DISTRIBUTION BOARDS & SUB-CIRCUITS

A separate earth connection shall be supplied between the earth busbar in each sub-distribution board and the earth busbar in the Main Switchboard.

The connections shall consist of bare or insulated stranded copper conductors installed along the same routes as the supply cables or in the same conduit as the supply conductors. Alternatively armoured cables with earth continuity conductors included in the armouring may be utilized where specified or approved.

The earth conductors of all sub-circuits shall be connected to the earth busbar in the supply board in accordance with SANS 10142.

6.14.6) RING MAINS

Common earth conductors may be used where various circuits are installed in the same wiring channel in accordance with SANS 10142. In such instances the sizes of earth conductors shall be specifically sized and approved by the Engineer.

Earth conductors for individual circuits branching from the ring main shall be connected to the common earth conductor with T-ferrules or soldered. **The common earth shall not be broken.**

6.14.7) CONNECTIONS

Under no circumstances shall any connection points, bolts, screws, etc., used for earthing be utilized for any other purpose.

It will be the responsibility of the Contractor to supply and fit earth terminals or clamps on equipment and materials that must be earthed where these are not provided. Unless earth conductors are connected to terminals, the ends shall be tinned and lugged.

6.14.8) NON-METALLIC & FLEXIBLE CONDUITS

Stranded copper earth conductors shall be installed in all non-metallic conduits and fixed securely to all metal appliances and equipment, including switch boxes, socket-outlet boxes, draw-boxes, switchboards, luminaires, etc. The securing of earth conductors by means of self-threading screws will not be permitted.

An earth conductor shall be installed in all non-metallic flexible conduit. This earth conductor shall not be installed externally to the flexible conduit but within the conduit with the other conductors. The earth conductor shall be connected to the earth terminals at both ends of the circuit.

6.14.9) WATER PIPES

Metal cold water mains shall be bonded by solid 12mm x 1,6mm copper strapping to the earth busbar in the Main Switchboard.

All other hot and cold water pipes shall be connected with 12mm x 1,0mm perforated or solid copper strapping (not conductors to the nearest switchboard.

The strapping shall be fixed to the pipework with brass nuts and bolts and against walls with brass screws at 150mm centres.

In all cases where metal water pipes, down pipes, flues, etc., are positioned within 1,600mm of switchboards an earth connection consisting of copper strapping shall be installed between the pipework and the board.

In vertical building ducts accommodating both metal water pipes and electrical cables, all the pipes shall be earthed at each distribution board.

6.14.10)ROOFS

Where service connections consist of overhead conductors, all metal parts of roofs, gutters and down pipes shall be earthed.

One bare 10mm² copper conductor shall be installed over the full length of the ceiling void, fixed to the top purlin and connected to the main earth conductor of each switchboard.

The roof and gutters shall be connected at 15m intervals to this conductor by means of 12mm x 1,0mm copper strapping (not conductors) and galvanized bolts and nuts. Self-tapping screws are not acceptable.

Where service connections consist of underground supplies, the above requirements are not applicable.

6.14.11)PUSH BUTTON & ISOLATOR STATIONS

All isolator/push button stations shall be provided with an earth terminal. This shall be connected to the body of metal enclosures.

All fibreglass enclosures shall be similarly supplied with earth terminals. All exposed metal portions of equipment (push button shrouds, etc.) shall be connected to this terminal.

6.14.12)TRUNKING & TRAYS

All metal trunking and cable trays are to be earthed.

6.14.13)EARTHING & BONDING WIRE

The medium voltage switchboard, transformer earthing terminal and cable supports must be bonded to the main earth bar by means of 70mm² earth conductors.

The neutral busbar and earth bar in the main LV switchboard shall be bonded to the main earth bar with an earth conductor (or conductors in parallel) having a cross-sectional area of not less than half the size of the LV phase conductor (or conductors in parallel) between the transformer and the main LV switchboard.

In addition, a 70mm² copper earth conductor must be laid in the cable trenches along with all incoming and outgoing medium voltage cables for a distance of 40m (or as specified) and the conductors must be connected to the main earth bar.

6.14.14)EARTH RESISTANCE MEASUREMENTS

Test the resistance to earth of each distribution board earth bar.

Carry out 'spot' tests on at least 5% of all sub-circuits to determine the impedance to earth of the sub-circuits' earth connection.

All test results are to be fully documented and forwarded to the Engineer in written form.

The Contractor must carry out earth resistance measurements on completion of the installation of the earthing electrode and the results must be submitted to the Engineer for approval.

Should the earth resistance be too high, the Contractor may be requested to install additional earth rods or trench earths, for which a variation order will be issued.

6.14.15)LIGHTNING & SURGE PROTECTION – ELECTRONIC/COMMUNICATIONS SYSTEMS

The Contractor shall supply and install all the necessary lightning protectors, arrestors and other equipment to provide protection for both the equipment and people utilising this equipment. This equipment shall form part of the Works unless otherwise specified.

The guidelines laid out in the CSIR special report No. ELEK 165 - "A Lightning Protection Guide for Electronic Installations" shall be followed to protect all electronic and other equipment prone to suffer lightning surge damage.

All input and output circuits shall be equipped with surge protection so as to ensure that surges transmitted along the control cables do not affect the equipment.

All CCTV coaxial cables shall be provided with in-line surge suppressors.

All data communications cables which run between different buildings shall be protected at both ends by suitable lightning protection terminals.

The Contractor shall guarantee the entire installation against any damage that may be caused by lightning and static discharges and all necessary steps shall be taken to safeguard the equipment and the installation.

All mains lightning arrestors shall comply with the requirements of SANS 171 and shall bear the SANS mark.

The protection unit shall consist in essentials of a four terminal plus earth assembly containing coarse and fine protection. The fine protection shall consist of in-line impedances shunted by a silicon clamping device such as a transorb diode on the output terminals; coarse protection shall consist of two spark gaps in series across the incoming terminals with the centre point taken to earth (alternatively a 3 terminal spark gap is acceptable). In either case the signal lines shall remain decoupled from earth under normal conditions.

The unit shall be selected to have a voltage rating as close to, but above the normal line voltage and to safely carry the maximum expected line current. The internal impedances shall be rated to withstand a continuous short circuit on the output terminals without overheating or change in characteristics.

The nominal discharge surge current shall be not less than 10kA on an 8/20 impulse. The unit shall be capable of sustaining ten successive pulses of this value, at one minute intervals, without suffering a change of characteristic.

The protection level shall be such that the output voltage between terminals will not rise to more than 1,5 times the rated voltage within 1nS on the application of an input surge voltage of 10kV, 1,2/50 waveform or on a current surge of 5kA on a 8/20 wave, conductor to earth voltage shall not rise to more than 1,1kV under similar conditions.

The unit shall consist of a base which can be attached to a DIN rail and fitted with incoming, outgoing and earth terminals and into which the protection device is plugged. The plug-in assembly shall contain all the dynamic devices. It shall be possible to remove this part for remote testing without impairing the current loop in any way. The input terminals for the field cables shall be arranged to be at the bottom of the unit. The earth connection shall be as direct as possible and not less than 4mm² in cross section.

6.15) CABLE FASTENING

All cables shall be individually strapped onto trays with PVC cable ties or stainless steel cable ties where mounted externally. Cables shall be strapped at appropriate intervals to ensure that they are straight and sag free.

The correct spacing shall be maintained.

Kinking of cables is to be avoided.

6.16) GENERAL POSITION OF SWITCHES

Sockets with their controlling switches shall be mounted with the centre line 300mm above finished floor level, unless otherwise specified or if mounted in approved trunking.

Switches for lights are to be mounted with the centre line 1.4m above the floor, except where otherwise specified or indicated on a drawing.

Where walls are tiled halfway switches and sockets must be installed 40mm above the tiles.

Unless otherwise approved, the switches controlling lights and installed adjacent to doors are to be placed at the lock side of the door at a distance of 200mm from the door jam to the centre line of the box, in each case. If the lock side of a door is not shown on a drawing, it must be ascertained before the switch is positioned.

6.16.1) LIGHT SWITCHES

Light switches generally shall be of the Crabtree type rated at not less than 16Amps and shall conform to SANS 163 of 1951 as amended. The switches shall have an Ivory type non-conductive cover plate in wet areas.

Where weatherproof light switches are called for, they shall be of the totally enclosed Rotary type. All light switches shall be mounted at a height of 16,5 brick layer's centre (1.4m).

6.16.2) SWITCHED SOCKETS

Switched socket outlets generally shall be 16Amp 3-pin and of the Crabtree make. Surface outlets shall be installed into YORK fiberglass boxes with a sliding cover. Mounting heights for socket outlets shall be 300mm from floor level, unless specified or in power trunking.

6.17) CONNECTION OF LIGHTING FITTINGS & APPLIANCES

All high bay and fluorescent fittings will be supplied with a 3m flexible cord and 5Amp plug.

6.17.1) LIGHT FITTINGS

Information as to type and position of light fittings will be given in finishing schedules or specified elsewhere in the RFQ.

Where it is necessary to supply lights from a ceiling mounted trunking, they will in general be supplied from a 5A unswitched socket outlet and a plug.

Unless otherwise specified, all outside lighting will be switched via a daylight switch-contactor combination.

6.17.2) LAMPS

The sizes and types of lamps are specified in the SCHEDULE OF LUMINAIRES.

Where the Contractor is required to supply a luminaire, he will supply the appropriate lamp with it.

6.17.3) ISOLATORS

Isolators in general shall be of the double pole type. Crabtree or similar and equal and approved will be accepted.

6.17.4) LIGHTING LEVELS

The design of the lighting layout shall be such to conform to SANS 10114 & the OHS Act with respect to the lux requirements.

6.18) CONNECTION OF DOMESTIC TYPE STOVES

The connection of each stove, except where otherwise specified, shall consist of 2x10mm² conductors and a 6mm² bare copper earth wire in 25mm conduit. A 60Amp double pole micro-gap isolator shall be flush mounted in a wall outlet box behind the stove in the run or the tubing, above or in the tile work, if any, but not less than 1.2mm above finished floor level. A 25mm conduit from the isolator shall terminate 300mm above the floor in such a position that it will be behind the stove. Wiring from the conduit to the stove shall be housed in a flexible conduit of the same diameter as the conduit used. The flexible conduit may be connected to the conduit by means of an extension ring and cover, a coupling or by means of a dome lid, with m.i. box.

6.19) CONNECTION OF GEYSERS

Each geyser shall be protected on the distribution board by means of a double pole circuit breaker. In addition, a recessed or surface-mounted 2 pole 30Amp isolator must be positioned adjacent to the geyser. Where the Wiring Code or regulations of the Local Supply Authority prohibit the installation of an isolator, the protection on the distribution board shall be a circuit breaker and neutral isolator combination.

The conduit connection is to terminate directly on the geyser in such a manner that it can be uncoupled from below. A flush round draw-box shall be provided close to the geyser. Flexible conduit may only be used where specifically approved.

The Electrical Contractor must ensure that all geysers are installed to allow for easy removal of elements and thermostats. The geyser outlet steelwork or mounting lug must be earthed, in addition to any earthing terminal in the geyser connection box. The use of copper tubing as an earth path is not acceptable.

6.20) INSTALLATION OF DISTRIBUTION BOARDS

All distribution boards shall be installed with the top edge 2m above finished floor level, unless otherwise specified. The Electrical Contractor is to supervise the actual building-in of trays to ensure a neat installation and shall, after placing in position of any tray, provide wooden struts inside the tray to prevent any deformation of tray sides during building operations. All boards shall be accurately level in all planes.

All distribution boards shall be cream coloured. Where there is a requirement for emergency and UPS supplies, the following will apply:

- The distribution board shall have compartments for mains, emergency and UPS sections and they shall be electrically and mechanically separate.

- The arrangement for the boards shall be from left to right, main section, emergency section and the UPS section. Each section shall be provided with its individual doors. All equipment, including the main switch shall be behind hinged doors. Each door shall be clearly labeled.

The final colour of the boards shall be as follows:

- Distribution Board Outside: Orange
- Main Section: Orange (Normal)
- Emergency Section: Red
- UPS: Blue/Purple (As per Single Line Diagram)

A legible label will be fixed on the distribution board door stating the distribution board name, where it is supplied from and the size of the supply cable.

All other warning labels shall be affixed in the appropriate fashion.

6.21) BUILDING DAMAGES

On completion of the contract, any damage to plastering, floors, ceilings, wood and paintwork, etc. during and because of the electrical installation shall be made good to original finishes by the Electrical Contractor.

6.22) UNINTERRUPTIBLE POWER SUPPLY (UPS)

All UPS equipment to be installed by the Contractor will in general be free issued to him.

Switched socket outlets serving UPS powered equipment shall consist of a 16Amp plug with a flat earth pin.

The 16Amp socket outlet units shall be supplied complete with a plug top. The plug top and the socket outlet shall be red in colour. Each circuit shall be protected as per specification.

6.23) TELEPHONE INSTALLATION

Conduits from the telephone DB to various telephone points shall be 25mm and shall be complete with draw wires. Every telephone point must have a separate conduit from the distribution board. Looping is not permitted.

Unless mounted in trunking, all telephone points shall terminate in a 100x50x50mm flush conduit box.

All telephone connection boards shall be 600x600x150mm. The telephone connection boards shall be complete with architrave and door with two flush fitting twist locks. A full size 20mm thick hardwood mounting board shall be provided in each board.

The boards shall be fitted with a label with 10mm white engraved letters on black background “TELEPHONE BOARD” with two screws.

The colour of the telephone connection board is to be white.

6.24) COMPUTER (DATA) INSTALLATION

Data cabling will be installed in dedicated conduits and trunking enclosures. All computer connection boards shall be 600x600x150mm. The computer connection boards shall be complete with architrave and door with two flush fitting twist locks. A full size 20mm thick hardwood mounting board shall be provided in each board.

The boards shall be fitted with a label with 10mm white engraved letters on black background "COMPUTER BOARD" with now screws.

The colour of the telephone connection board is to be grey unless otherwise specified in the project drawings.

6.25) SUPPORTING BRACKETING & FIXING

The drilling of holes in structural steelwork is not permitted except with prior written approval of the Engineer.

The drilling of holes in vessels or process pipe work is prohibited. Welding on any vessel of process pipe is prohibited, however clamping on process pipe work can be accepted if its design is approved by the Engineer.

6.26) EQUIPMENT ISOLATORS

All machinery, control panels and motor circuits are to have a lockable MAIN SWITCH, which shall be able to be switched off and locked out in the off position.

6.27) PREFERRED EQUIPMENT LIST

The trademarked equipment is to be used when tendering for installation work. Any deviation must be approved by the Engineer or his representative.

7. INSPECTION & TESTING

7.1) GENERAL REQUIREMENTS

Complete functional and operational tests shall be carried out on all of the Contractor's work as may be described by the Engineer at that time. The Engineer or his representative reserves the right to be present at these tests. Such inspections shall not relieve the Contractor of his responsibility for meeting all requirements of the inspection and it shall not prevent subsequent rejection if such material or equipment is later found to be defective.

To ensure that wiring may be easily withdrawn from any circuit run, the Engineer may, at his own discretion, direct that wires be withdrawn by the Contractor. If these wires are withdrawn easily without showing damage, the costs of withdrawal and replacement will be borne by the employer, otherwise the Contractor will rectify this at own expense.

The Electrical Contractor shall furnish a test report detailing particulars of at least the following tests executed:

a) High voltage test of 2,000V, 50Hz, AC for one minute between phase and earth in turn with the remaining phases earthed.

b) A 1,000V megger test on all insulated sections, from phase-to-phase and phase-to-earth. Resistance readings shall exceed 1,000 megohms.

c) Full operational tests of all equipment according to drawings on circuits.

d) A trip test on all earth leakage units by creating an earth fault to appropriate magnitude.

e) A current injection trip test on all main breakers to ensure that they trip at their set current.

f) Earth loop resistance tests on all earthed equipment.

g) Checking of all polarity on all switched outlets.

h) Such other tests as may be laid down in the “Detailed Requirements” or “Schedules”

i) A Certificate of Compliance (COC) according to the Act shall be issued for the complete installation.

7.2) TESTING OF MEDIUM VOLTAGE CABLES AFTER INSTALLATION

7.2.1) PROCEDURAL

Within fourteen days of the completion of a cable installation and jointing the Contractor shall arrange for a pressure test on all new and re-routed MV cables and shall provide all necessary test equipment and instruments. Pressure tests are to be carried out before and after connections to switchgear are made.

The Contractor shall establish the requirements of the Supply Authority as regards both testing and witnessing of tests before commencement of tests.

All tests are to be carried out in the presence of the Engineer and the Contractor shall record all results and confirm in writing.

All tests shall be reported on in an agreed format and individual megger readings are to be presented for each cable tested.

7.2.2) TEST VOLTAGES – PILC CABLES

After installation of MV PILC cables, test each length of cable for continuity and insulation in accordance with the following table:

Cable Rating (kV)	TEST VOLTAGE (Applied for 15 minutes) (kV)			
	Paper-Insulated cables			
	Between Conductors		Conductors to sheath	
	AC (r.m.s.)	DC	AC (r.m.s.)	DC
6,6	12	18	12	18
11	20	30	20	30

7.2.3) TEST VOLTAGES – XLPE CABLES

The values, magnitudes and testing procedures for XLPE insulated cables differ significantly from those accepted for PILC cables. If the latter methods are used significant initial or latent damage will occur.

The leakage resistance of each core shall be accurately measured and recorded using a Megger type DC instrument generating a voltage of not less than 500 and not exceeding 5000 volts. The values shall be

not less than (2U + 2) MΩ/km e.g. for 1km cable operating at 11kV the minimum acceptable insulation resistance is 24MΩ.

The integrity of the sheath shall be verified by the application of 5kV DC for 1 minute between earth and the inner metallic sheath. A current of 1mA/km is acceptable.

An overvoltage test shall be applied to the cores prior to energisation, as switching a circuit breaker onto a fault could be hazardous to the operator as well as causing severe damage to the equipment.

The overvoltage shall be produced by either:

A since wave voltage in the range 25-100Hz

A sine wave or square wave voltage at 0.1Hz approximately

and applied for 60 minutes at the magnitudes shown below in kV between the three conductors connected together and the screens and armouring tied together to earth.

	Cable operating voltage kV			
Applied Test Voltage kV	6.6	11	22	33
Power Frequency	8	13	25	38
Very Low Frequency	11	19	38	57

The cable shall be discharged through a resistance of 200kΩ and then earthed for 5 minutes.

In the event that the capacity of the mains frequency test set is adequate or a VLF set is unavailable a DC test is permissible under the following conditions:

The duration of the test shall not exceed 10 minutes.

The cable shall be discharged through a resistor of 200kΩ and then solidly earthed for 24 hours.

Discharging the cable by applying a short circuit can cause severe damage.

	Cable operating voltage kV			
Applied Test Voltage kV	6.6	11	22	33
DC Voltage kV	6	10	20	30

Prior to energisation the leakage resistance shall be measured as in 2.1. Any significant reduction shall be reported to the engineer.

The terminal load (e.g. transformer) must be connected and switched in prior to closing the source circuit breaker as the energisation of an unterminated line can cause voltage doubling to occur at that position.

8. SHIPPING

The assembly shall be suitably crated and packed for the transport system to be used. If the transport of the assembly to site is included in the contract it shall be the responsibility of the Contractor to ensure

that the crating and packaging is suitable. If transport is excluded from the contact, the crating and packaging shall be done in accordance with the instructions of the transporter. The proposed crating and packaging system shall be approved by the Engineer, but this approval shall not relieve the Contractor of any of his responsibilities. The costs of preparation for shipping will be included in the vendor's price.

The vendor is responsible to ensure that no damage will be sustained while shipping and he will prepare the appropriate packaging to ensure this.

The datasheet shall indicate whether the vendor is to deliver the equipment to site and whether the vendor is to offload the equipment on site or if the delivery and offloading on site shall be carried out by a third party.

Where delivery and/or offloading by the vendor is specified on the datasheet, the costs thereof shall be included in the vendor's price.

9. INSTALLATION

The datasheet shall indicate whether the vendor is to install the equipment in its final position on site or if the installation shall be carried out by a third party.

Where installation by the vendor is specified on the datasheet, the costs thereof shall be included in the vendor's price.

The Contractor shall provide and carry out everything necessary to complete the whole installation and put it into service. Full details and drawings of the equipment are to be obtained by the Contractor. Where necessary in the opinion of the Engineer the Manufacturer or Suppliers of the equipment are to provide engineering assistance at the Contractors expense to enable any difficulties experienced with the equipment during erection, connecting, testing, putting into service or operating, to be overcome to the satisfaction of the Engineer. The Contractor shall advise the suppliers the time and extent of the engineering assistance required.

Before erection commences, the equipment shall be inspected by the Contractor and properly cleaned to remove the protective coverings and coatings supplied before dispatch from the Manufacturer's works. Examine all components for visible signs of damage and report all damage in writing to the suppliers with a copy to the Engineer.

The Contractor shall carry out the erection, including cutting holes for holding-down bolts, positioning and grouting holding down bolts in accordance with jigs or drawings supplied observing all erection instructions and precautions for erection that may be issued by the Manufacturer or supplier of the equipment.

The Contractor is to make sure that complete switchboards have been properly aligned vertically and horizontally and that all bolts and connections between panels and/or busbar joints and other mating parts have been properly assembled. All bolts and other fastenings are to be tightened and the Contractor is to ensure that all cubicles will receive the switchgear units correctly and that there is no distortion which will result in poor appearances and difficulties in operating the equipment.

The paintwork is to be touched up with matching paints supplied by the Manufacturers.

All wedges and packings installed at Manufacturer's works to prevent damage to moving or delicate components during transport are to be removed.

Check from the Manufacturer's drawings that all instruments and components are correctly connected.

Busbar covers are to be removed and all connections and tap-offs are to be checked and all loose connections tightened. Check support insulation for defects or damage and replace faulty insulators. Remove any dirt, tools and loose materials from the busbar chamber before replacing covers.

10. COMMISSIONING

The datasheet shall indicate whether the vendor is to allow for a site technician to be present when the equipment is commissioned and energized. In such a case the vendor's site technician will:

- Conduct the site tests as described in Section 4 above.
- Conduct voltage tests on the equipment, after the equipment is energized and adjust the tap changer so that the equipment delivers the required output voltage.

11. DRAWINGS & DOCUMENTATION

Prior to work commencing, the tenderer shall receive a copy of drawings the Engineer deems relevant for tendering. The successful tenderer shall receive all relevant drawings before work commences and in the event of updates on drawings, the Contractor shall receive such copies for construction. In the case of design/drawings required from the Contractor, all working drawings will be submitted to the Engineer for his approval before commencement of work.

The Contractor shall in any case provide the Engineer with all "as built" change notes as gathered/identified during installation and commissioning on mechanical and electrical work (including wiring diagrams) as a pre-requisite to final payment. "As built" drawings shall be maintained on a current basis as work in progress.

The Contractor shall be responsible for providing all the necessary drawings for approval by the Engineer. Unless otherwise specified all drawings shall be done to the IEC drawing standards using IEC symbols.

The Engineer may provide reference drawings, as listed in the data sheet for information to the Contractor. These could include amongst others, single line diagrams, actual or typical schematic diagrams, control system drawings or schedules etc.

The Engineer may require a single schematic diagram for each functional unit type or require separate schematic diagrams for each functional unit and this preference shall be expressed in the data sheet.

General arrangement (GA) drawings shall indicate the physical size of the assembly, the space required around the assembly for operation, transport unit sizes, positions of the functional units and the foundation arrangement. It shall also detail the overall mass of the assembly as well as the mass per transport unit.

Typical schematic drawings are preliminary drawings generally done per functional unit type and issued for information, comment and or preliminary approval. They shall in all cases be developed into detailed drawings for construction.

The Contractor shall provide one set of the manuals for all components contained in the assembly (preferable in electronic format on a CD).

12. QUALITY ASSURANCE

12.1) CERTIFICATION

The vendor shall supply a comprehensive QA/QC Plan in accordance with ISO 9001:2008, as part of his bid or prior to manufacture, as indicated on the data sheet.

All equipment manufacturers shall have valid SANS 9000 certification.

12.2) QUALITY PLAN

The Contractor on receipt of a contract for the manufacture of switchgear and controlgear assemblies shall compile and submit a quality plan which shall be approved by the Engineer prior to commencement of manufacture.

The quality plan shall list all major operations, specifications, verifications, tests, methods of test and equipment to be used and acceptance/rejection criteria.

The quality plan shall list all major operations, specifications, verifications, tests, methods of test and equipment to be used and acceptance/rejection criteria.

12.3) ACCESS

The Engineer's representative shall have access at all reasonable times to those parts of the manufacturing facilities engaged in the manufacture of articles to this specification. The representative is authorised to witness any stage of the manufacture and testing and inspect documentation. The representative is authorised to reject any items not complying with the requirements of this specification. In the event of a dispute arising regarding interpretation of test results the decision of the Engineer shall be final.

13. GUARANTEE

All equipment and materials shall be guaranteed against defect for a period as indicated in the Consol tender documents.

C5.4-MECHANICAL SPECIFICATION

DETAILED TECHNICAL SPECIFICATION

FOR THE PROPOSED

HEATING, VENTILATION AND AIR CONDITIONING (HVAC) INSTALLATIONS

FOR

THE GREATER TZANEEN MUNICIPAL OFFICES

TABLE OF CONTENTS

1. GENERAL SPECIFICATION

1.1 GENERAL TECHNICAL SPECIFICATION DOCUMENTS

The General Technical Specifications, which form part of these Tender Documents, are presented in a separate document.

The submission of a tender will confirm that the HVAC sub-Contractor **(To be referred to as 'sub-Contractor')** has read the abovementioned document.

1.2 PROJECT SPECIFIC GENERAL SPECIFICATION

1.2.1 SCOPE OF WORK

1.2.1.1 Scope of work covered under this tender shall be for the supply of the necessary equipment, transport, installation, rigging, erection, testing & commissioning and handing over to the client in an operating condition of the systems as described hereunder. The actual extent of work vis-à-vis the distribution system shall be as indicated in the Tender drawings, bill of quantities and this detailed technical specification.

1.2.1.2 Minor Builder's Work has been included in this contract as enabling works for the installations. All other work, as later herein specified as being specifically excluded from this contract, shall be carried out by others in accordance with the details provided by The Engineer or the sub-Contractor as applicable and as provided herein.

1.2.2 DRAWINGS

1.2.2.1 Document Transmittal

The **Dropbox** Document Transmittal platform is a formal process used by this Project to transmit documents to other Project Engineers and Sub-contractors. The Engineer shall officially issue Construction Drawings, Site instruction, Technical specifications, Payment certificates and Drawing Registers through this online portal. Since this platform is a contractual document transmittal platform, the upload of an email notification to the recipient shall serve as receipt of the documents described in the drawing transmittal notification.

Other forms of transmittals may be used and shall be approved by the Project Managers. These forms may be file transfer platforms such as Skydrive, Accellion, e-mail, CD delivery/collection, etc.

1.2.2.2 Tender Drawings

The following drawings have been issued with this Tender, kindly refer to Annexure 3 (Tender Drawing Register)

1.2.2.3 Architectural and Structural Drawings

The sub-Contractor shall ensure that he is in possession of all information required for the installation of the Works and shall, if necessary, obtain copies of all relevant Architectural and Structural Drawings from the Architect and Structural Engineer.

1.2.2.4 Builder's Work Drawings

All Builder's Work and work to be carried out by others in accordance with the Specification has been indicated on the Tender Drawings. The sub-Contractor shall check, approve, add to or alter such drawings as may be necessary to suit the Plant offered by him, and accepted by The Engineer, within the time stipulated in Clause 1.2.2.6 hereof from date of acceptance of his Tender and shall submit to The Engineer in duplicate any revision which shall be made to such Drawings.

Such Builder's Work Drawings shall indicate the location and extent of all foundations, bases, openings, timber frames and all other Builder's Work and the capacities and/or dimensions of all electrical and condensate water drain points and dimensions for all water drainage connections and any other work to be provided by others for the Works, as detailed in this Specification.

The Drawings shall be drawn to scale and in sufficient detail to enable the Builder to execute the work without any misunderstanding.
Within a reasonable period after receiving such Drawings, The Engineer shall signify his approval, or otherwise, and one signed copy of the approved Drawing shall be returned to the sub-Contractor.

When approved, the following number of copies of each such Drawing shall be delivered to each of the following:

Quantity Surveyor	1 copy
Principal Contractor/ Project Manager	2 copies
Architect	1 copy
Structural Engineer	1 copy
Electrical Engineer	1 copy

1.2.2.5 Shop Drawings

The sub-Contractor shall submit to The Engineer, for approval within the stipulated time, duplicate copies of all Shop Drawings as required for the manufacture and installation of the Works or as The Engineer may reasonably require.

All Shop Drawings for work outside of plantrooms shall be drawn to a scale of not smaller than one in twenty-five. All details shall be drawn to a scale to show the detail required.

Within a reasonable period after receiving such Drawings, The Engineer shall signify his approval, or otherwise, in writing and one signed copy of each approved Drawing shall be returned to the sub-Contractor.

The sub-Contractor shall not, unless otherwise directed by The Engineer, in writing, commence with any work prior to the approval of the relative Shop Drawings. Work installed prior to the approval of Shop Drawings shall be liable to rejection by The Engineer and removal and/or replacement by the sub-Contractor, at his cost, if it is considered by The Engineer to deviate from the Specification.

Drawings approved as above described shall not be departed from except as authorized by The Engineer. The approval shall be limited to check conformity with the design requirements and shall not relieve the Tenderer of responsibility for Co-ordination or Installation fit.

The Engineer shall have the right at all reasonable times, to inspect at the factory of the sub-Contractor, all Drawings of any portion of the Works.

1.2.2.6 Mistakes in Drawings

Any expense resulting from an error or omission in or from delay in delivery of the drawings, shall be borne by the sub-Contractor.

The sub-Contractor shall be responsible for any discrepancies, errors, or omissions in the Drawings and other particulars supplied by him, whether such Drawings and particulars have been approved by The Engineer or not, provided that such discrepancies, errors, or omissions are not due to inaccurate information or particulars furnished in writing to the sub-Contractor by The Engineer or the Architect. The Employer shall be responsible for Drawings and information supplied in writing by The Engineer or the Architect and for the details of special work by either of them.

1.2.3 TRADE NAMES AND ALTERNATIVES

1.2.3.1 No trade names are mentioned in these documents. Contractors are required to propose equipment supplied by reputable manufacturers. The equipment supplied remains the responsibility of the contractor until warranties/ guaranties are met in full (by the contractor and his preferred equipment supplier).

1.2.3.2 **The tenderer is advised to offer the installation strictly in accordance with this Technical Specifications.** Equipment offered shall be taken to fulfill the requirements of the Tender drawings, BoQ, General Technical Specification and this Detailed Technical Specification.

1.2.3.3 All equipment or material which the sub-Contractor represents, to be of the required quality and characteristics for the purpose intended, shall be permitted subject to all of the following requirements.

i) It is not the intent of these Specifications to have the sub-Contractor seek acceptance from The Engineer for the various interchangeable items of different manufacturers that are offered by the sub-Contractor. It is the intent of these Specifications that alternative materials for major items of equipment, herein specified, be acceptable to The Engineer.
ii) The burden of proof as to the quality and suitability of proposed equipment shall be upon the sub-Contractor and the sub-Contractor shall furnish all information necessary as required by The Engineer at no additional cost to the Employer.
iii) There shall be no substitution for any accepted equipment, materials, component, design, or fabrication unless and until the proposed substitute has received written acceptance of The Engineer. The Engineer may require the removal of any substitute or unaccepted item which is installed by the sub-Contractor without the written acceptance of The Engineer. All financial benefits accruing from the substitute equipment, materials, components, design, or fabrication shall be for the sub-Contractor's cost.
iv) Where use of the sub-Contractor's proposed materials or equipment involves redesign of or changes to other parts of the work, the cost and the time required to affect such redesign or changes shall be considered in evaluating the suitability of the proposed materials or equipment. No additional cost will be paid by the Employer as a result of the sub-Contractor's proposed materials or equipment.
v) No test or action relating to the acceptance of substitute materials shall be made until the request for substitutions is made in writing by the sub-Contractor, accompanied by the complete data as to the equality of the materials proposed. Such request shall be in ample time to permit approval without delaying the work.
vi) Whenever classifications, rating, or other certification by a body, such as UL, NEMA, or SABS, is part of the Specification for any material, Proposals for use of alternative materials shall be accompanied by reports from the listed or equivalent independent testing laboratory indicating compliance with Specification requirements.
vii) The sub-Contractor shall reasonably demonstrate that an adequate supply of materials, repair parts, and specialties of its own design and manufacture, as well as materials, repair parts, and the specialty parts of the Suppliers, will be available promptly as the need by The Engineer may arise.
viii) The cost of all testing required to prove the quality of the material proposed shall be borne by the sub-Contractor.

1.2.3.4 It shall be understood that specifying materials, components, and/or equipment in this Specification shall not relieve the sub-Contractor from its responsibility to produce the product in accordance with the Contractual requirements.

1.2.3.5 The sub-Contractor shall submit data showing that the proposed materials or equipment meets the requirements stipulated in the Specifications.

2. DETAILED TECHNICAL SPECIFICATION

2.1 PROFESSIONAL REQUIREMENTS

To ensure acceptable standards of delivery all tenders must comply with the following criteria:-

1. The bidder must be registered with the Contractor's Industry Development Board (CIDB) in the Mechanical Engineering (ME) category
2. Proof of registration with professional body / bodies e.g.:
    a. Electrical Contractors Board (ECB),
    b. SARACCA (South African Refrigeration and Air-conditioning Contractors Association,

if a prospective bidder is compliant to specific ISO standards, proof of such certification needs to be provided, e.g. Management System Standards (ISO 9001, ISO 14001), Occupational Health And Safety Management Standard (ISO 18001 / OHSAS 18001), etc. (this is however a non-mandatory requirement). Further membership of any other technical governing bodies or applicable institutes may be provided.

2.2 SCOPE OF WORKS

2.2.1 HVAC Installations:

The proposed HVAC work shall be neatening, relocation, reconnection of refrigerant piping and recharging with refrigerant of the existing air-conditioning units condensers. This work shall only be limited to the Second Floor only.

Ventilation shall be provided to the following areas:

- Second Floor Offices fresh air systems

The sub-Contractor shall ensure that he is conversant with the layouts of the building and of other services before he commences with any work on these buildings.

Any challenges that the sub-Contractor may experience during the contract period must be timeously discussed with The Engineer.

All the work shall be carried out in full conformance with these project specifications.

2.3 DESIGN APPROACH: HEATING VENTILATION AND AIR-CONDITIONING (HVAC)

2.3.1 Ventilated Areas

Offices
Filtered fresh air shall be introduced to the offices at a rate of 7.5 l/s/person.

Kitchenettes
Extraction for the kitchenettes shall be at 6 air changes per hour. No heating or cooling shall be allowed for.

Ablutions
Extraction for the toilets shall be at 20 air changes per hour. No heating or cooling shall be allowed for.

Storerooms
Extraction for the storage areas 6 air changes per hour. No heating or cooling shall be allowed for. The areas will be at ambient temperature.

Ventilation Standards (SANS 10400-O:2011)

2.3.2 Evaporator Cooling and Heating Coils:

a) Cooling duty return air (Air 'Onto' Evaporator) selection point is stated to be 24°C_{db} / 16°C_{wb} at 1700 meters above sea level.
b) Cooling coils shall be suitable for air to water heat transfer
c) The water coils shall be circuited for the most economic balance between heat transfer and water pressure drop.
d) Heating coils shall be of the water to air heat transfer type using hot water.
e) Coils shall be of the extended surface type, constructed of seamless copper tubes with mechanically bonded aluminum or copper fins.
f) Coils shall be designed and constructed for a test pressure of 1 600kPa or the system working pressure times 1.5, whichever is the greatest.
g) Coil face velocity shall be low enough to ensure that no condensate water is carried over in the air stream, generally not more than 2,5m/s.
h) Where moisture carry-over may be a problem proper eliminators shall be fitted downstream of the coil.
i) Coil casings shall be flanged and constructed of 1,6mm or thicker sheet steel hot dip galvanized after manufacture.
j) Chilled and hot water distributors on multi-circuit coils shall ensure uniform water distribution between circuits.
k) Evaporator coils must not have more than 12.7 Fins per inch

2.3.3 Fan Motors:

Provide motors with the following characteristics (except where note or standard with the preferred equipment manufacturer as per BoQ):

a) All motors used in the air conditioning installation shall be of the latest type and in accordance with all relevant SABS standards. All necessary overload protection must be provided.
b) Motor nameplates shall list the full load motor efficiency.
c) Evaporator fan motor shall have permanently lubricated, sealed bearings and inherent automatic-reset thermal overload protection or manual reset calibrated circuit breakers.
d) The Evaporator fan shall be direct drive type
e) Maximum discharge velocity out the evaporator centrifugal fan must be at a lower velocity than 12.5m/s

2.3.4 Power input and Direct Digital Controls:

a) The unit shall have a single power supply input and the project electrician shall provide a normal/emergency power switch over panel remotely.
b) The unit controller shall enable unit capacity steps of 0%, 50% and 100% of both cooling and heating functions.
c) The unit controller shall be available as a factory-installed option.
d) Unit shall incorporate an outdoor coil defrost system to prevent excessive frost accumulation during heating duty.
e) The controller shall actively monitor all modes of operation, as well as indoor-fan status, return-air temperature, supply-air temperature, outdoor-air temperature, voltage monitor controller (phase sequence relay) for monitoring the main incoming power supply for the unit supplied safety which gives protection on under-voltage, phase failure / imbalance and phase non-sequence.
f) The controller shall have built-in diagnostics for thermostat commands for both staged heating and cooling and indoor-fan operation.
g) The controller shall be equipped with a 5-minute time delay between modes of operation.

h) Condenser fans control must be possible with ON/OF sequencing ability from the controller to allow operation of unit under low ambient.
i) The controller must have a pre-programmed 'flush cycle' for pumping only fresh air into the spaces served without cooling or heating. This flush cycle mode shall also work in emergency power outage scenario but not in emergency fire scenarios as the unit is to shut down completely in this later case.

2.3.5 Unit Casing:

a) Unit casing shall be constructed of corrosion proofed steel, precoated oven baked with a polyester epoxy powder coated external finish to suite external South African ambient conditions.
b) Evaporator compartment interior surfaces shall be insulated with a minimum 45 mm Polyurethane foam injected panel for unit cooling capacities over 200kW and 25mm thick Polyurethane foam injected panels for unit capacities below 200kW.
c) Cabinet panels shall be easily removable for servicing.
d) Filters shall be accessible through an access panel.
e) The unit casings shall be supported on formed galvanized steel channel or structural channel supports. Maximum deflection shall not exceed 1:200. Holes shall be provided in the base rails for rigging shackles to facilitate overhead rigging.
f) Unit shall have a factory-installed internal condensate drain connection and a sloped condensate pan. The drain pan shall be from 1.2mm stainless steel and insulated on the underside to prevent condensation.
g) The Evaporator fan shall be connected with a flexible connection to the unit cabinet
h) A full-size hinged access door shall be provided for any section requiring service access. Removable casing panels shall not be allowed. Door frame shall be of rigid extruded aluminum. Adhesive-backed gasket applied to the frame shall not be allowed. Access doors shall be thermally broken and provided to the following components at a minimum: supply and return fan motors, supply and return fan inlets, filters, dampers, cooling/heating coils and any other serviceable component. Hinged access doors shall be complete with stainless steel hinges and multiple-point, single-handle compression-type latches to provide quick access and a positive air seal.
i) The unit must have a walk-in return air plenum with no slide in filters allowed.

2.3.6 Split Heat pump A/C Units (General)

N/A

2.3.7 Split Heat Recovery A/C Units (General Technical Specification)

N/A

2.3.8 Filtration

Pleated washable primary filters, of the standard panel type, with zinc passivated mild steel frames shall not be thinner than 0,6mm. The filter frames shall be installed on all outdoor air intakes and upstream of all cooling or heating systems. Filter face velocity shall be low enough to ensure that no pressure above 220Pa is experienced when filters are dirty and the clean air filter shall generally measure air velocity not more than 2.5m/s at 60Pa across every filter.

Primary Air filters shall be minimum 50mm thick high performance washable pleated panel filters. The filters shall comply to EN779:

- Fan Filter Units: Filter Class G4

The filter cartridge shall be sealed into the enclosing frame by means of a mediapack and frame. The filter media shall be a random layered, non-woven, synthetic, polyester fibre that has been saturation bonded.

Note that AS1324 requires all air filters to be labeled with a filter performance rating together with the manufacturers / distributors details. Filters shall be contained in a purpose made filter bank. Where filters are to be incorporated in a duct, the panels shall be suitable for side access. Filter face velocity

shall be low enough to ensure that no pressure above 220Pa is experienced when filters are dirty and the clean air filter shall generally measure air velocity not more than 2.5m/s at 60Pa across every filter.

If the filter bank is not readily accessible from a 1,8m high ladder, a special platform (plus means of access in the form of a permanent cat ladder) is to be constructed by the sub-Contractor to enable the regular maintenance of the filters to take place.

The sub-Contractor shall be responsible for the initial filter panels installed during commissioning and testing, and for the cleaning of these just prior to the plant hand over. All filter replacements during the guarantee period are to be included in the 12 months free maintenance costs. One full set of filters shall be installed after expiry of the 12 months free warranty period.

While the air-conditioning plant is in operation up to and possibly after the premises opening, (depending on site conditions), temporary filter media must be installed over the panel filters to protect them from excessive dust.

2.3.9 HVAC Air Distribution

a) Ductwork (General Technical Specification)
- All duct systems shall be constructed of galvanized sheet metal, or as deemed appropriate by The Engineer based on the application requirements. No fiberglass duct board shall be permitted.
- All medium- and high-pressure ductwork systems shall be pressure-tested and installed in accordance with the current SMACNA standards.
- All ductwork shall be externally insulated except where mentioned.
- Where possible, all air terminal connections shall be hard-connected with sheet metal ductwork. If flexible ductwork is used, no flexible duct extension shall be more than 1.5 meters in length.
- All HVAC equipment shall be isolated from the ductwork system with flexible duct connectors to minimize the transmittance of vibration.
- Air terminal devices such as grilles, registers, and diffusers shall be balanced at duct branch dampers and at terminal face.
- The entire air distribution system shall be balanced to supply the air quantities as required in various zones and rooms to maintain the specified room conditions. The final balancing of air quantity through each grille or diffuser shall be recorded and submitted to The Engineer for approval.
- Flexible ducting shall be externally insulated where insulation of rigid sheetmetal ductwork is called for in the Tender drawings, BoQ or Technical specification.
- The use of the ceiling void as a return air plenum shall not be permitted. Also, plastic egg crate grilles will not be accepted.
- Ducting from the Package Rooftop Units located under the coffered slab shall have clear penetrations through the coffered slab.

b) Fire Dampers (refer to clause 19 of the General Technical Specification)
- Combination fire/smoke control dampers complying with SABS 193 and NFPA 90A are required in the positions indicated on the Tender drawings.
- The dampers shall be UL (underwriters Laboratories) or SABS certified with proven low leakage in the closed position.
- Dampers shall be actuated by fusible link, electrical solenoid or pneumatic means as specified in the Supplementary Specification.
- Fire dampers shall be flanged both sides and access panels shall be provided in the ducting at each fire damper on the upstream side.
- Each fire damper shall be clearly marked as per clause 4 of SABS 193.
- Fire dampers shall have at least a 2-hour resistance rating when tested in accordance with SABS 193.
- Insulating fire dampers shall be fitted where indicated on the Tender drawings.
- The open or closed status of the damper shall be clearly indicated outside the casing for inspection purposes.
- Dampers shall be sized so that the nominal free air area when in the open position is not less than the connected duct free air area.

- Dampers shall be installed so as to form part of a continuous barrier to passage of fire when in a closed position. Where a fire damper cannot be fitted immediately adjacent to the firewall, the section of ducting between damper and wall shall be of at least the same metal thickness and fire rating as the damper casing.
- Dampers shall be self-supporting in case of duct destruction due to heat. Care shall be exercised that the frame be set so that the closing device will be accessible.
- Suitable hand openings with tightly fitted covers shall be provided to make dampers accessible for inspection and maintenance

c) Sound Attenuation (refer to clause 20 of the General Technical Specification)
Purpose made attenuators shall be used where necessary on supply, return and exhaust systems to ensure that the noise levels specified are achieved.

d) SARACCA table to be used for duct manufacturing and installation

SARACCA
REVISED LOW PRESSURE DUCT METAL THICKNESS

CLASSIFICATION : POSITIVE PRESSURE : 500PA
NEGATIVE PRESSURE : 500PA
VELOCITY : 10m/s

Category	Longest Side L/S mm	Semi Peri-meter	Minimum Thickness mm	Maximum Spacing Between Joint mm	Maximum Spacing Between Stiffener mm	Joint Type	Type of Inter-mediate Stiffener	Maximum Spacing Between Hangers mm	Hanger Rod Dia mm	Hanger Angle mm	Measured Sheet Metal Mass Kg/m5
1	Up to 750	<1150	0.6	2400	2400	S&D	Note 1	2400	6	40 x 2	4.9
2	Up to 750	>1150	0.6	2400	2400	Note 2 Slip on Flange	Note 1	2400	6	40 x 2	4.9
3	751 to 1350		0.8	2400	1500	Note 2 Slip on Flange	Note 1	2400	8	40 x 3	6.5
4	1351 to 2101		1.0	1500	1500	Note 2 Slip on Flange	Note 3	3000	8	40 x 6	8.12
5	> 2101		1.2	1500	1500	Angle ms Flange or Mezz Flange and Tie Rods	Note 3	3000	10	40 x 6	9.75

Notes:
1. Sheet Stiffening — Either cross breaking, beading or pleating of longest side to be applied on all ducting where duct dimension is over 550mm
2. Slide on Flanges — Up to 1350mm - 25mm flange, 1351-2100mm 35mm Flange > 2100mm 35mm Flange, and tie rod or mild steel 40 x 40 angle
3. Stiffener — Inverted V strip or equal stiffener fixed on duct side to prevent panels vibrating and sagging. (Tie rods where necessary to prevent drumming, vibration and sagging).

2.4 ELECTRICAL, AUTOMATIC CONTROLS AND MONITORING

a) Electrical

All electrical work shall be done in accordance with the latest wiring regulations and SABS codes.

The sub-Contractor will be responsible for:

i. The supply and installation of all the field wiring, control and switchboards associated with his installation.

ii. The supply and installation of all cable trays and conduits required to undertake the field wiring

iii. Supplying and installing the required equipment for the control panels specified.

iv. The wiring from a local isolator (provided by the Electrical Contractor) to a 24 hour fan station, or through the stop/start station to such fan from this isolator. The stop/start station is to be supplied and installed by the (Mechanical and Fire) sub-Contractor.

v. The supply and installation of any control equipment, such as individual thermostats that are required, including all wiring to and from such equipment.

vi. Providing a **Certificate of Electrical Compliance** to the Mechanical Consultant on completion of the mechanical and Fire protection electrical works.

In addition, the sub-Contractor will be responsible for:

i. The supply and installation of the main incoming supply cable/s to each air conditioning board, and for making off of these cables to the incoming side of the main isolator.

ii. The provision of a separately protected electrical supply to each independent air handling/ fan coil/ split system AC unit, geyser, hydroboil, etc.

iii. For the provision of specific conduits to be cast into concrete columns or slabs. These are to be detailed by the sub-Contractors on his Builders Work drawings and given to the electrician so that they may be installed.

b) Automatic Controls and Monitoring

Only specified HVAC equipment shall be Building Management System (BMS) compatible and/or be linked to controllers/ schedule timers to be installed in an area to be agreed upon by the Client/ End User. The control of the inside temperature shall be by means of remote sensors with the adjustment controllers being of the wall mounted hard wired type. The controllers shall be handed over to the Manager soon after the installation has been tested and commissioned. Microprocessor controller shall be mounted in the electrical panel located on the unit. The unit will be provided with all necessary temperature, pressure sensors, filter switches and wiring for complete temperature controls and economizer operation.

Each Multi-Tenant Zoned Hideaway Unit (HAU) shall have a return air sensor and/or a number of averaging sensors as indicated on the BoQ. The sensors shall give input data to the AHU's controller which in turn shall be monitored via BMS. The room setpoint shall be adjustable through the BMS, however, the control office/Centre Management shall be able to adjust the setpoint +/- 4ºC. Thereafter, the BMS shall require a password for any further adjustments to the set point temperature.

Provide an interface between the unit controls and the BMS. The BMS protocol shall be Modbus and the following Input/output functions shall be possible for all Package units and Hideaway units.

1. ALARM:
- Common Alarm 'Faulty Air Conditioner'

2. MONITOR (OUTPUT)
- ON / OFF

3. CONTROL
- ON/OFF remote switching
- Scheduled 7 Day scheduled timer (ON/OFF)
- *Temperature change would be an advantage but not mandatory*

Where systems are specified as being maintained "under fire conditions" all wiring will be suitable for the temperatures to be encountered.

c) General Electrical installations Standards

i) Conduit and Accessories

The conduit and conduit accessories shall comply fully with the applicable SABS specifications as set out below and the conduit shall bear the mark of approval of the South African Bureau of Standards.
- Screwed metallic conduit and accessories: SABS 1065, parts 1and 2.
- Plain-end metallic conduit and accessories: SABS 1065, parts 1 and 2.
- Non-metallic conduit and accessories: SABS 950.

All conduit fittings except couplings shall be of the inspection type. Where cast metal conduit accessories are used, these shall be of malleable iron. Zinc base fittings will not be allowed.

Bushes used for metallic conduit shall be brass and shall be provided in addition to locknuts at all points where the conduit terminates at switchboards, switch-boxes, draw-boxes, etc.

Draw-boxes are to be provided in accordance with the Wiring Code and wherever necessary to facilitate easy wiring.

The conduit used shall have an external diameter of 25mm. In all other instances the sizes of conduit shall be in accordance with the "Wiring Code" for the specified number and size of conductors.

Only one manufactured type of conduit and conduit accessories will be permitted throughout the installation.

Running joints in screwed conduit are to be avoided as far as possible and all conduit systems shall be set or bent to the required angles. The use of normal bends must be kept to a minimum with exception of larger diameter conduits where the uses of such bends are essential.

All metallic conduits shall be manufactured of mild steel with a minimum thickness of 1.2mm for plain-end conduit and 1,5mm in respect of screwed conduit.

ii) Conduit in Roof Spaces

Conduit in roof spaces shall be installed parallel or at right angles to the roof members and shall be secured at intervals not exceeding 1,5m by means of saddles screwed to the roof timbers,

Nails or crampets will not be allowed. Where non-metallic conduit has been specified for a particular service, the conduit shall be supported and fixed with saddles with a maximum spacing of 450mm. The Contractor shall supply and install all additional supporting timbers in the roof space as required.

Under flat roofs, in false ceilings or where there is less than 0,9m of clearance, or should the ceilings be insulated with glass wool or other insulating material, the conduit shall be installed in such a manner as to allow for all wiring to be executed from below the ceilings.

Conduit runs from distribution boards shall, where possible, terminate in fabricated sheet steel draw-boxes installed directly above or in close proximity to the boards.

iii) Surface Mounted Conduit

Wherever possible, the conduit installation is to be concealed in the building work, however, where unavoidable or otherwise specified under Part 2 of the specification, conduit installed on the surface must be plumbed or leveled and only straight lengths shall be used.

The use of inspection bends is to be avoided and instead the conduit shall be set uniformly and inspection couplings used where necessary.

No threads will be permitted to show when the conduit installation is complete, except where running couplings have been employed.

Running couplings are only to be used where unavoidable, and shall be fitted with sliced couplings as a lock-nut.

Conduit is to be run on approved spaced saddles rigidly secured to the walls,

Alternatively, fittings, tees, boxes, couplings etc., are to be cut into the surface to allow the conduit to fit flush against the surface, Conduit is to be bedded into any wall irregularities to avoid gaps between the surface and the conduit.

Crossing of conduits is to be avoided, however, should it be necessary purpose-made metal boxes are to be provided at the junction. The finish of the boxes and positioning shall be in keeping with the general layout.

Where several conduits are installed side by side, they shall be evenly spaced and grouped under one purpose-made saddle.

Distribution boards, draw-boxes, industrial switches and socket outlets etc. shall be neatly recessed into the surface to avoid double sets.

In situations where there are no ceilings the conduits are to be run along the wall plates and the beams.

Painting of surface conduit shall match the colour of the adjacent wall finishes.

Only approved plugging materials such as aluminium inserts, fibre plugs, plastic plugs, etc. and round-head screws shall be used for fixing saddles, switches, socket outlets, etc. to walls, wood plugs and the plugging in joints in brick walls are not acceptable.

iv) Conduit in Concrete Slabs

In order not to delay building operations the Contractor must ensure that all conduits and other electrical equipment which are to be cast in the concrete columns and slabs are installed in good time.

The Contractor shall have a Representative in attendance at all times when the casting of concrete takes place.

Draw-boxes, expansion joint boxes and round conduit boxes are to be provided where necessary Sharp bends of any nature will not be allowed in concrete slabs.

Draw and/or inspection boxes shall be grouped under one common cover plate, and must preferably be installed in passages or male toilets.

All boxes, etc., are to be securely fixed to the shuttering to prevent displacement when concrete is cast. The conduit shall be supported and secured at regular intervals and installed as close as possible to the neutral axis of concrete slabs and/or beams.

Before any concrete slab is cast, all conduit droppers to switchboards shall be neatly spaced and rigidly fixed.

v) Wiring

Except where otherwise specified in this specification, wiring shall be carried out in conduit throughout. Only one circuit per conduit will be permitted.

No wiring shall be drawn into conduit until the conduit installation has been completed and all conduit ends provided with bushes. All conduits to be clear of moisture and debris before wiring is commenced.

The wiring of the installation shall be carried out in accordance with the "Wiring Code". Further to the requirements concerning the installation of earth conductors to certain light points as set out in the "Wiring Code" it is a specific requirement of this document that where plain-end metallic conduit or non-metallic conduit has been used, earth conductors must be provided and drawn into the conduit with the main conductors to all points, including all luminaires and switches throughout the installation.

Wiring for lighting circuits is to be carried out with 1,5mm2 conductors and a 2,5mm2 earth conductor. For socket outlet circuits the wiring shall comprise 2,5mm2 conductors and a 2,5mm2 earth conductor.

The loop-in system shall be followed throughout, and no joints of any description will be permitted.

The wiring shall be done in PVC insulated 600/1000 V grade cable to SABS 150.

Where cable ends connect onto switches, luminaires etc., the end strands must be neatly and tightly twisted together and firmly secured. Cutting away of wire strands of any cable will not be allowed.

3. SITE DETAILS AND PLANT OPERATING CONDITIONS

The following conditions have been used for the design of the replacement HVAC systems.

3.1 PLANT DESIGN AMBIENT CONDITIONS

Altitude	720 m (Tzaneen, Limpopo Province)
Outside Design Conditions	Summer: 34°C_{db} and 23°C_{wb}
(Air 'Onto' Condenser)	Winter: -1°C
Return Air (Air 'Onto' Evaporator)	24°C_{db} / 16°C_{wb}
Electrical Supply	240 volt, 1 phase 50 cycle
	380 volt, 3 phase 50 cycle, 4 wire

3.2 INSIDE CONDITIONS REQUIRED

AIR-CONDITIONED AREAS:

Temperatures	Summer 22.5°C_{db}
	Winter 20°C db
Relative Humidity	30% - 60% RH

*NOTE: Heat load Calculations have been done and unit capacities selected by The Engineer. These are available to the contractor if required.

The above temperatures are those at which the majority of people are considered to be comfortable, as indicated on a Comfort Chart. The relative humidity would not be actively controlled but would be indirectly controlled within the comfort range as a result of the design and selection of the cooling plant. The temperatures would be controlled within a tolerance of ± 1.5°C, i.e. maximum temperature = 25.0 °C_{db}.

3.3 MINIMUM PLANT OPERATING CONDITIONS

All plant items will be suitable for operation in the environment in which they are to be located. As a minimum, all plant, motors, starters and ancillary equipment etc. will be suitable for operation at full capacity under the following conditions:

- Height above sea level not exceeding 100m;
- Air cooling at an average temperature over 24 hours not exceeding 45°C dry bulb;
- Maximum conditions of 45°C dry bulb and 50 %relative humidity;
- Minimum conditions of -10°C dry bulb and 100 % relative humidity;
- Protection of all equipment exposed to atmosphere/ambient to EN 60529 - IP 65.

4. SITE VISIT

Refer to main Bid Document.

5. TEMPORARY OFFICES

Refer to main Bid Document.

6. AREAS REQUIRING SPECIAL ATTENTION

6.1 PIPING

6.1.1 Interconnecting Piping

The sub-Contractor is to allow for all interconnecting piping to be carried out in air conditioning quality copper tubing in imperial sizes. All piping is to be clean and capped to prevent ingress of dirt. Soft drawn piping may be used in sized up to 15mm OD.

Existing drain points for condensate shall re-used. The sub-Contractor is to allow for the connection from the evaporator unit to the condensate stubs, existing and new, and to include for a p-trap.

Any vertical suction piping is to be trapped every 3m to allow for oil return. During soldering (brazing), a permanent dry nitrogen purge must be in place.

The Engineer may require sample welds to be cut out to ascertain that this requirement has been complied with. A nitrogen regulator is to be used for this purpose. Oxygen regulators are not allowed, and direct connection of piping to the nitrogen cylinder is not allowed. Should defects be found, then further samples may be requested by the Engineer. The cost of rectifying defective piping installation will be for the sub-Contractors' account.

6.1.2 Fitting and Valves

All bends and elbows are to be of long radius type. Allowance for expansion of piping is to be made as per the Engineer's General Specification. All fitting and valves are to be soldered joints.

6.2 PIPE INSULATION

For suction and discharge piping, proprietary expanded rubber insulation 18mm thick, such as Armaflex, may be used. Insulation is to be applied to the piping before installation takes place. Splitting of the insulation for application after piping installation is not acceptable. Butt joints are to be properly glued together and covered by self-adhesive P.V.C tape, or equal, taking great care not to compress the insulation material. Alternatively be insulated by means of "Thermaflex" Type 40 QE cross-linked polyethylene foam tube insulation, neoprene rubber foam with quick zip fastener, or equal. The insulation material shall meet the following minimum requirements:

Temperature range : -80ºC$_{db}$ to +120ºC$_{db}$
Thermal conductivity : 0,038 W/mºC at 0ºC
Thickness : 10mm
Density : 35kg/m3
Odour properties : Neutral
Cellular structure : Totally closed
Fire properties : Self-extinguishing to SABS

The insulation shall be applied to form a continuous and homogeneous vapour barrier over bends, supports, etc. Where these pipes are run in areas exposed to sunlight, they shall be installed inside suitable galvanized mild steel trunking or other approved method of covering.

6.3 PRESSURE TESTING AND CHARGING WITH REFRIGERANT

On completion of the installation and before completion of the piping insulation, the systems must each be pressure tested, evacuated and charged with refrigerant.

Pressure testing is to be carried out in three steps:

a) Using dry nitrogen at 300 kPa: search for leaks using a soap solution.
b) Blow off pressure and repair leaks.
c) Use refrigerant at 800 kPa boosted by dry nitrogen to 2400 kPa, and search for leaks using a soap solution followed by a halide torch test. The pressure is to be monitored for 24 hours without any discernible changes.

For evacuation of the system, a two stage vacuum pump is to be used and its ability to create the vacuum required is to be checked against a closed valve, using a vacuum indicator capable of measuring to 25 micron or better.

Once the vacuum pump has been checked, it is to be connected to the system using copper pipe minimum of ½" OD with a shut off valve in the line. Smaller copper piping and service hoses may not be used for the purpose.

The evacuation process is to be in two steps as follows:

(a) Evacuate at 6000 microns (0,8 kPa) and hold for 2 hours, using the ballast valve as necessary to present the vacuum falling below 6000 microns.
(b) Isolate the system from the vacuum pump and observe to increase in vacuum for 2 hours minimum. Any increase in vacuum may be due to an undetected leak or moisture. Run vacuum pump at 600 microns for a further 2 hours. If vacuum still increases then re-pressure test and repair leaks.

Charging of oil is to be carried out whilst the vacuum pump is operating during step (a) when the system is leak free. Charging of refrigerant R407C OR R410A is to be carried out in the liquid phase and requires the installation of a ¼" charging valve in the liquid line between the receiver shut off valve and the filter drier.
To add refrigerant to the system, connect the liquid valve of the refrigerant cylinder to the receiver purge valve using service gauges and manifold. Purge the charging hoses and manifold, close the receiver shut off valve and charge refrigerant directly into the receiver until the receiver contains its maximum operating charge.
Charging is to be carried out slowly to prevent thermal shock. Disconnect the charging hoses after closing the receiver purge valve and liquid valve.

Connect the charging hose to the ¼" charging valve and run the plant, adding further refrigerant as required. To induce liquid flow, the receiver shut-off valve is to be throttled. Caution is to be taken not to overload the compressor or overcharge the system.

Refrigerant is to be weighed during charging and the amount entered into the completion certificate. One completing certificate is to be completed for each system, and a copy given to the Engineer.

6.4 FINISHING & TIDYING

Progressive and systematic finishing and tidying will form an essential part of this contract. Under no circumstances shall spoil, rubble, materials, equipment or unfinished operations be allowed to accumulate unnecessarily and in the event of this occurring the Engineer shall have the right to withhold payment for as long as necessary in respect of the relevant works in the area(s) concerned.

6.5 CONSTRUCTION METHODS

a) Construction shall be carried out in accordance with the Expanded Public Works Programme (EPWP) guidelines that are aimed at infrastructure and services development coupled with creation of employment and skills training.

b) Labour-based or labour-intensive construction may be defined as the economically efficient employment of as much labour as is technically feasible to a produce as high a standard of construction as demanded by the specification and allowed by the funding available. In other words, projects based on labour-intensive principles aim at devoting the highest feasible proportion of projects costs to unskilled, semi-skilled and skilled labour without jeopardizing the technical quality of the product demanded by the specification.

c) Labour-based methods of construction result in the creation of a significant increase in employment opportunities per unit of expenditure. The intensive employment of labour achieves value for money through innovative techniques of work and management. In particular (i) as far as possible, payment of wages for labour is related to production output: a reasonable “task” is set, upon completion of which the labourer may go home and (ii) employment is either on a daily/casual/temporary basis or in the form of a short-term monthly contract. It is useful to think of labour-based methods as the effective substitution of labour for equipment in construction. This is done in such a way that there is neither an increase in economic cost nor a decrease in quality.

d) The following regulations must be adhered to so as to ensure that the construction methods used are labour-intensive.
   i. The remuneration to local labour for hourly-rated employees and/or daily-based work shall be in accordance with the prevailing gazetted rates.
   ii. The name, identification number, task performed and hours worked per day for each labourer shall be recorded by the sub-Contractor. These records shall be submitted to the Engineer together with each payment certificate.

e) Bidders are encouraged to utilize the services of locally based sub-Contractors.

6.6 BURGLAR BARS

Burglar bars shall be installed at each external ventilation exhaust louvre which penetrates the facade of the complex.

The bars shall not be less than 15mm round bars, spaced at 125mm centres in both directions and welded into a frame. They are to be hot dipped galvanized after manufacture.

The burglar bar frame should be built into the masonry structures. Alternatively they can be bolted into the masonry structure (independent of any connecting ductwork) and the bolt heads tack welded to ensure they cannot be easily removed. The area of the tack weld is to be touched up with cold galvanizing paint.

A written confirmation that all openings in all the air conditioning and ventilation systems have been protected by the specified burglar bars will be required from the air conditioning sub-Contractor. This certificate is to be provided at the beneficial occupation stage.

6.7 PAINTING

The installation shall be painted in accordance with an approved colour code. Such painting shall be only necessary to those items which would normally be visible when serviced, all mild steel or other components which would otherwise suffer corrosion if unpainted, however, shall be painted with two coats of rust-proof paint whether such components are normally visible or note. Items which are factory painted need not be repainted other than any making good which may be necessary. All plants requiring painting shall be correctly prepared and painted with two coats of enamel gloss after one coast of suitable rust-proof primer and an undercoat.

6.8 OTHER SERVICES

6.8.1 Fire Protection

All systems shall incorporate the necessary fire protection and smoke protection features demanded by the National Building Regulations and the local authority. These features shall include but not be limited to detection devices, electrical actuator and fusible link operated fire dampers.

6.8.2 Smoke Control

In the event of a fire alarm, all air-conditioning units and ventilation fans shall be stopped by means of a fire relay provided by the sub-Contractor.

The Smoke Detection Contractor shall allow for bringing the necessary wiring into the (HVAC) sub-Contractor's (Rooftop Package and large hideaway) and Electrical Contractor's (small units) electrical panels, and connecting to potential free contacts.

7. COMPLETION, GAURANTEES & MAINTENANCE

7.1 TESTING

A **Testing and Commissioning Notice** shall be sent out to the Engineer accompanied with the test procedure 2 weeks prior to the scheduled Testing and Commissioning date.

All Equipment used for Testing and Commissioning shall have a **Valid Calibration Certificate** which must be placed on the test report. On completion, the installation shall be balanced, set and tested to establish the capacity and performance of the plant. All such tests shall be recorded and typed copies of all test recordings shall be included within the operating manuals later specified herein. The test reports shall set out the procedure, data and instrument readings obtained as compared with the required capacities and the manufacturer's name plate rating where applicable. Additional refrigerant and oil quantities must be considered and approved by the Equipment supplier before installation by sub-Contractor. Refrigerant pipe sizes must also be considered for compensation due to pressure drop due to length of pipe runs & bends and approved by the equipment supplier prior to installation. All this data and approvals must be forwarded to the Engineer.

All performance figures obtained during testing and commissioning must be within +-10% of the specified performance figures given in the Tender drawings and Technical specification

The Air Handling/ Package Rooftop equipment shall be factory run tested for a minimum of eight hours to ensure proper operation.

7.2 END USER TRAINING

Upon completion of all works and all tests, the contractor shall furnish necessary operator's labor and helpers for operating the entire installation for a period not less than two weeks of ten hours each to enable the owner's staff get acquainted with the operation of the system. During this period the contractor shall train the owners personnel in the operation, adjustment and maintenance of all equipment installed.

7.3 OPERATING AND MAINTENANCE MANUALS

Three instruction manuals shall be provided for the new equipment. Each manual shall comprise of the following sections, bound in a vinyl plastic covered folder with the name of the project typewritten on a card inserted into a clear plastic covered cardholder on the front cover and spine and shall be handed to the Client on completion of the installation.

- **Index**
- **Description of Systems and Equipment** (as installed)
- **Operation of Equipment** (as installed)
- **Plant and equipment** (a schedule list of all major plants to include description, make, model number and supplier's name and address).
- **Commissioning Data (Signed off by Engineer)**
- **Inspection and Maintenance Instructions** (in schedule form setting out each item of the plant, the description and frequency of maintenance operations required).
- **Operating Instructions (**Plant running checklist and frequency of servicing, Safety precautions to be taken, Manual and automatic operation, Operator's duties, Lubricating oils and service instructions, Pre-start checklist for each system, Starting and stopping procedures)

- **Spare Parts** (list of spare parts to be supplied, as later specified herein, with detailed description of each part, make, model and part number and supplier's name and address)
- **Descriptive literature** (for all items of plant and equipment)
- **As-Built drawings in hardcopy and Autocad 2010 version electronic format** (of plant as installed to include plant layout drawings, control and wiring diagrams and schematic piping diagrams).

7.4 COMMISSIONING PROGRAMME

The sub-Contractor shall adhere to the Main Contractor's programme for the installation, but shall ensure that his commissioning programme makes allowance for the following requirements:

i. The blow-out of all supply air ducts for the various air conditioning and ventilation systems, shall be completed no later than 1 (one) week before Beneficial Occupation Date.

ii. At the date of Beneficial Occupation, **ALL** systems shall be operating and the air conditioning system is fully operational, balanced, tested, commissioned, approved by The Engineer and handed over by that date.

7.5 GUARANTEE AND MAINTENANCE

The entire air conditioning and ventilation installation shall be subject to a guarantee and servicing of **12 months from the Beneficial Occupation date**, or from the date of the Taking-Over certificate as state below.

Expendables such as filters and refrigerant for the maintenance period must be included in the contract price. Oils and other such minor expendables shall also be included. The sub-Contractor shall be entirely responsible for carrying out regular inspections at intervals not greater than 1 month.

A detailed inspection and service log book with check sheets showing all functions to be carried out at each inspection and service, is to be kept on site for all service activity and must be countersigned by a manager or facilities personnel as client representative. The equipment shall be services and maintained in strict accordance to the equipment manufacturer's recommended intervals and service item list. The sub-Contractor shall draw-up and submit the INSPECTION & SERVICE SCHEDULE to the Engineer for their approval. The Service Schedule shall include for regularity of maintenance, service items at those intervals and recommended spare parts list. This schedule must be submitted 2 months before equipment handover and approved by the Engineer latest 3 weeks before scheduled handover of installations.

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7.6 WARRANTIES

7.6.1 Taking-Over Certificate

When the whole of the Works have been substantially completed and have satisfactorily passed any Tests on Completion prescribed by the Contract, the sub-Contractor may give a notice to that effect to The Engineer, with a copy to the Employer, accompanied by a written undertaking to finish with due expedition any outstanding work during the Defects Liability Period. Such notice and undertaking shall be deemed to be a request by the sub-Contractor for The Engineer to issue a Taking-Over Certificate in respect of the Works. The Engineer shall, within 21 days of the date of delivery of such notice, either issue to the sub-Contractor with a copy to the Employer, a Taking-Over Certificate, stating the date on which, in his opinion, the Works were substantially completed in accordance with the Contract, or give instructions in writing to the

sub-Contractor specifying all the work which, in The Engineer's opinion, is required to be done by the sub-Contractor before the issue of such Certificate.

The Engineer shall also notify the sub-Contractor of any defects in the Works affecting substantial completion that may appear after such instructions and before completion of the Works specified therein. The sub-Contractor shall be entitled to receive such Taking-Over Certificate within 21 days of completion, to the satisfaction of the Architect, of the Works so specified and remedying any defects so notified.

7.6.2 Taking Over of Sections or Parts

Similarly, in accordance with the procedure set out in Sub-Clause 7.1, the sub-Contractor may request and The Engineer shall issue a Taking-Over Certificate in respect of:

a) any substantial part of the Permanent Works which has been both completed to the satisfaction of The Engineer and, otherwise than as provided for in the Contract, occupied or used by the Employer, or
b) any part of the Permanent Works which the Employer has elected to occupy or use prior to completion (where such prior occupation or use is not provided for in the Contract or has not been agreed by the sub-Contractor as a temporary measure).

7.6.3 Substantial Completion of Parts

If any part of the Permanent Works has been substantially completed and has satisfactorily passed any Tests on Completion prescribed by the Contract, The Engineer may issue a Taking-Over Certificate in respect of that part of the Permanent Works before completion of the whole of the Works and, upon the issue of such Certificate, the sub-Contractor shall be deemed to have undertaken to complete with due expedition any outstanding work in that part of the Permanent Works during the Defects Liability Period.

7.6.4 Surfaces Requiring Reinstatement

Provided that a Taking-Over Certificate given in respect of any Section or part of the Permanent Works before completion of the whole of the Works shall not be deemed to certify completion of any ground, roof or surfaces requiring reinstatement unless such Taking-Over Certificate shall expressly so state.

7.7 DEFECTS LIABILITY

7.7.1 Defects Liability Period

In these Conditions the expression "Defects Liability Period" shall mean the defects liability period calculated from:

a) the date of completion of the Works certified by The Engineer in accordance with Clause 8, or
b) in the event of more than one certificate having been issued by The Engineer under Clause 8, the respective dates so certified, and in relation to the Defects Liability Period the expression "the Works" shall be construed accordingly.

The defects liability period for this contract shall however be not less than 12 calendar months from the date of certification by The Engineer.

7.7.2 Completion of Outstanding Work and Remedying Defects

During the Defects liability period, the sub-Contractor shall:

a) complete any minor works, if any, outstanding on the date stated in the Taking-Over Certificate as soon as practicable after such date, and
b) execute all such work of amendment, reconstruction, and Remedying defects, shrinkages or other faults as The Engineer may, during the Defects Liability Period or within 14 days after its expiration, as a result of an inspection made by or on behalf of The Engineer prior to its expiration, instruct the sub-Contractor to execute.

The expiration of the Defects Liability Period shall not exonerate the sub-Contractor from any further liabilities arising at Law.

7.7.3 Cost of Remedying Defects

All work referred to in Sub-Clause 7.7.2 shall be executed by the sub-Contractor at his own cost if the necessity thereof is, in the opinion of the Architect, due to:

a) the use of materials, Plant or workmanship not in accordance with the Contract,
b) where the sub-Contractor is responsible for the design of part of the Permanent Works, any fault in such design, or
c) the neglect or failure on the part of the sub-Contractor to comply with any obligation, expressed or implied, on the sub-Contractor's part under the Contract,

If, in the opinion of The Engineer, such necessity is due to any other cause, he shall determine an addition to the Contract Price and shall notify the sub-Contractor accordingly, with a copy to the Employer.

7.8 CONTRACTOR'S FAILUIRE TO CARRY OUT INSTRUCTIONS

In case of default on the part of the sub-Contractor in carrying out such instruction within a reasonable time, the Employer shall be entitled to employ and pay other persons to carry out the same and if such work is work which, in the opinion of The Engineer, the sub-Contractor was liable to do at his own cost under the Contract, then all costs consequent thereon or incidental thereto shall, after due consultation with the Employer and the sub-Contractor, be determined by The Engineer and shall be recoverable from the sub-Contractor by the Employer, and may be deducted by the Employer from any monies due or to become due to the sub-Contractor and The Engineer shall notify the sub-Contractor accordingly, with a copy to the Employer.

8. SCHEDULE OF MAJOR HVAC EQUIPMENT PERFORMANCE REQUIREMENT

8.1 SCHEDULE OF VENTILATION FANS

SECOND FLOOR FAN SCHEDULE

UNIT NO	SERVING	UNIT TYPE	CAPACITY Q (l/s)	INPUT POWER (kW)		SPEED (RPM)	TOTAL PRESSURE (Pa)	SOUND ATTENUATORS	QTY
FAF2.1	SECOND FLOOR OFFICES	Inline tube fan - Dia. 250	105	0.31	400V/3PH/50Hz	2880	350	POD, 2x Silax1.5d	1
FAF2.2	SECOND FLOOR OFFICES	Direct drive adjustable pitch axial flow fans	225	0.41	400V/3PH/50Hz	1400	350	POD, 2x Silax1.5d	1
FAF2.3	SECOND FLOOR OFFICES	Direct drive adjustable pitch axial flow fans	225	0.41	400V/3PH/50Hz	1400	350	POD, 2x Silax1.5d	1
FAF2.4	SECOND FLOOR OFFICES	Direct drive adjustable pitch axial flow fans	150	0.41	400V/3PH/50Hz	1400	350	POD, 2x Silax1.5d	1

9. MATERIALS SCHEDULE

The contractor shall complete the following schedules and submit them to the Representative/Agent within 21 days of the date of the acceptance of the tender.

The schedules will be scrutinised by the Representative/Agent and should any material offered not comply with the requirements contained in the specification, the Contractor will be required to supply material in accordance with the contract at no additional cost.

NB: Only one manufacturer's name to be inserted for each item.

ITEM	MATERIAL	MAKE OR TRADE NAME	COUNTRY OF ORIGIN
1.	SPLIT UNITS		
2.	AXIAL FANS		
3.	INLINE TUBE FANS		
4.	AIR TERMINALS		

NOTE:

Should the contractor wish to supply materials other than that originally offered, prior written approval must be obtained from the Representative/Agent before any orders are placed.

CONTRACTOR: _____

SIGNED: _____

DATE: _____

10. SCHEDULE OF IMPORTED MATERIALS AND EQUIPMENT TO BE COMPLETED BY TENDERER

ITEM	MATERIAL/ EQUIPMENT	RAND (R) (EXCL. VAT)
1		
2		
3		
4		
5		
6		

The Contractor shall list all imported items, materials and/or equipment which shall be excluded from the Contract Price Adjustment Provisions and shall be adjusted in terms of currency fluctuations only.

Copies of the supplier's quotations for the items, materials or equipment (provided that such costs shall not be higher than the relevant contract rate as listed above) should be lodged with the Representative/Agent of the Department within 60 (sixty) days from the date of acceptance of the tenders.

No adjustment of the local VAT amount, nor the contractor's profit, discount, markup, handling costs, etc. shall be allowed.

The Contractor is referred to the price adjustment formula as contained in the main contract and should acquaint himself / herself with the contents thereof.

CONTRACTOR: _____

SIGNED: _____

DATE: _____

C6-ANNEXURES

ANNEXURE A

TEMP GTM STAFF OFFICE LOCATION

AGATHA STREET

EXIST. PARK

EXIST. FOUNTAIN

EXIST. LIBRARY BUILDING

VISITOR'S PARKING

VISITOR'S PARKING

STAFF RKING

CONSTRUCTION CAMP/SERVICE ENTRANCE

4347

13123

HOARDING

7579

13905

HOARDING

EXIST. OLD LIBRARY

CONSTRUCTION CAMP 1

EXIST. CIVIC CENTRE BUILDING

WEST OFFICE WING

12631

HOARDING

6534

25074

HOARDING

CYCADS TO BE INTENTIONALLY PROTECTED/SHIELDED FROM CONSTRUCTION ACTIVITY

11134

EAST OFFICE WING

9323

HOARDING

9108

HOARDING

5000

11142

HOARDING

TEMP GTM STAFF OFFICE LOCATION

17449

HOARDING

5000

OLD FIRE STATION BUILDING

TEMP GTM STAFF OFFICE LOCATION

HOARDING

9150

HOARDING

5033

VISITOR'S PARKING

PIENAAR STREET

VISITOR'S PARKING

STAFF PARKING

PEACE STREET

NORTH

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PROJECT: GREATER TZANEEN MUNICIPALITY
ROOF REPLACEMENT TO SELECTED PORTIONS OF GTM CIVIC CENTRE, ON ERF 169 -TZANEEN

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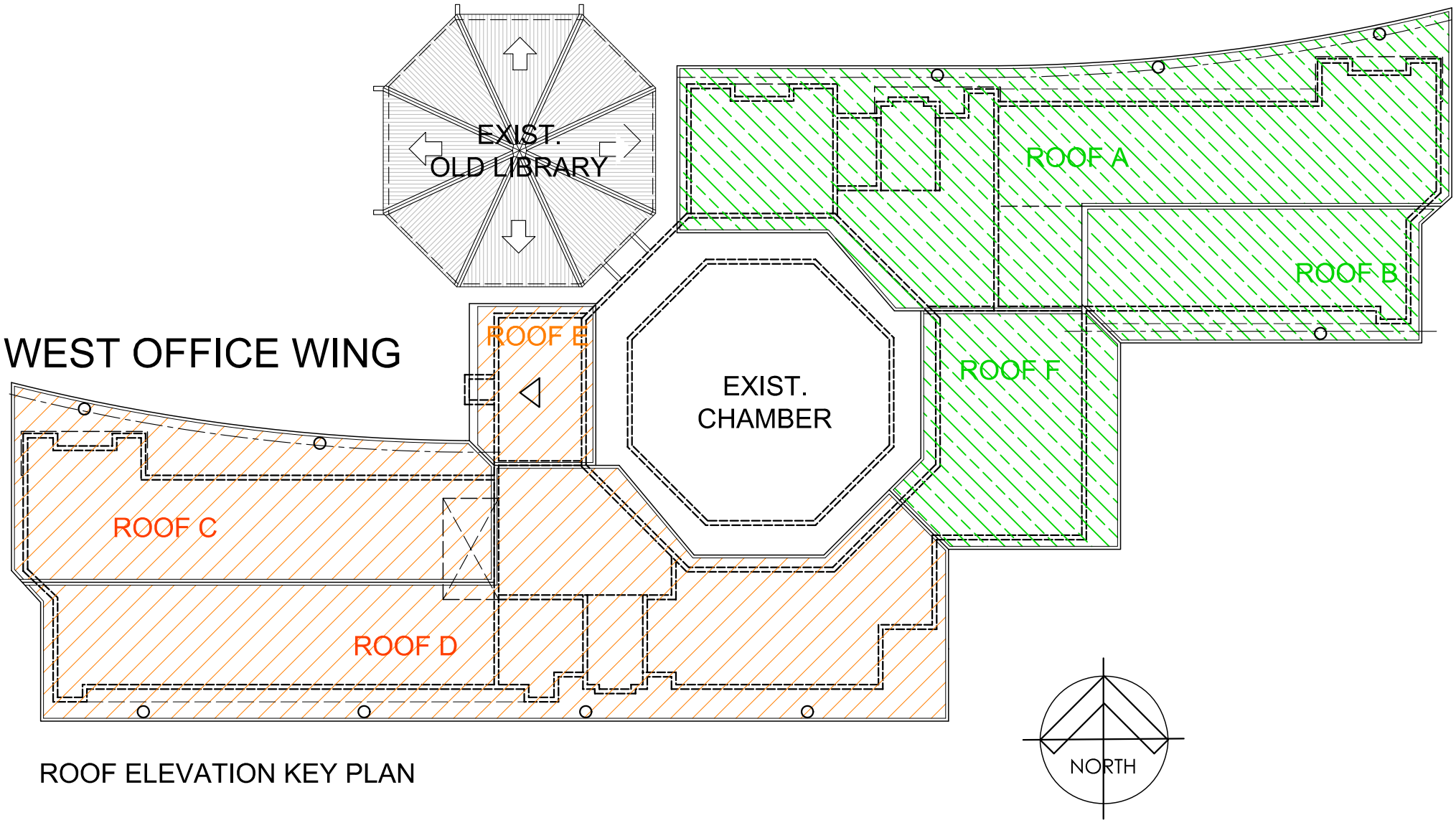
-				DATE DRN	29/01/2021
DESIGNED	HS		DATE	SCALE	NTS

DRAWING TITLE: SITE LAYOUT: CONSTRUCTION CAMP, HOARDING AND GTM TEMP OFFICE LOCATION AREAS

DRAWING NUMBER: POL-533-ROOF 000_ REV -

ISSUER | JOB No. | TYPE | SEQ No. | REV



ROOF ELEVATION KEY PLAN

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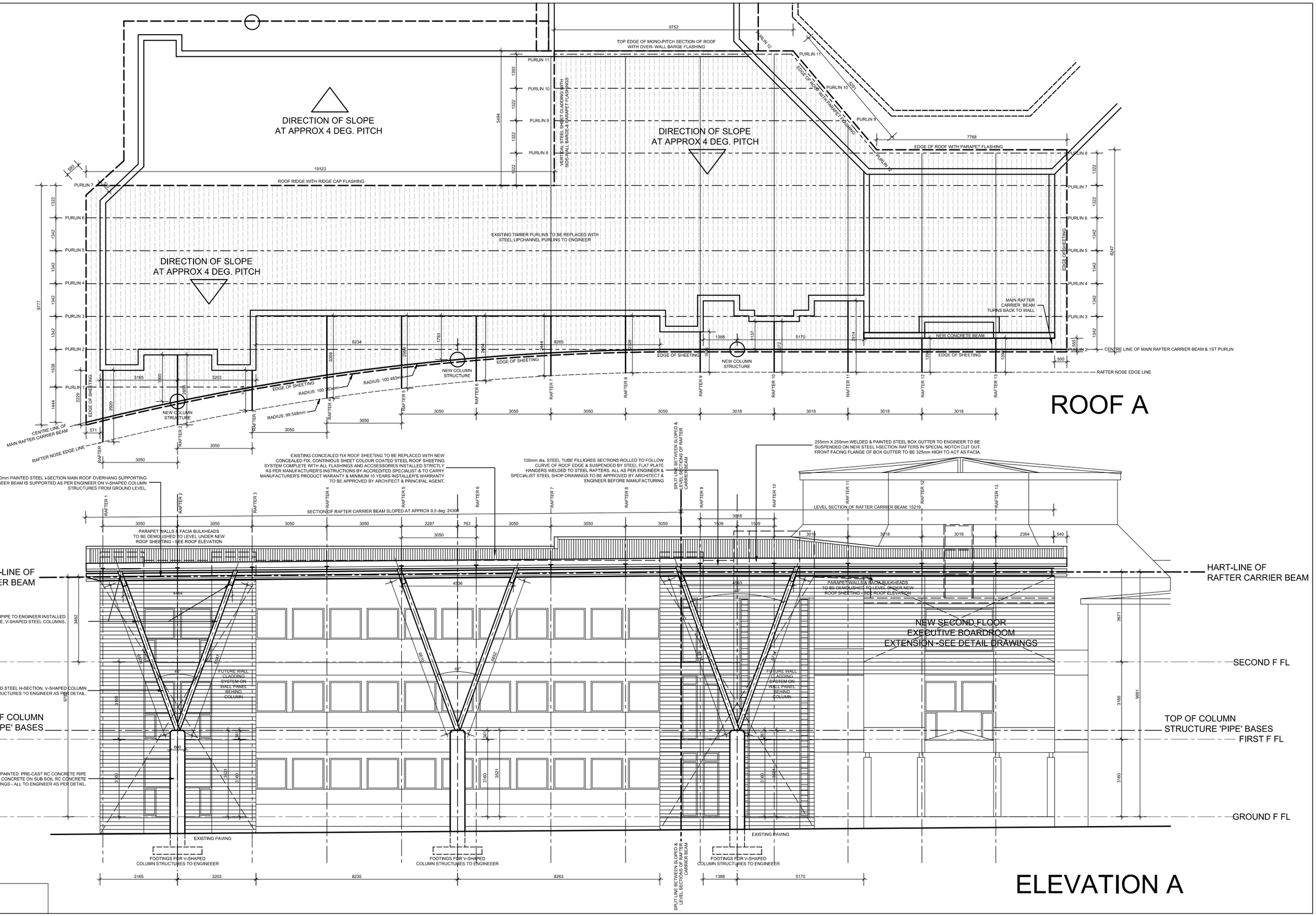
BUILDING WING KEY PLAN

DRAWING NUMBER
POL-533-ROOF KEY_ REV -



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DRAWING TITLE:
ROOF A
ARCHITECTURAL LAYOUT & ELEVATION

DRAWING NUMBER
POL-533-ROOF A1_ REV -

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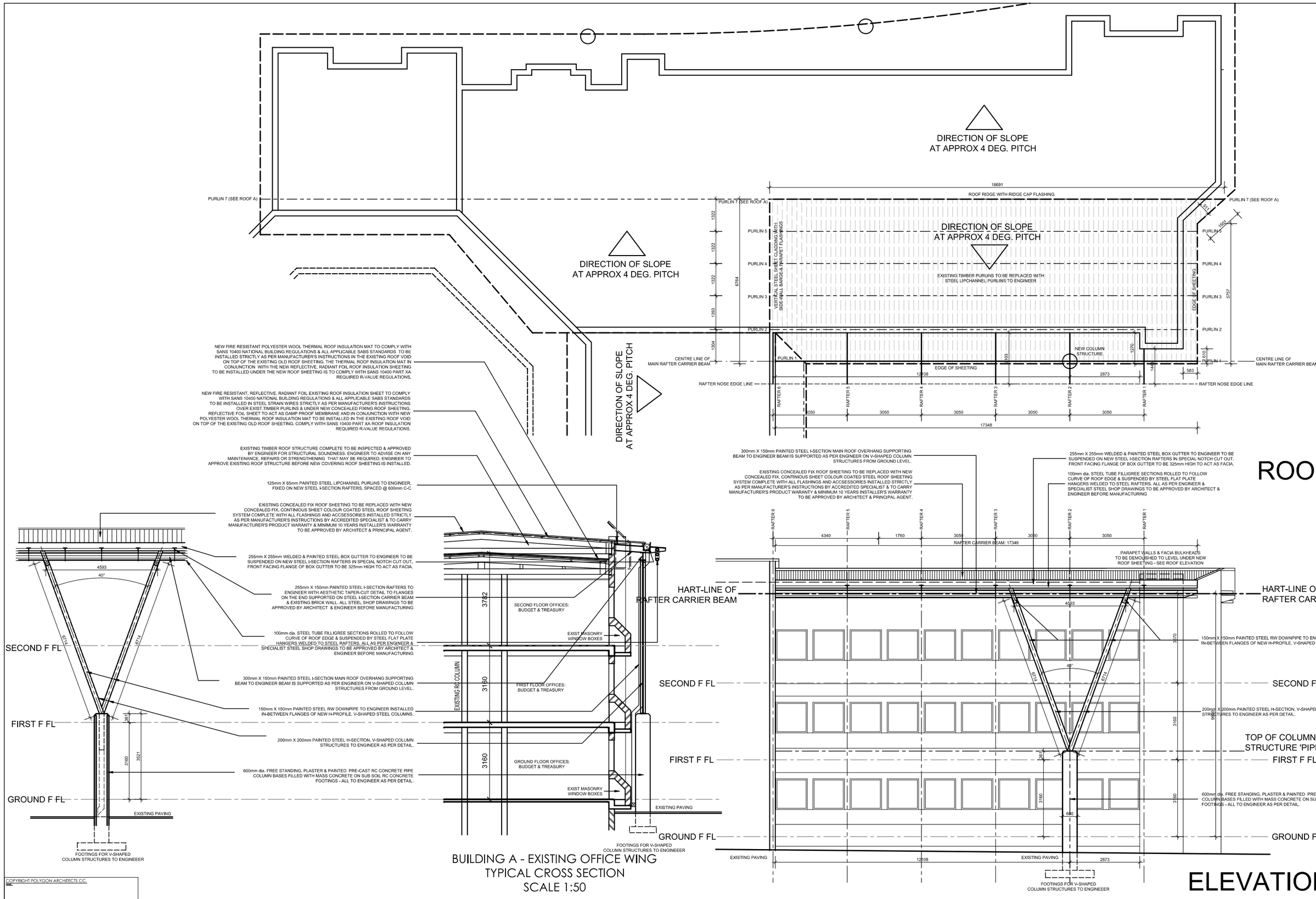

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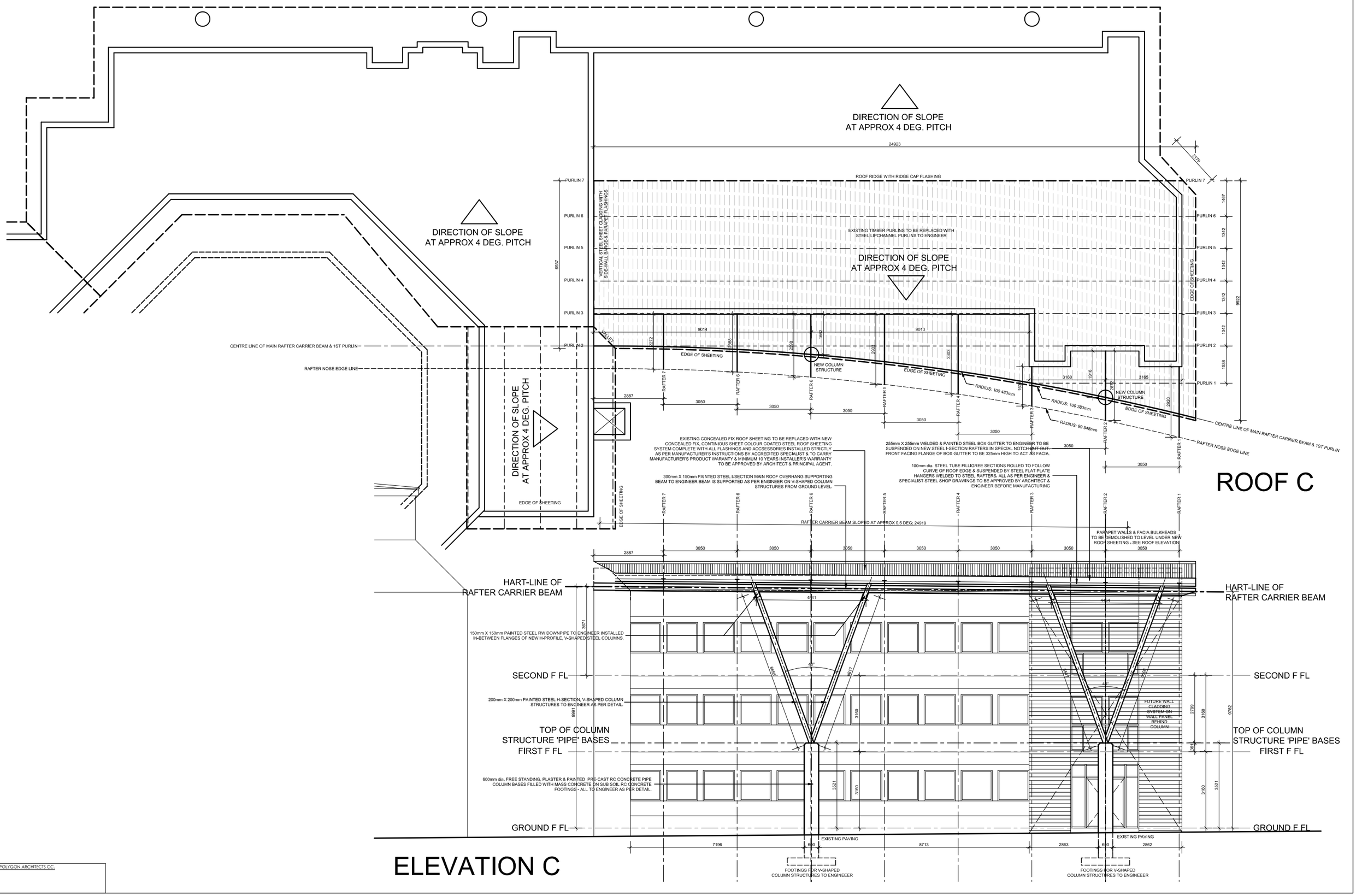

ROOF C

ELEVATION C

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ROOF B
ARCHITECTURAL LAYOUT & ELEVATION

DRAWING NUMBER
POL-533-ROOF C1_ REV -

ISSUER | JOB No. | TYPE | SEQ No. | REV.

DIRECTION OF SLOPE AT APPROX 4 DEG. PITCH

EDGE OF SHEETING

PURLIN 10

PURLIN 9

PURLIN 8

PURLIN 7

PURLIN 6

PURLIN 5

PURLIN 4

PURLIN 3

PURLIN 2

PURLIN 1

VERTICAL STEEL SHEET CLADDING WITH SIDE WALL BARGE & PARAPET FLASHINGS.

EDGE OF ROOF WITH PARAPET FLASHING

DIRECTION OF SLOPE AT APPROX 4 DEG. PITCH

ROOF RIDGE WITH RIDGE CAP FLASHING

DIRECTION OF SLOPE AT APPROX 4 DEG. PITCH

EXISTING TIMBER PURLINS TO BE REPLACED WITH STEEL LIPCHANNEL PURLINS TO ENGINEER

EDGE OF SHEETING

CENTRE LINE OF MAIN RAFTER CARRIER BEAM

RAFTER NOSE EDGE LINE

NEW COLUMN STRUCTURE

RAFTER 16 RAFTER 15 RAFTER 14 RAFTER 13 RAFTER 12 RAFTER 11 RAFTER 10 RAFTER 9 RAFTER 8 RAFTER 7 RAFTER 6 RAFTER 5 RAFTER 4 RAFTER 3 RAFTER 2 RAFTER 1

3058 2970 3050 3050 3050 3050 3050 3050 3082 3033 3093 3133 3050 3050 2951 2783

46948

ROOF D

300mm X 150mm PAINTED STEEL I-SECTION MAIN ROOF OVERHANG SUPPORTING BEAM TO ENGINEER BEAM IS SUPPORTED AS PER ENGINEER ON V-SHAPED COLUMN STRUCTURES FROM GROUND LEVEL.

EXISTING CONCEALED FIX ROOF SHEETING TO BE REPLACED WITH NEW CONCEALED FIX, CONTINIOUS SHEET COLOUR COATED STEEL ROOF SHEETING SYSTEM COMPLETE WITH ALL FLASHINGS AND ACCSESSORIES INSTALLED STRICTLY AS PER MANUFACTURER'S INSTRUCTIONS BY ACCREDITED SPECIALIST & TO CARRY MANUFACTURER'S PRODUCT WARANTY & MINIMUM 10 YEARS INSTALLER'S WARRANTY TO BE APPROVED BY ARCHITECT & PRINCIPAL AGENT.

255mm X 255mm WELDED & PAINTED STEEL BOX GUTTER TO ENGINEER TO BE SUSPENDED ON NEW STEEL I-SECTION RAFTERS IN SPECIAL NOTCH CUT OUT. FRONT FACING FLANGE OF BOX GUTTER TO BE 325mm HIGH TO ACT AS FACIA.

100mm dia. STEEL TUBE FILLIGREE SECTIONS ROLLED TO FOLLOW CURVE OF ROOF EDGE & SUSPENDED BY STEEL FLAT PLATE HANGERS WELDED TO STEEL RAFTERS. ALL AS PER ENGINEER & SPECIALIST STEEL SHOP DRAWINGS TO BE APPROVED BY ARCHITECT & ENGINEER BEFORE MANUFACTURING

PARAPET WALLS & FACIA BULKHEADS TO BE DEMOLISHED TO LEVEL UNDER NEW ROOF SHEETING - SEE ROOF ELEVATION

RAFTER CARRIER BEAM: 46881

HART-LINE OF RAFTER CARRIER BEAM

SECOND F FL

TOP OF COLUMN STRUCTURE 'PIPE' BASES

FIRST F FL

GROUND F FL

150mm X 150mm PAINTED STEEL RW DOWNPIPE TO ENGINEER INSTALLED IN-BETWEEN FLANGES OF NEW H-PROFILE, V-SHAPED STEEL COLUMNS.

200mm X 200mm PAINTED STEEL H-SECTION, V-SHAPED COLUMN STRUCTURES TO ENGINEER AS PER DETAIL.

FUTURE WALL CLADDING SYSTEM ON WALL PANEL BEHIND COLUMN

600mm dia. FREE STANDING, PLASTER & PAINTED PRE-CAST RC CONCRETE PIPE COLUMN BASES FILLED WITH MASS CONCRETE ON SUB SOIL RC CONCRETE FOOTINGS - ALL TO ENGINEER AS PER DETAIL.

EXISTING PAVING

FOOTINGS FOR V-SHAPED COLUMN STRUCTURES TO ENGINEEER

2915 11417 8282 3178 3178 8282 3902

ELEVATION D

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PROJECT
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ROOF REPLACEMENT TO SELECTED PORTIONS OF GTM CIVIC CENTRE, ON ERF 169 -TZANEEN

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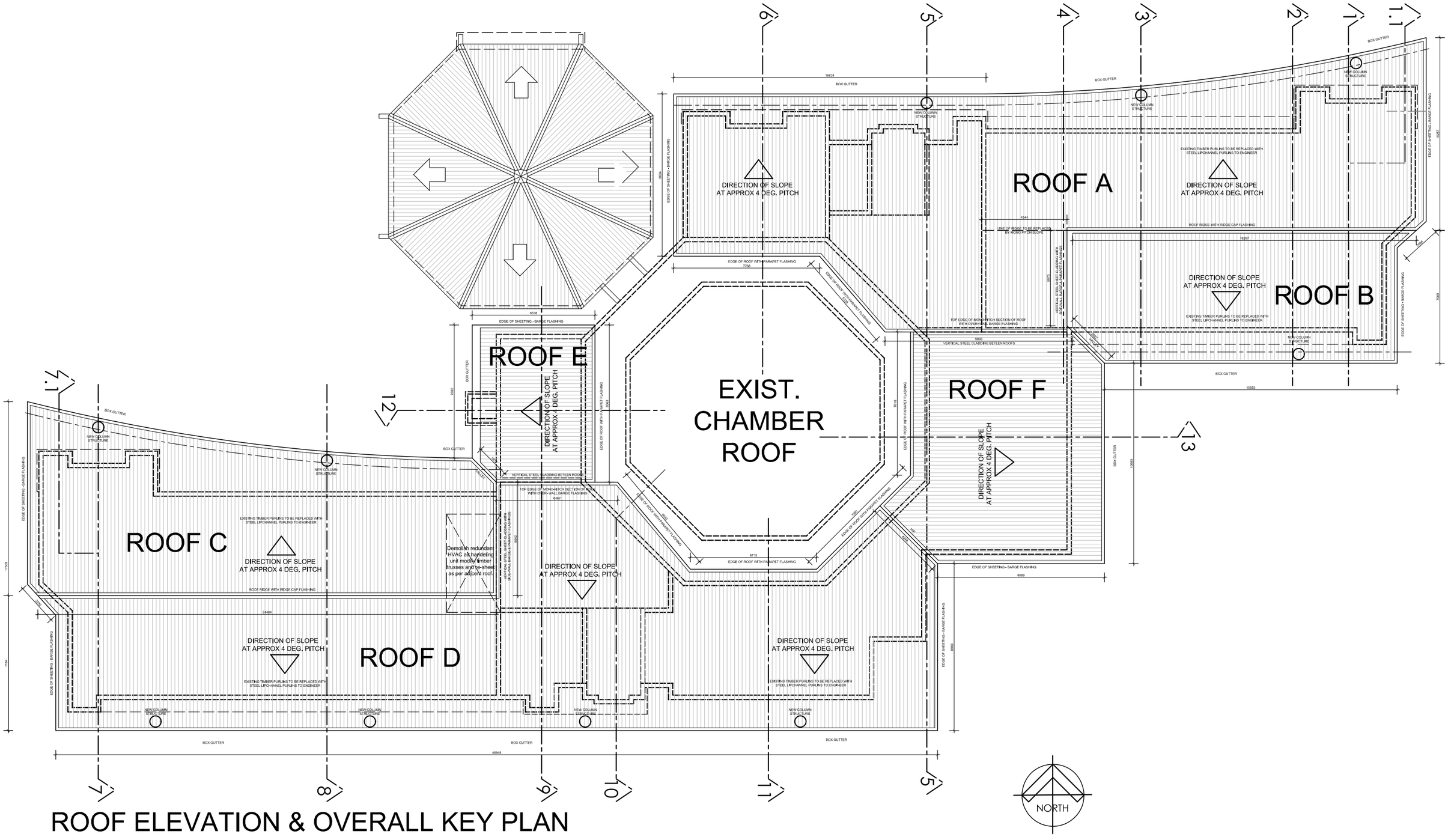
ISSUED JOB No. TYPE SEQ No. REV

DRAWING TITLE:
ROOF D
ARCHITECTURAL LAYOUT & ELEVATION

DRAWING NUMBER
POL-533-ROOF D1_ REV -



ROOF ELEVATION & OVERALL KEY PLAN

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PROJECT
GREATER TZANEEN MUNICIPALITY
ROOF REPLACEMENT TO SELECTED PORTIONS OF GTM CIVIC CENTRE, ON ERF 169 -TZANEEN

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-				DATE DRN	15/01/2021
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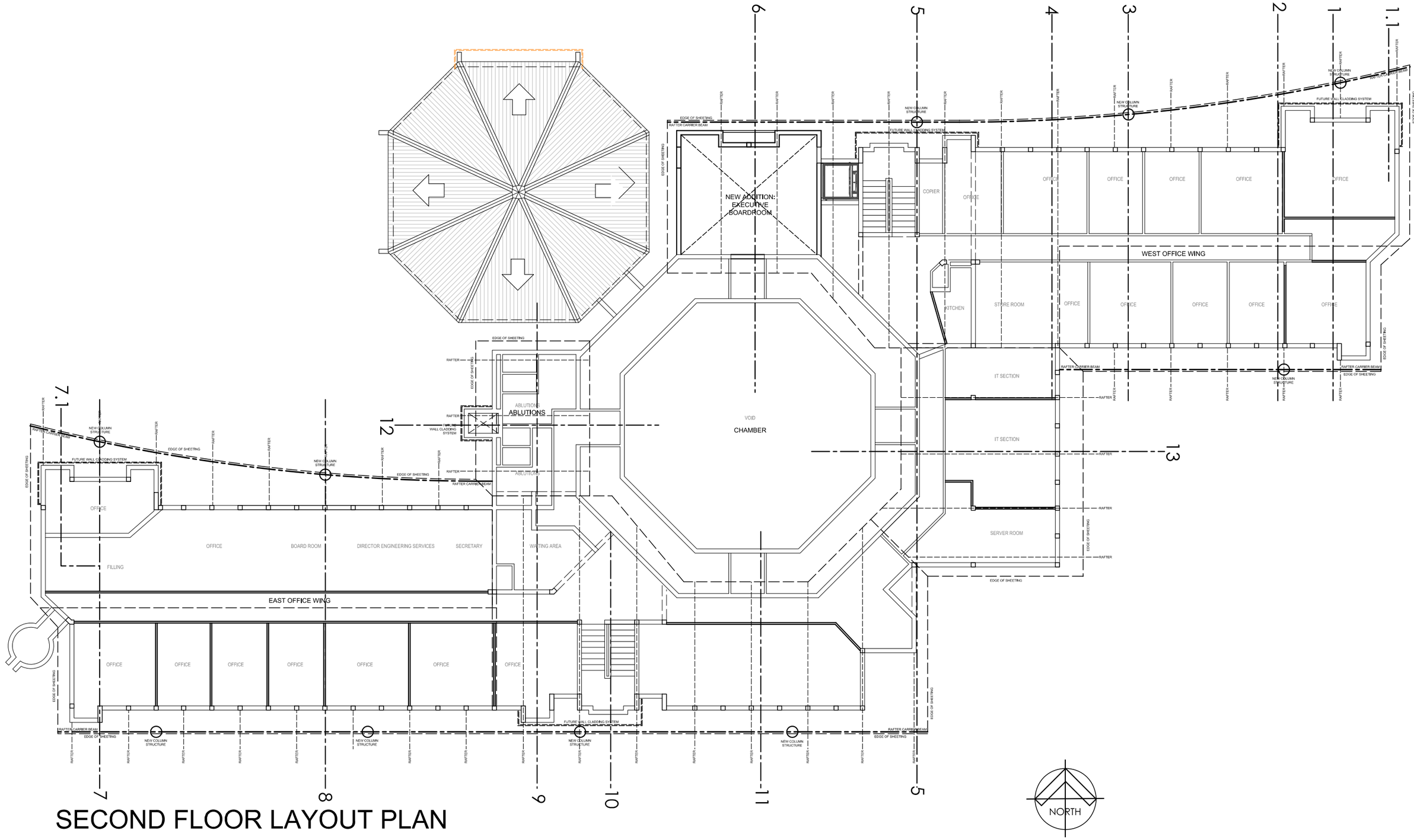
ISSUER | JOB No. | TYPE | SEQ No. | REV.

DRAWING TITLE:
ARCHITECTURAL ROOF EVEATION

DRAWING NUMBER
POL-533-ROOF 100_ REV -



SECOND FLOOR LAYOUT PLAN

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PROJECT: GREATER TZANEEN MUNICIPALITY
ROOF REPLACEMENT TO SELECTED PORTIONS OF GTM CIVIC CENTRE, ON ERF 169 -TZANEEN

	BY	CHECKED	APPROVED	PAPER SIZE	A0
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-			SIGN		
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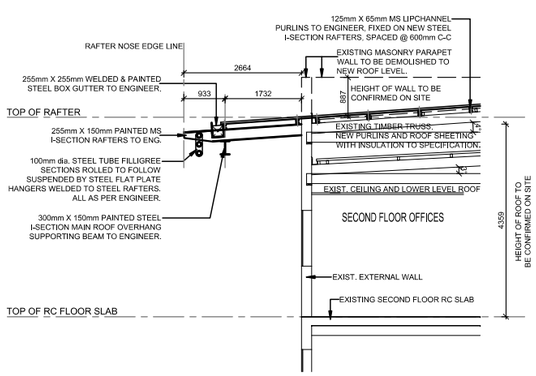
DESIGNED	HS		DATE	SCALE	1:50

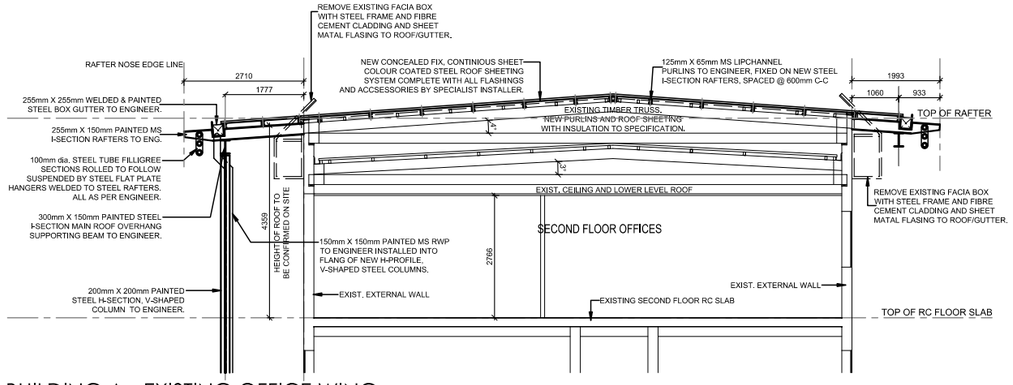
DRAWING TITLE: SECOND FLOOR 'RING BEAM' / WALL PLATE LAYOUT PLAN

DRAWING NUMBER: POL-533-ROOF 101_ REV -

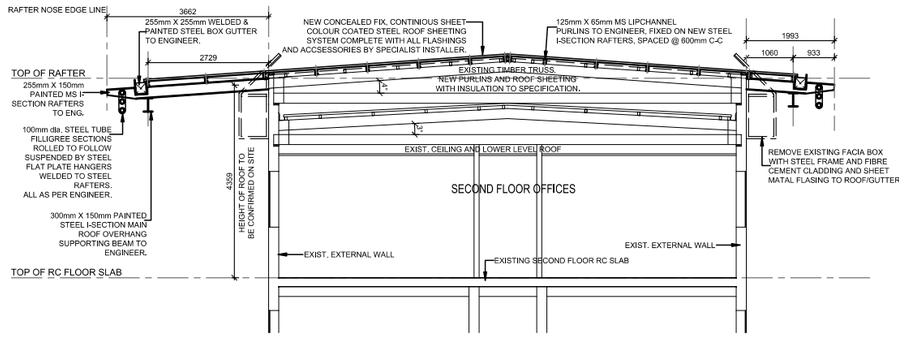
EDI.NR	JOB No.	TYPE	SEQ.No.	REV.



BUILDING A - EXISTING OFFICE WING
SECTION 1.1
SCALE 1:50



BUILDING A - EXISTING OFFICE WING
SECTION 1
SCALE 1:50



BUILDING A - EXISTING OFFICE WING
SECTION 2
SCALE 1:50

BUILDING A - EXISTING OFFICE WING
SECTION 3
SCALE 1:50

BUILDING A - EXISTING OFFICE WING
SECTION 4
SCALE 1:50

BUILDING A - EXISTING OFFICE WING
SECTION 5
SCALE 1:50

BUILDING A - EXISTING OFFICE WING
SECTION 6
SCALE 1:50

BUILDING A - EXISTING OFFICE WING
SECTION 6.1
SCALE 1:50

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PROJECT
GREATER TZANEEN MUNICIPALITY
ROOF REPLACEMENT TO SELECTED PORTIONS OF GTM CIVIC CENTRE, ON ERF 169 -TZANEEN

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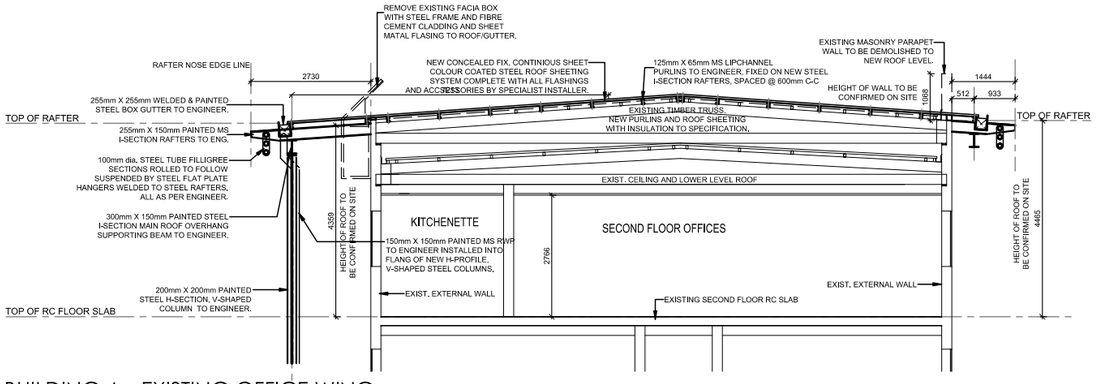
-				DATE DRN	15/01/2021
DESIGNED	HS		DATE	SCALE	1:50

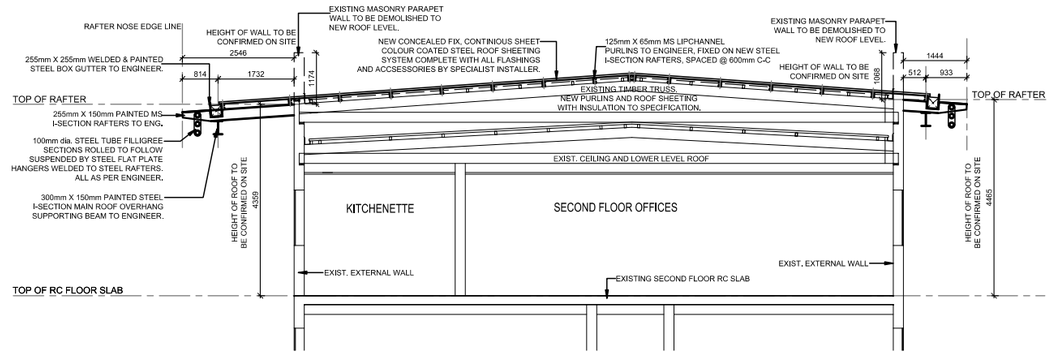
DRAWING TITLE:
ROOF SECTIONS:
SECTIONS 1 - 6.1

DRAWING NUMBER
POL-533-ROOF A/B/F

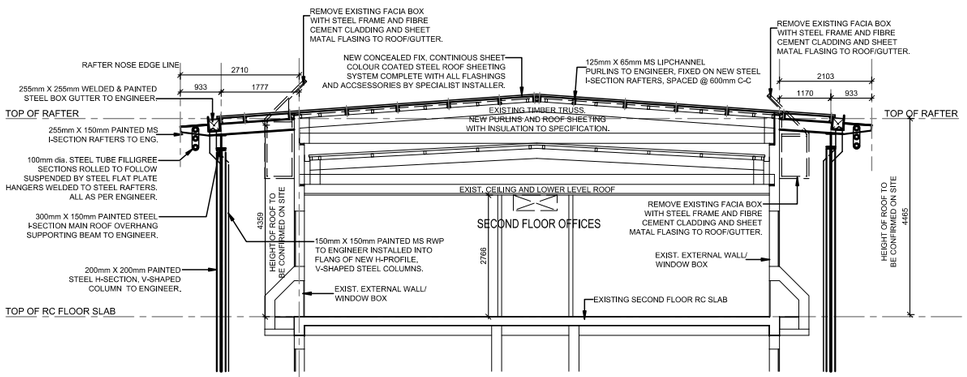
ISSUER | JOB No. | TYPE | SEQ No. | REV



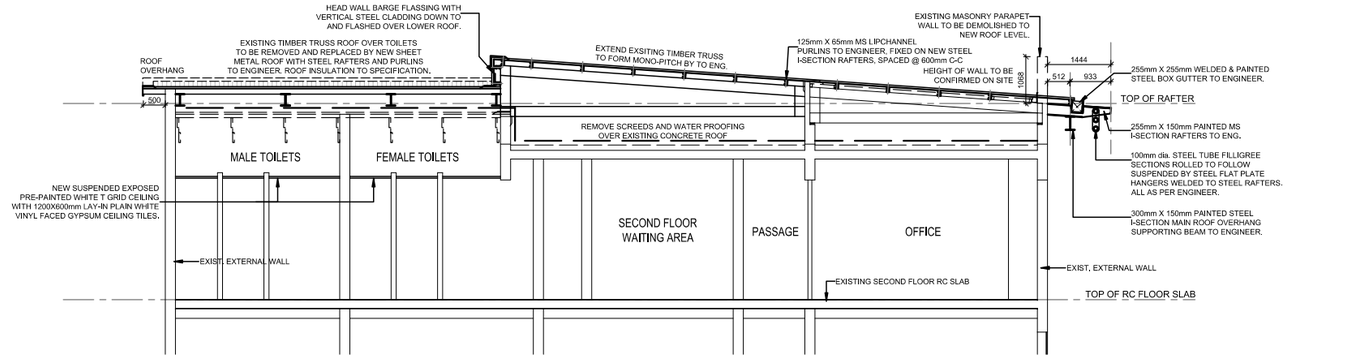
BUILDING A - EXISTING OFFICE WING
SECTION 7
SCALE 1:50



BUILDING A - EXISTING OFFICE WING
SECTION 7.1
SCALE 1:50



BUILDING A - EXISTING OFFICE WING
SECTION 8
SCALE 1:50



BUILDING A - EXISTING OFFICE WING
SECTION 9
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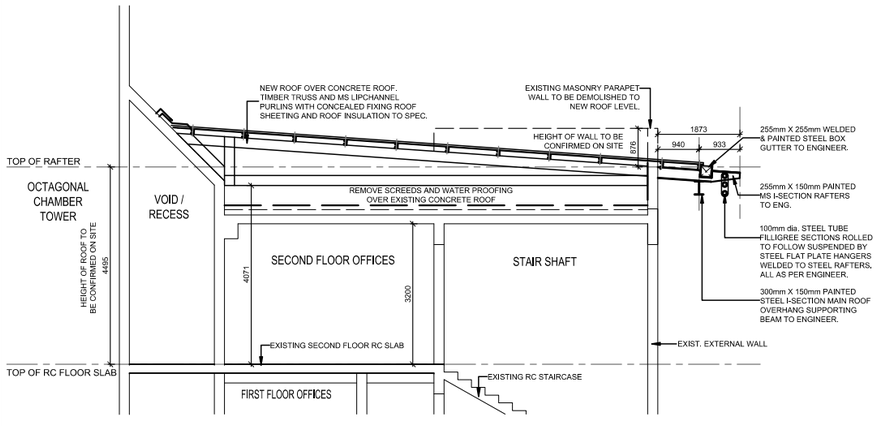
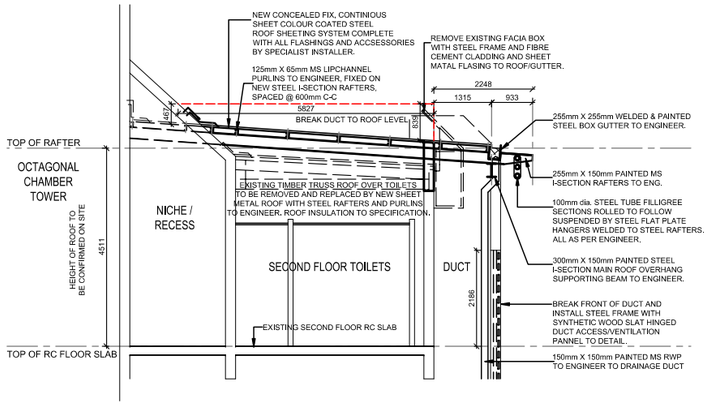
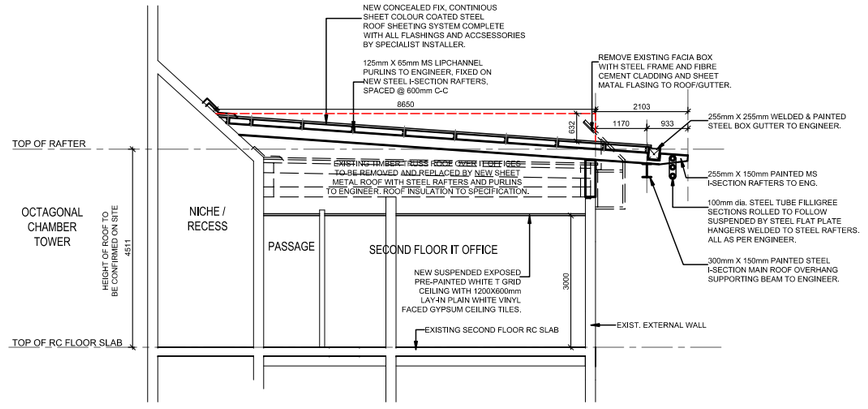


BUILDING A - EXISTING OFFICE WING
SECTION 10
SCALE 1:50



BUILDING A - EXISTING OFFICE WING
SECTION 12
SCALE 1:50



BUILDING A - EXISTING OFFICE WING
SECTION 13
SCALE 1:50

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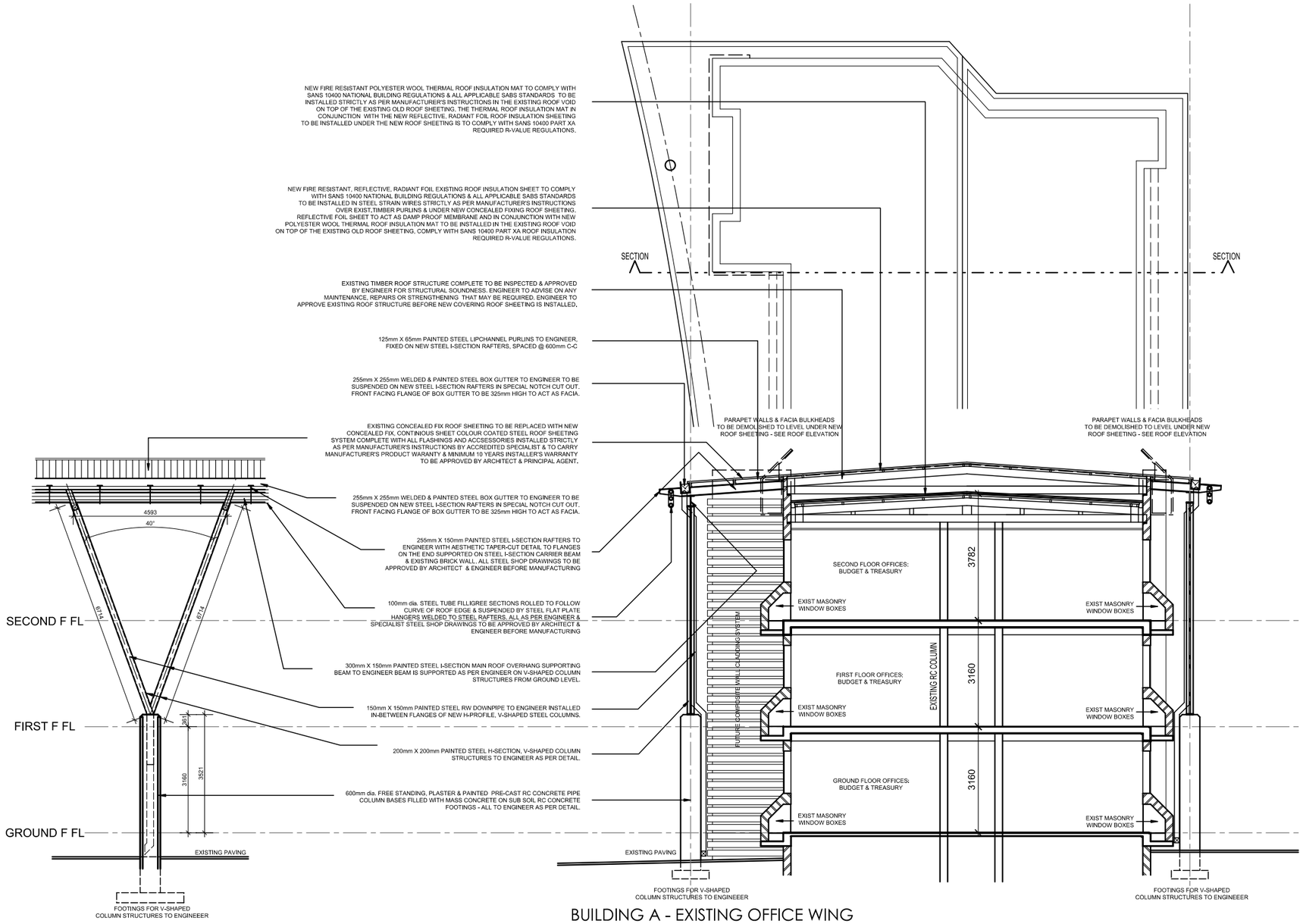
PROJECT: GREATER TZANEEN MUNICIPALITY
ROOF REPLACEMENT TO SELECTED PORTIONS OF GTM CIVIC CENTRE, ON ERF 169 -TZANEEN

DRAWING TITLE: ROOF SECTIONS: SECTIONS 7 - 13

	BY	CHECKED	APPROVED	PAPER SIZE	A0
DRAWN	HS		SIGN		
-				DATE DRN	15/01/2021
DESIGNED	HS		DATE	SCALE	1:50

DRAWING NUMBER: POL-533-ROOF C/D/E

ISSUER | JOB NO. | TYPE | SEQ NO. | REV.



BUILDING A - EXISTING OFFICE WING
TYPICAL CROSS SECTION
SCALE 1:50

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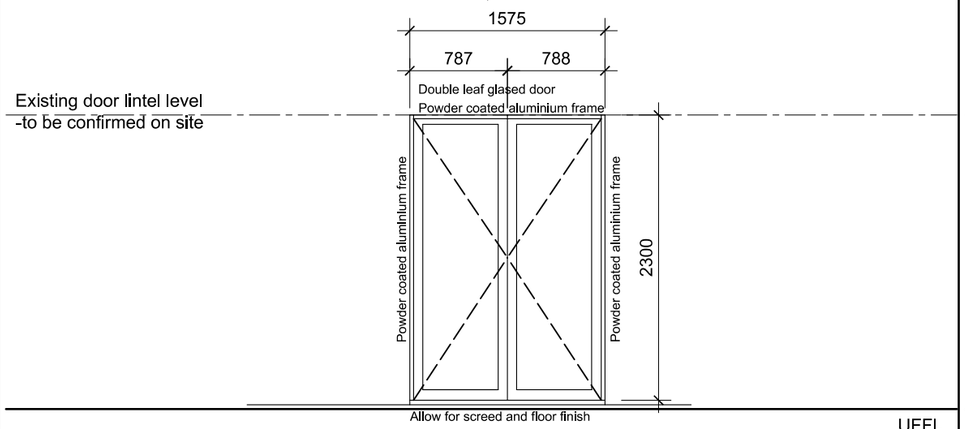
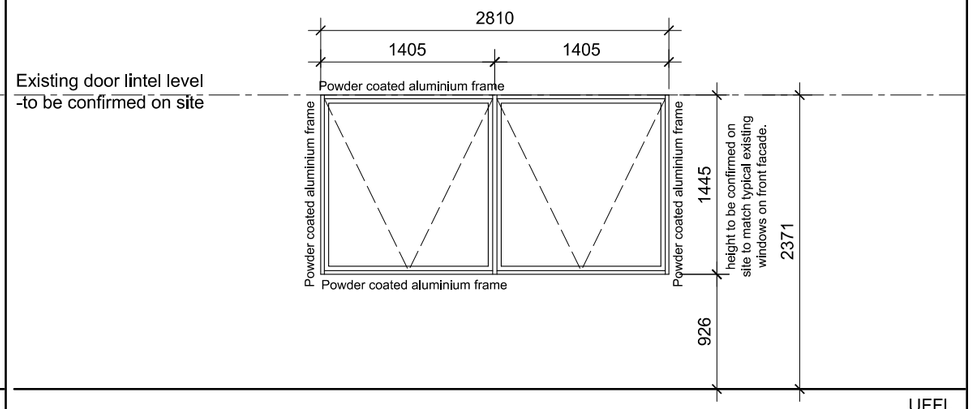
PROJECT
GREATER TZANEEN MUNICIPALITY
ROOF REPLACEMENT TO SELECTED PORTIONS OF GTM CIVIC CENTRE, ON ERF 169 -TZANEEN

	BY	CHECKED	APPROVED	PAPER SIZE	A0
DRAWN	HS				
-			SIGN		
DESIGNED	HS		DATE	DATE DRN	15/01/2021
				SCALE	1:50

DRAWING TITLE:
TYPICAL ROOF OVERHANG AND 'TREE' COLUMN

DRAWING NUMBER
POL-533-ROOF A2_ REV -

ISSUER | JOB No. | TYPE | SEQ No. | REV.

SHOPFRONT	BR DOOR 1	BR WINDOW 1
QUANTITY	1	1
LOCATION	NEW BOARD ROOM - SECOND FLOOR	NEW BOARD ROOM - SECOND FLOOR
ELEVATION	Shopfront/door evelation (Opening side - Into board room) 	Shopfront evelation (Outside) 
GLAZING	GSA Smartglass™ Intruderprufe® clear laminated safety glass, glazing system. Glazing system to comply with SANS 1263 part 1, 2 or 3. Glass to be permanently marked on each sheet. Marking to be visible after installation, glazed in accordance with NBR N schedule 1 and SABS 0137. 'SAND BLASTED/FROSTED' VINYL TO INSIDE OF SHOPFRONT BY OTHER	GSA Smartglass™ Intruderprufe® clear laminated safety glass, glazing system. Glazing system to comply with SANS 1263 part 1, 2 or 3. Glass to be permanently marked on each sheet. Marking to be visible after installation, glazed in accordance with NBR N schedule 1 and SABS 0137.
FRAME	Purpose made aluminium Clipfront 44 system, by Wispeco, or similar approved, to SABS 999-1998 grade AA 20 and AAMSA standards. Finish: Matt black powder coating, code ANP 39005. Check dimensions on site before manufacturing. Contractor's shop drawings to be approved by architect.	Purpose made aluminium Clipfront 44 system, by Wispeco, or similar approved, to SABS 999-1998 grade AA 20 and AAMSA standards. Two top-hung opening panes. Finish: Matt black powder coating, code ANP 39005. Check dimension on site before manufacturing. Contractor's shop drawings to be approved by architect.
IRONMONGERY	3 x Stainless steel sinkless hinge, 100x76x2mm (QS4441 by QS Doorware or similar TO BE APPROIVED) 2 x Stainless steel mitred T handle, 25x350x400mm (QS2702BTB by QS Doorware or similar TO BE APPROIVED) 1 x Stainless steel narrow cylinder escutcheons (QS4405 by QS Doorware or similar TO BE APPROIVED) 1 x Stainless steel narrow style rollerbolt and deadlock, 35mm backset, 85mm centre (QS8535/3 by QS Doorware or similar TO BE APPROIVED) 2 x Stainless steel hooded doorstop (QS4422 by QS Doorware or similar TO BE APPROIVED) 1 x Stainless steel dust excluding socket (QS4492 by QS Doorware or similar TO BE APPROIVED) 1 x 60mm satin nickel cylinder with 3 keys (QS1103SN by QS Doorware or similar TO BE APPROIVED)	N/A
NOTE	The design responsibility and structural integrity of the shopfront frame and glazing lies with the contractor. The proposed shopfront elevation above serves as a guide only. The contractor to inform the architect if proposed panel division is not structurally feasible.	The design responsibility and structural integrity of the shopfront frame and glazing lies with the contractor. The proposed shopfront elevation above serves as a guide only. The contractor to inform the architect if proposed panel division is not structurally feasible.

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ASSOCIATED RAWINGS

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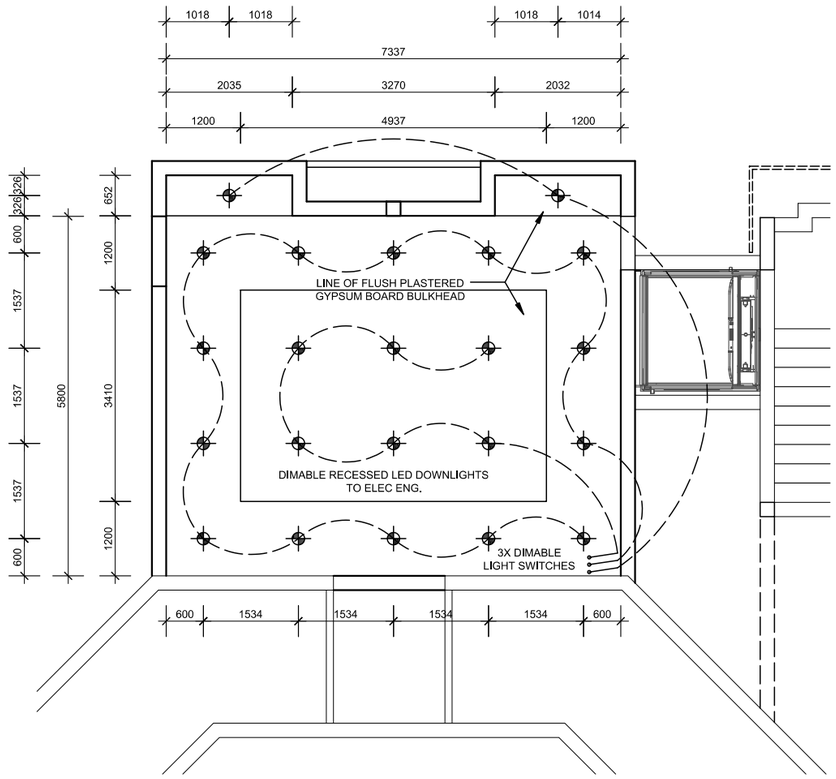
PROJECT
GREATER TZANEEN MUNICIPALITY
ROOF REPLACEMENT TO SELECTED PORTIONS OF GTM CIVIC CENTRE, ON ERF 169 -TZANEEN

	BY	CHECKED	APPROVED	PAPER SIZE	A3
DRAWN	HS				
-			SIGN	DATE DRN	29/01/2021
DESIGNED	HS		DATE	SCALE	NTS

DRAWING TITLE:
NEW SECOND FLOOR BOARDROOM
ALUMINIUM DOOR AND WINDOW SCHEDULE

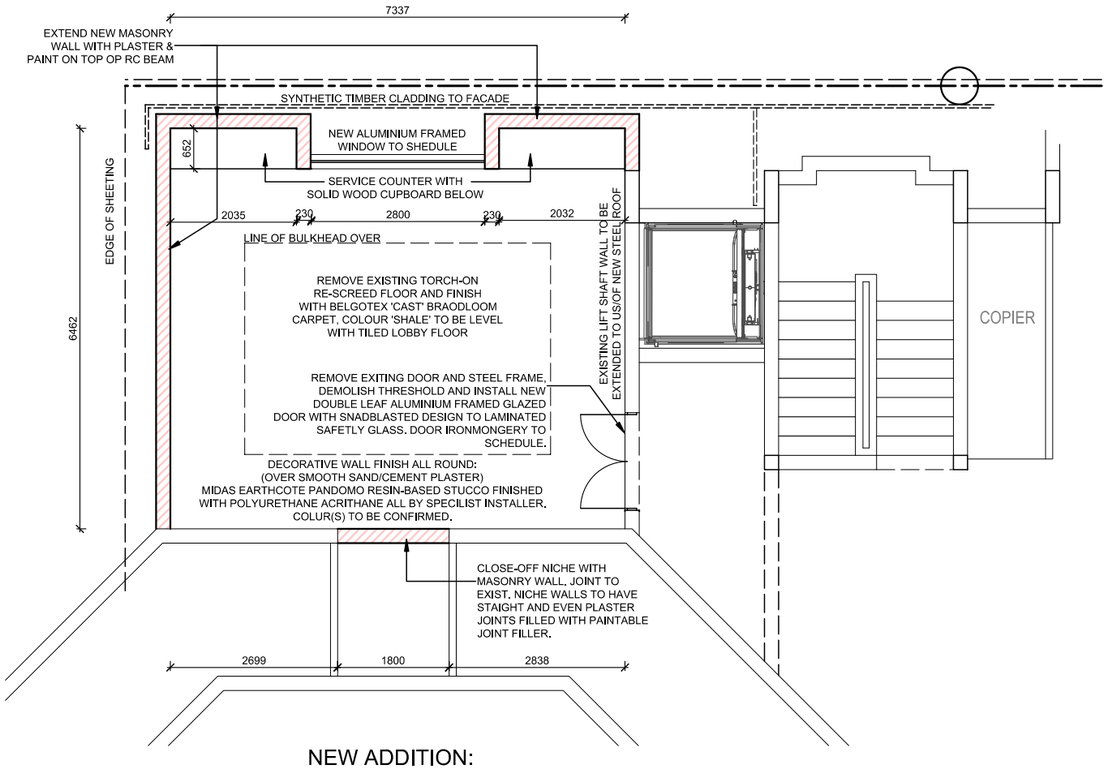
DRAWING NUMBER
POL-533-ROOF 400_ REV -

ISSUER | JOB No. | TYPE | SEQ No. | REV



NEW ADDITION:
EXECUTIVE
BOARDROOM:CEILING & LIGHTING LAYOUT

SCALE 1:50



NEW ADDITION:
EXECUTIVE BOARDROOM: LAYOUT PLAN

SCALE 1:50

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PROJECT: GREATER TZANEEN MUNICIPALITY
ROOF REPLACEMENT TO SELECTED PORTIONS OF GTM CIVIC CENTRE, ON ERF 169 -TZANEEN

	BY	CHECKED	APPROVED	PAPER SIZE	A3
DRAWN	HS				
-			SIGN		
DESIGNED	HS		DATE	DATE DRN	29/01/2021
				SCALE	1:50

DRAWING TITLE: NEW SECOND FLOOR BOARDROOM
FLOOR LAYOUT PLAN
CEILING LAYOUT PLAN

DRAWING NUMBER: POL-533-ROOF102_ REV -

ISSUER | JOB No. | TYPE | SEQ No. | REV

GENERAL NOTES

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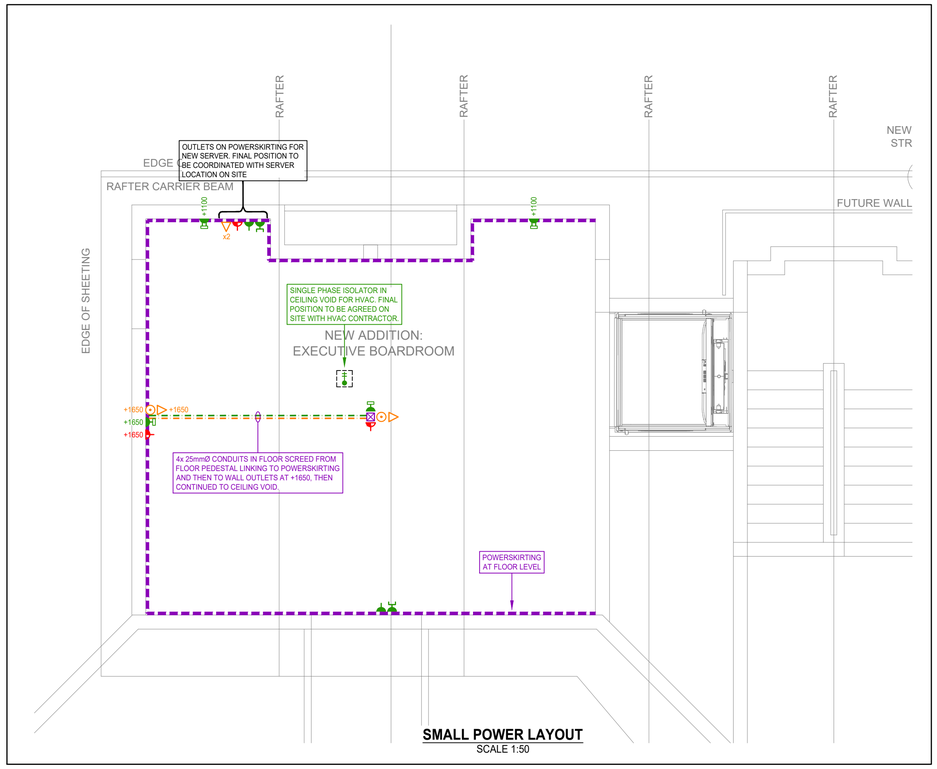
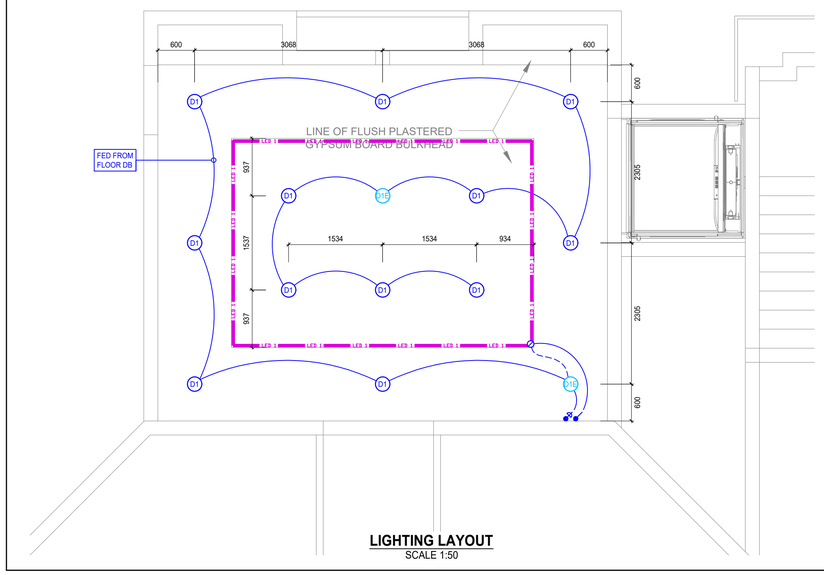
   - SIGNED IN BOTH THE CHECKED AND APPROVED BOXES.
4. THE ELECTRICAL INSTALLATION AND COMPONENTS SHALL BE SELECTED, PROCURED AND INSTALLED STRICTLY IN ACCORDANCE WITH THE OCCUPATIONAL HEALTH AND SAFETY ACT (ACT 85 OF 1993), SANS10142 PART 1 & 2 (THE WIRING OF PREMISES) AND SANS10400 (BUILDING REGULATIONS).
5. LOW VOLTAGE & MEDIUM VOLTAGE SWITCHGEAR, CABLES, ACCESSORIES, ASSEMBLIES, INSTALLATION METHODS AND MATERIALS ARE TO BE FULLY SANS COMPLIANT AND ARE TO BARE THE SABS STAMP OF APPROVAL WHERE REQUIRED.
6. ALL DISTRIBUTION BOARDS AND ELECTRICAL PANELS SHALL BE MANUFACTURED TO SANS 1973 PARTS 1 & 3
7. 2x 16mmØ HOLES AT A MINIMUM OF 30mm APART AT THE BASE OF THE POST ON THE LIFT PIT SIDE, FINAL POSITION TO BE DETERMINED ON SITE WITH ELECTRICAL CONTRACTOR.

LEGEND

	SINGLE PHASE ISOLATOR IN CEILING VOID
	16A NORMAL SINGLE SOCKET OUTLET ON POWERSKIRTING
	NEW ZA SOCKET OUTLET (SANS 164-2) ON POWERSKIRTING
	16A 3-PIN SINGLE SWITCHED SOCKET + NEW ZA SOCKET (SANS 164-2) COMBO
	16A 3-PIN DOUBLE SWITCHED SOCKET + NEW ZA SOCKET (SANS 164-2) COMBO
	16A RED DEDICATED 3-PIN SINGLE SWITCHED SOCKET OUTLET
D1	12W LED DIMMABLE DOWNLIGHT (COB) C/W DIE CAST ALUMINIUM BODY, L90B10, CRI>85, 4000K. 1300Lm, 50 000HRS. COLOUR = WHITE, CUTOUT = 68mmØ — WHITE
D1E	EMERGENCY 12W LED DOWNLIGHT (COB) C/W DIE CAST ALUMINIUM BODY, L90B10, CRI>85, 4000K, 1300Lm, 50 000HRS. COLOUR = WHITE, CUTOUT = 68mm DIAM. FITTING WITH INTEGRAL BATTERY PACK RATED FOR MINIMUM OF 1HR OR 3HR. — WHITE
	DIMMER LIGHT SWITCH AT +1200mm AFFL
	SINGLE LEVER LIGHT SWITCH AT +1200mm AFFL
LED 1	LINEAR LED COVE LIGHT, 12W/m, 4000K, C/W OPAL DIFFUSER AND CONTROL GEAR
	OUTLET IN CEILING FOR COVE LIGHTS
	HDMI OUTLET
	DATA OUTLET
	FLOOR PEDESTAL
	2 COMPARTMENT 2 COVER POWER SKIRTING AT FLOOR LEVEL



SMALL POWER LAYOUT
SCALE 1:50



LIGHTING LAYOUT
SCALE 1:50

Scale 1:50

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Untitled

REVISIONS

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ASSOCIATED DRAWINGS

DRAWING NUMBER	DRAWING DESCRIPTION

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PROJECT:
GREATER TZANEEN MUNICIPALITY
MUNICIPAL COMPLEX EXTENSION

	BY	CHECKED	APPROVED		PAPER SIZE	A1
DRAWN	HS		SIGN			
-					DATE DRN	15/01/2021
DESIGNED	HS		DATE		SCALE	1:50

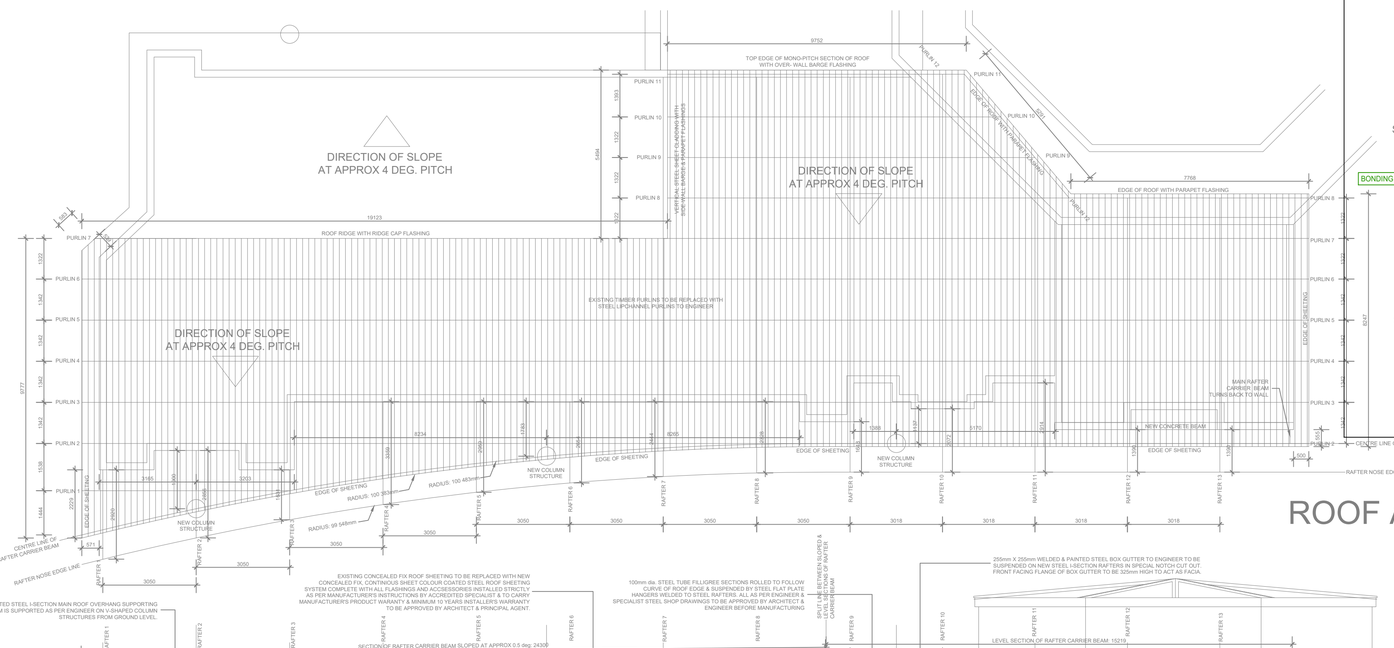
DRAWING TITLE:
NEW BOARDROOM
LIGHTING AND SMALL POWER INSTALLATION

DRAWING NUMBER
ACE - 1454 - DWG - 00 - 600/10 - T
ISSUER | JOB No. | TYPE | SITE/ PRJCT | SEQ No. | REV

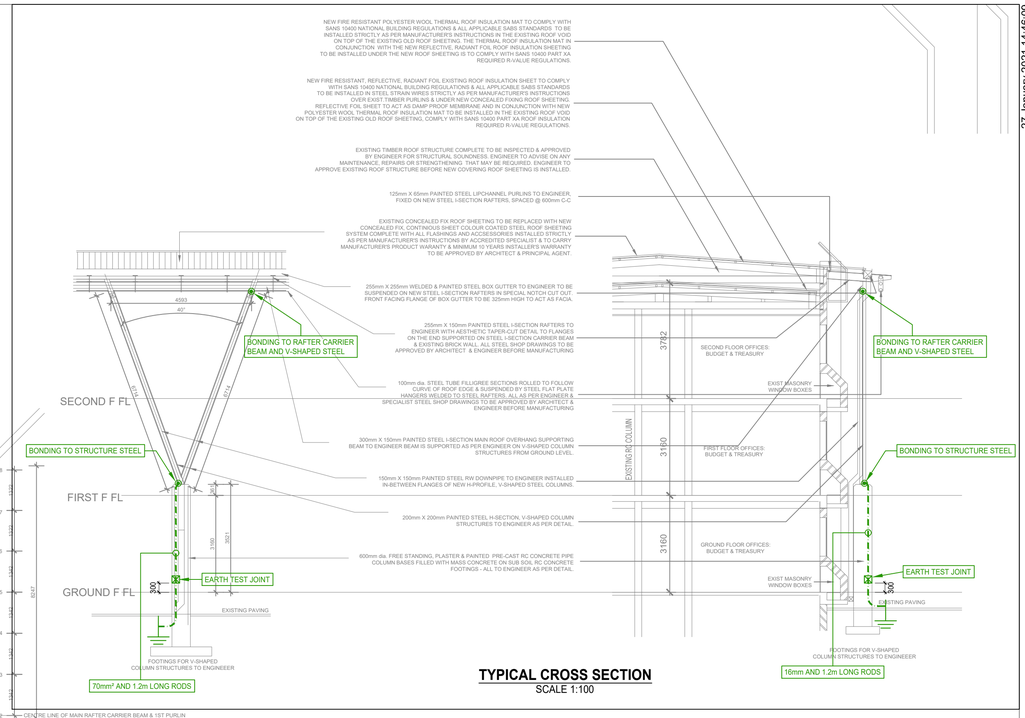
27 January 2021 15:12:14

P:\Dropbox (ACE)\18054 Tzaneen Civic Centre\Drawings\1 Electrical\3 Issued\21-01-27 - For Tender\DWG\1454-600-10 - Rev.T - New Boardroom - Lighting And Small Power Layout - A1.dwg

27 January 2021 14:46:09



ROOF A



TYPICAL CROSS SECTION
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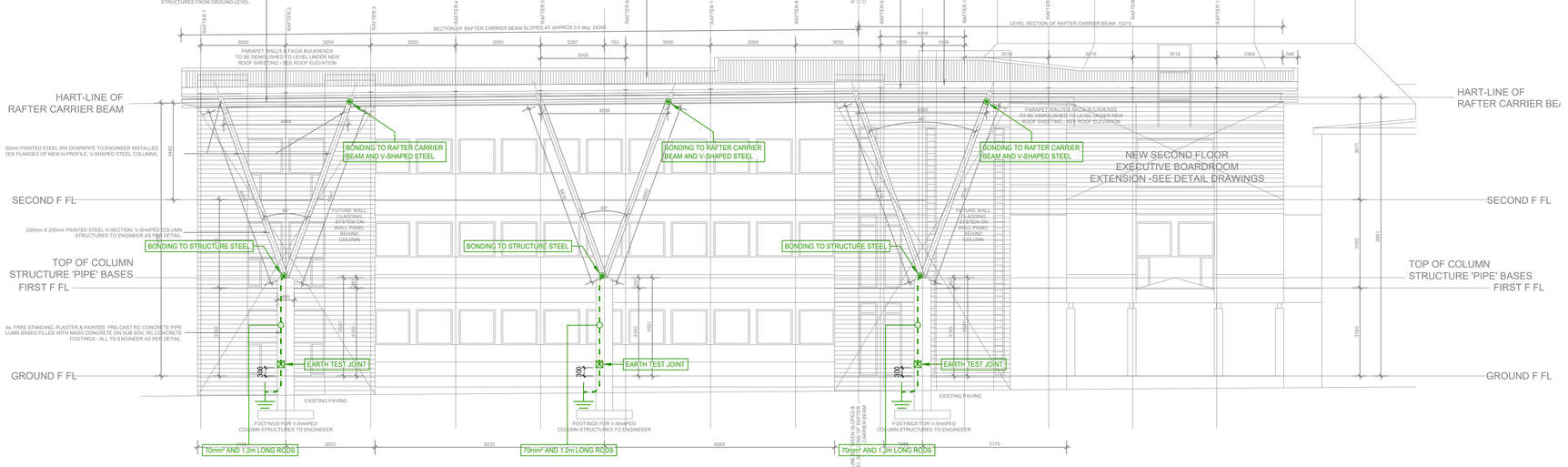

ELEVATION A
SCALE 1:100

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5. LOW VOLTAGE & MEDIUM VOLTAGE SWITCHGEAR, CABLES, ACCESSORIES, ASSEMBLIES, INSTALLATION METHODS AND MATERIALS ARE TO BE FULLY SANS COMPLIANT AND ARE TO BARE THE SABS STAMP OF APPROVAL WHERE REQUIRED.
6. 2x 16mmØ HOLES AT A MINIMUM OF 30mm APART AT THE BASE OF THE POST ON THE LIFT PIT SIDE, FINAL POSITION TO BE DETERMINED ON SITE WITH ELECTRICAL CONTRACTOR.

GENERAL NOTES:

1. ELECTRICAL DESIGN & INSTALLATION TO BE STRICTLY IN ACCORDANCE WITH THE SANS REQUIREMENTS INCLUDING SANS 10142 PART 1 & THE OHS ACT.
2. ALL DISTRIBUTION BOARDS AND ELECTRICAL PANELS SHALL BE MANUFACTURED TO SANS 1973 PARTS 1 & 3

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Scale 1:50

REVISIONS

MARK	BY	DATE	REVISION DESCRIPTION
T	D.A.	27.01.21	ISSUED FOR TENDER

ASSOCIATED DRAWINGS

DRAWING NUMBER	DRAWING DESCRIPTION

Greater Tzaneen Local Municipality
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Fax: (015) 307-8049

GREEN BUILDING COUNCIL SOUTH AFRICA MEMBER 2019

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PROJECT:
GREATER TZANEEN MUNICIPALITY
MUNICIPAL COMPLEX EXTENSION

DRAWING TITLE:
ROOF LEVEL ELEVATION A
LIGHTNING PROTECTION INSTALLATION

	BY	CHECKED	APPROVED	PAPER SIZE	A1
DRAWN	HS		SIGN		
-				DATE DRN	15/01/2021
DESIGNED	HS		DATE	SCALE	1:50

DRAWING NUMBER
ACE - 1454 - DWG - 00 - 600/11 - T
ISSUER | JOB No. | TYPE | SITE/ PRJCT | SEQ No. | REV

P:\Dropbox (ACE)\18054 Tzaneen Civic Centre\Drawings\1 Electrical\3 Issued\21-01-27 - For Tender\1454-600-11 - Rev.T - Roof Level Elevation A - Lightning Protection Layout - A1.dwg

27 January 2021 14:47:04

GENERAL NOTES

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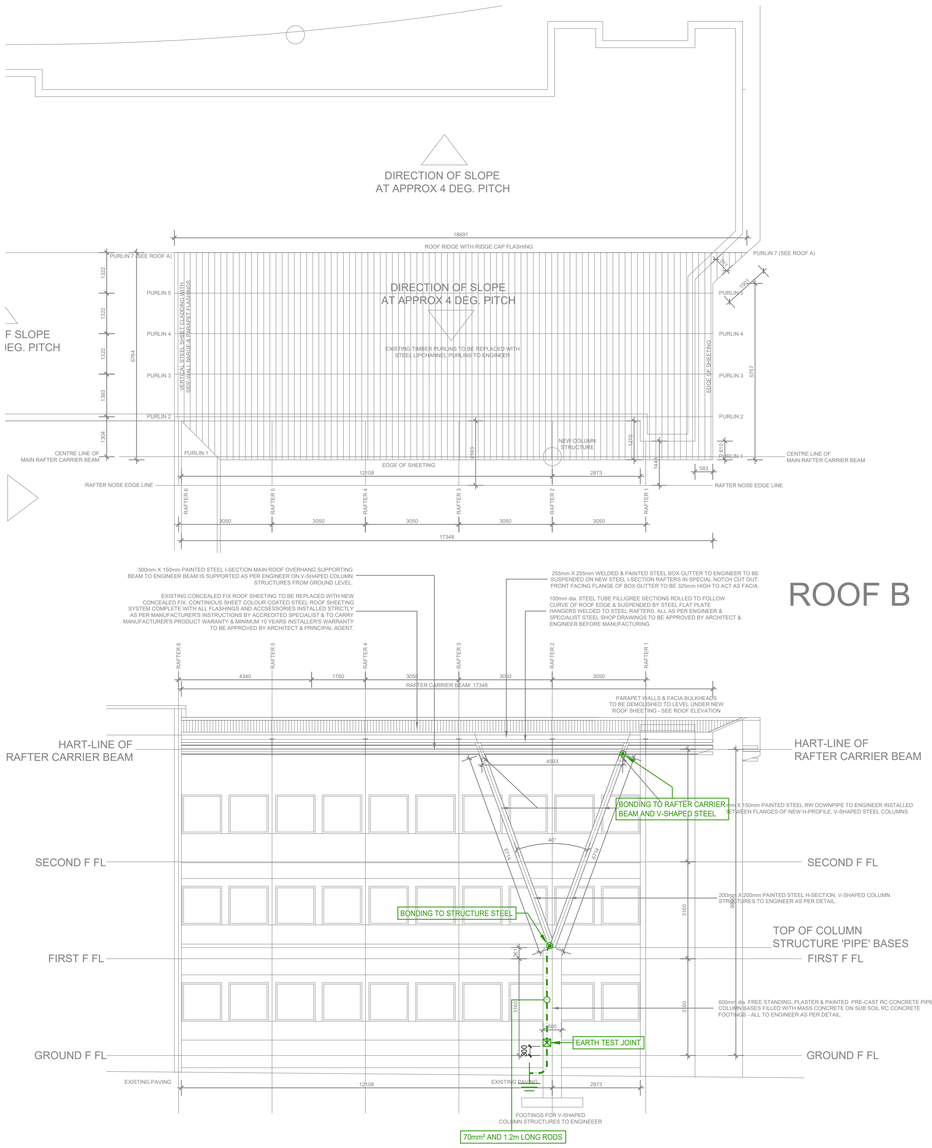
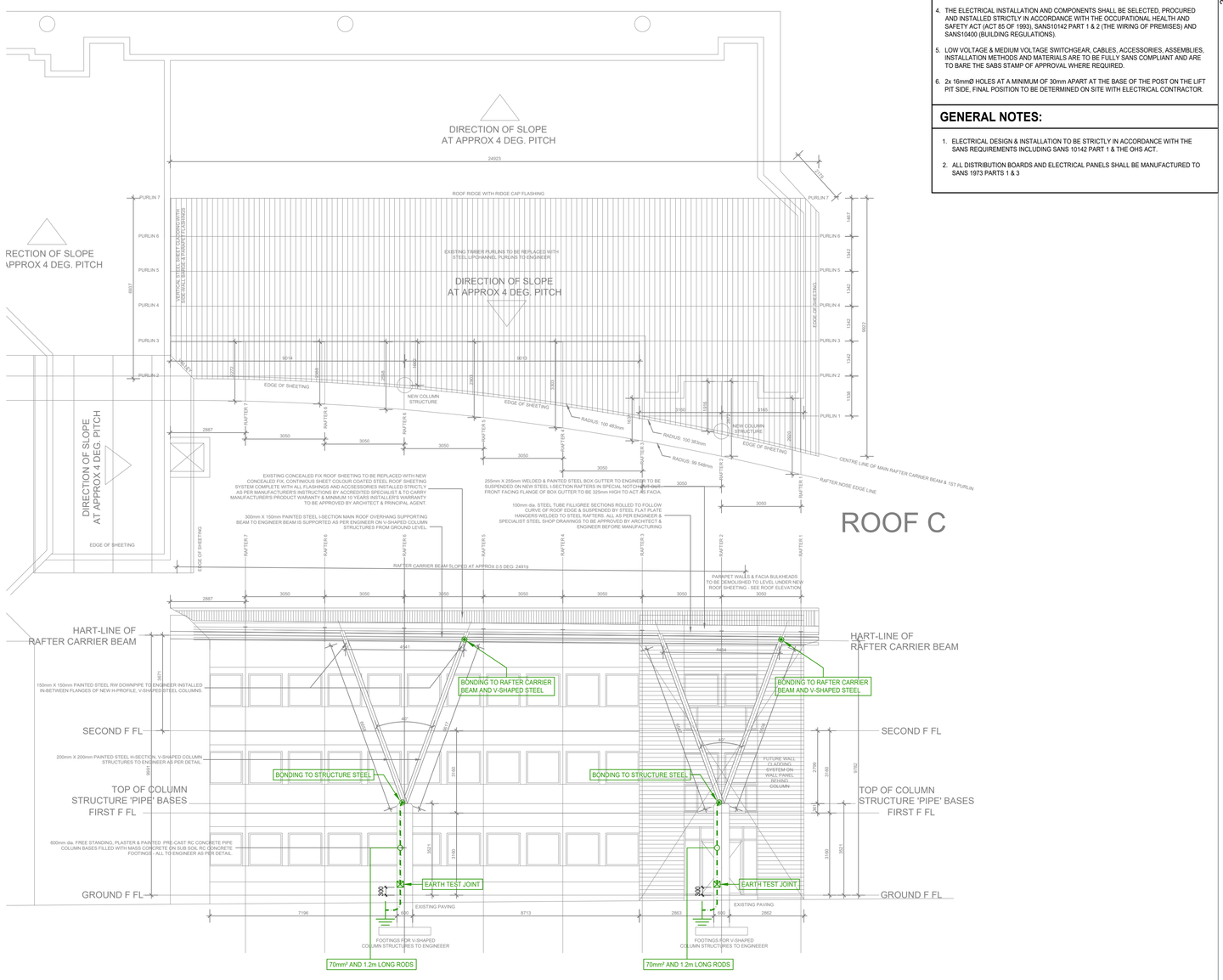


ROOF B

ELEVATION B
SCALE 1:100



ROOF C

ELEVATION C
SCALE 1:100

Scale 1:50

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ASSOCIATED DRAWINGS

DRAWING NUMBER	DRAWING DESCRIPTION

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GREEN BUILDING COUNCIL SOUTH AFRICA MEMBER 2017

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PROJECT:
GREATER TZANEEN MUNICIPALITY
MUNICIPAL COMPLEX EXTENSION

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-					DATE DRN	15/01/2021
DESIGNED	HS		DATE		SCALE	1:50

DRAWING TITLE:
ROOF LEVEL ELEVATIONS B & C
LIGHTNING PROTECTION INSTALLATION

DRAWING NUMBER
ACE - 1454 - DWG - 00 - 600/12 - T
ISSUER | JOB No. | TYPE | SITE/ PRJCT | SEQ No. | REV

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27 January 2021 14:46:32

GENERAL NOTES

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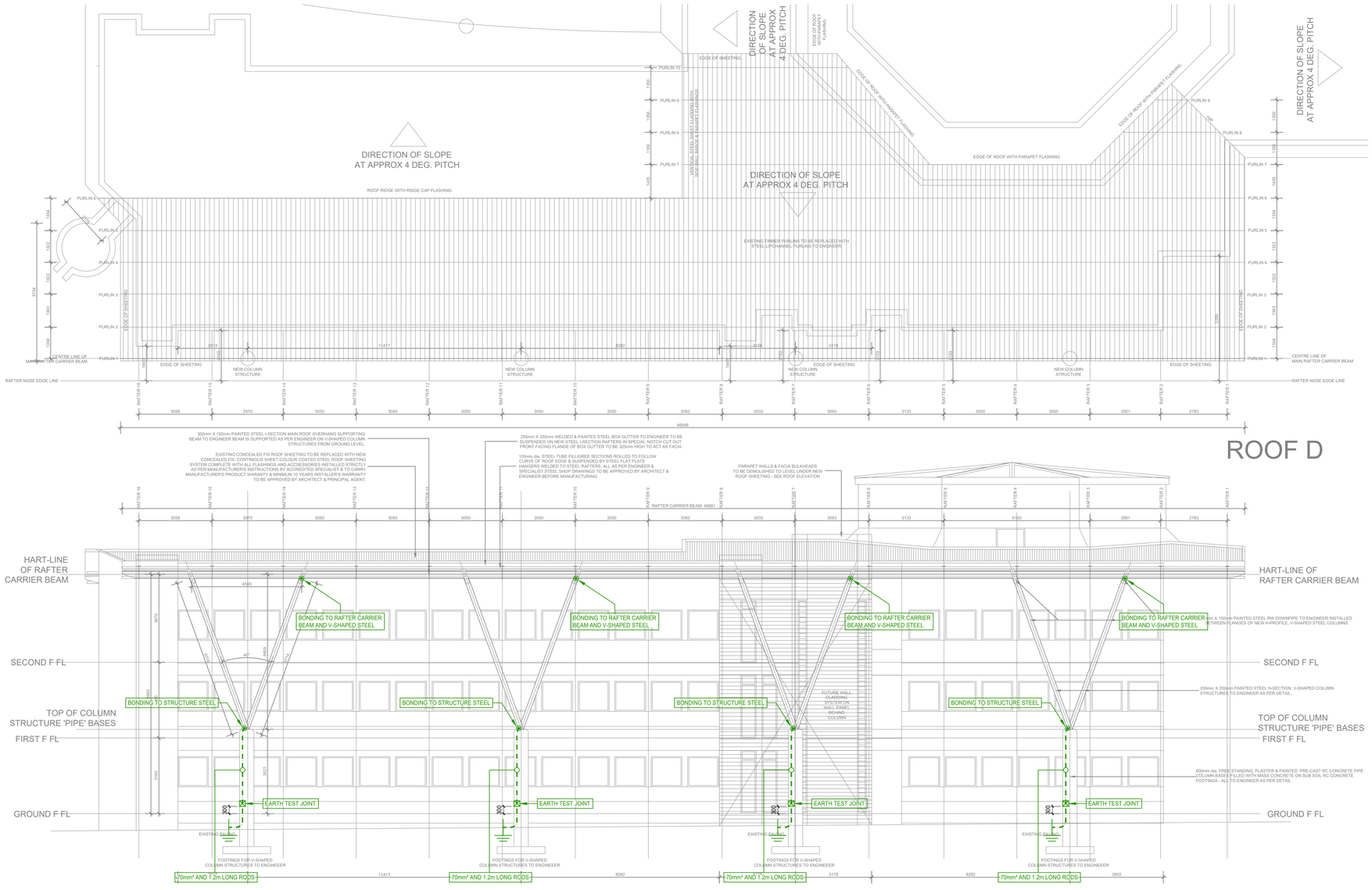

ELEVATION D
SCALE 1:100

Scale 1:50

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PROJECT:
GREATER TZANEEN MUNICIPALITY
MUNICIPAL COMPLEX EXTENSION

DRAWING TITLE:
ROOF LEVEL ELEVATION D
LIGHTNING PROTECTION INSTALLATION

	BY	CHECKED	APPROVED	PAPER SIZE	A1
DRAWN	HS		SIGN		
-				DATE DRN	15/01/2021
DESIGNED	HS		DATE	SCALE	1:50

DRAWING NUMBER
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ISSUER | JOB No. | TYPE | SITE/ PRJCT | SEQ No. | REV

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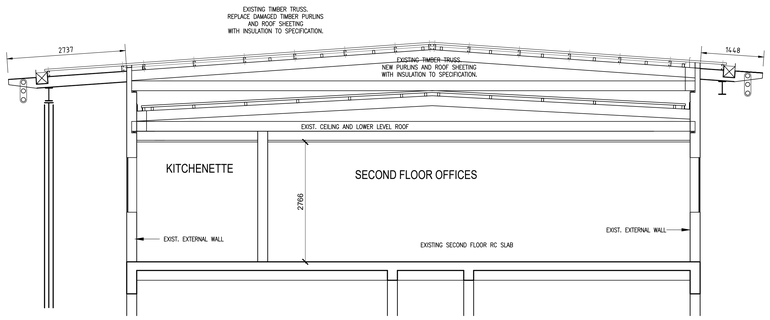

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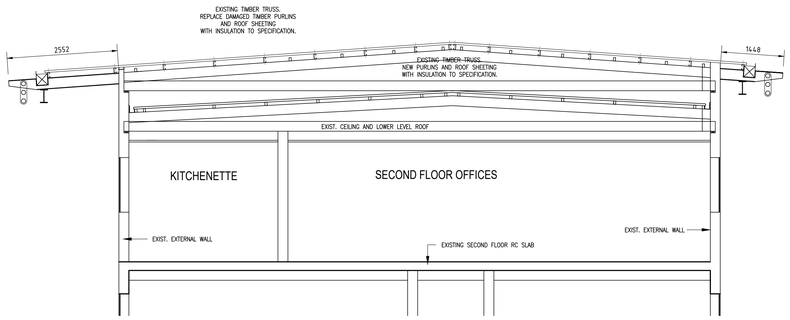

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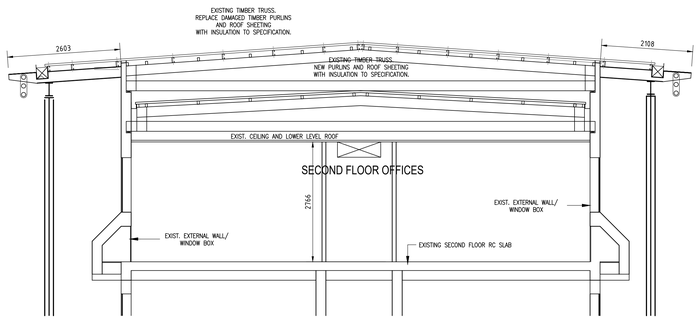

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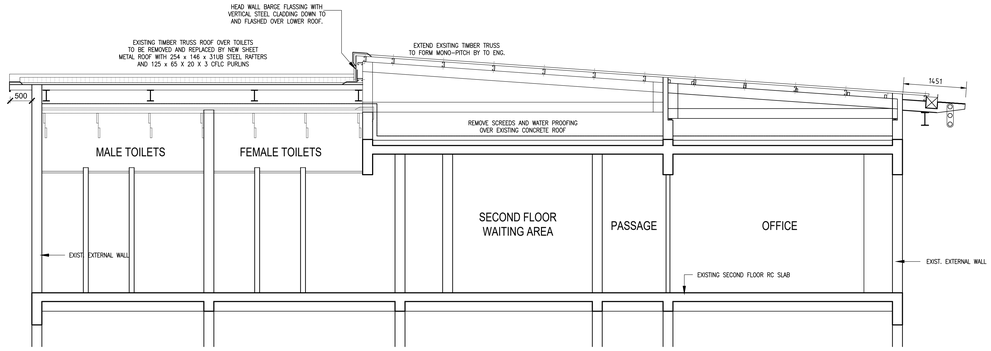

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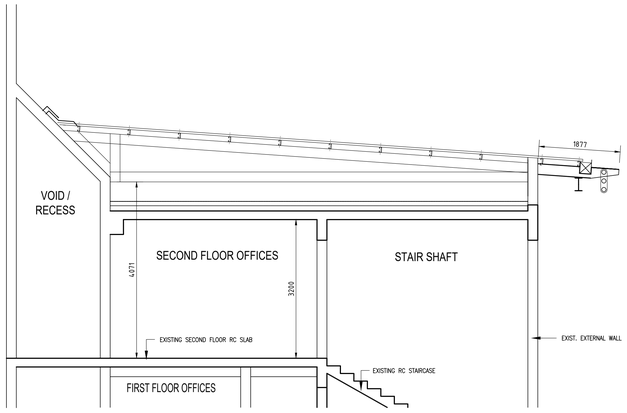

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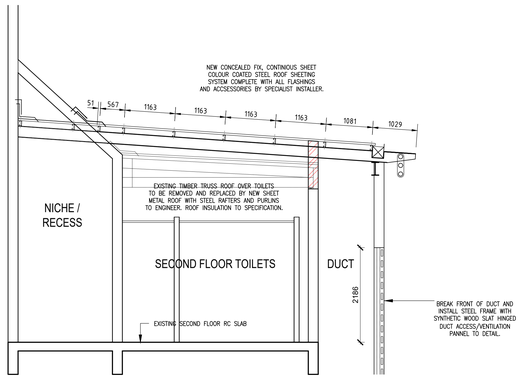

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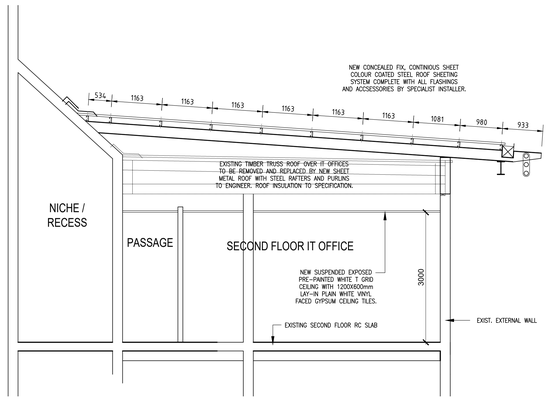

SECTION Q-Q
SCALE 1:50

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ASSOCIATED DRAWINGS

DRAWING NUMBER	DRAWING DESCRIPTION

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GREEN SCOVENGER MEMBER 2020
CESA Consulting Engineers South Africa
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PROJECT:
GREATER TZANEEN MUNICIPALITY
MUNICIPAL COMPLEX EXTENSION

DRAWING TITTLE:
MUNICIPAL OFFICES
SECTIONS AND DETAILS

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DRAWN	JND				
CHECKED		SIGN		DATE DRN	JAN 2021
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MSW-1454-DWG-00- 212 -00
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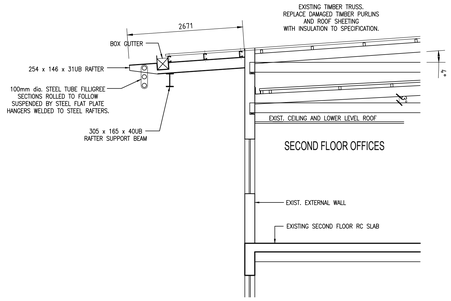

SECTION A-A
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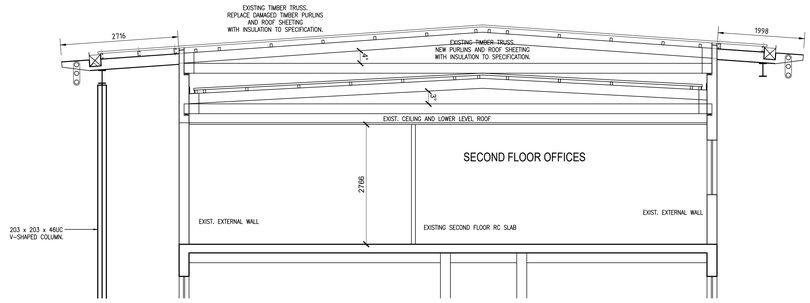

SECTION B-B
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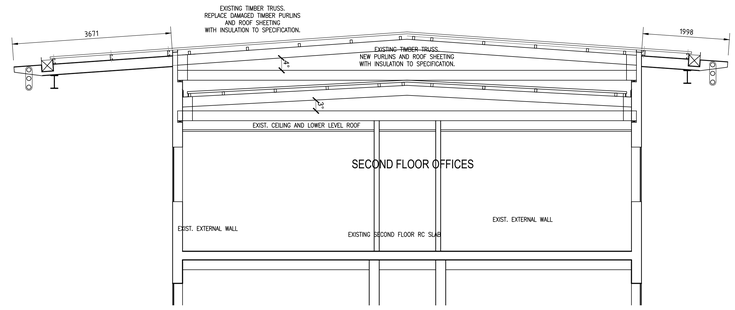

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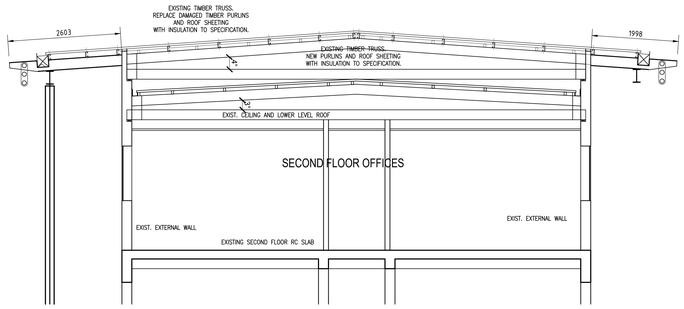

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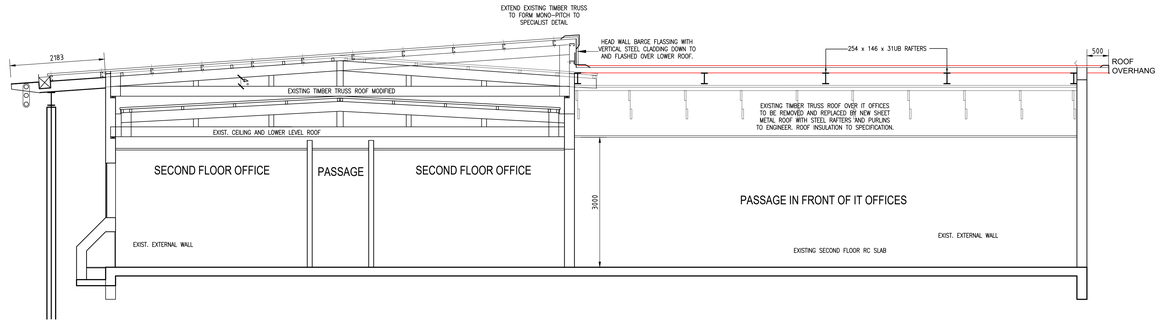

SECTION E-E
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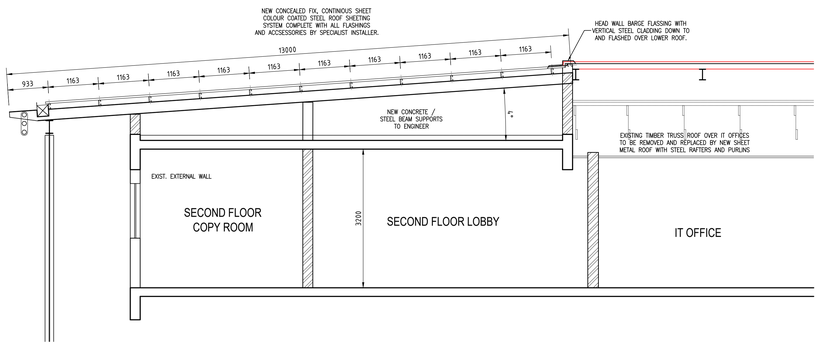

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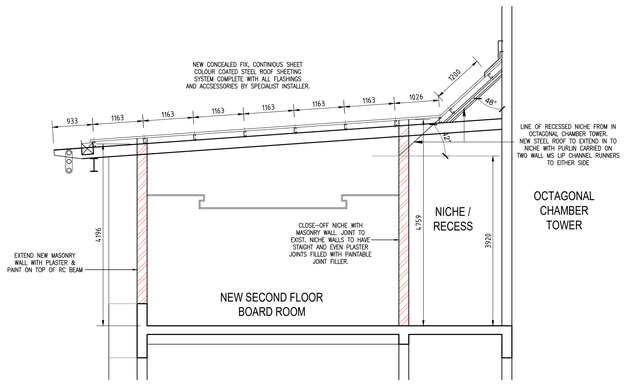

SECTION G-G
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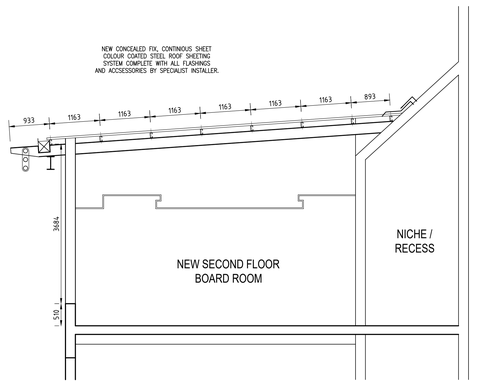

SECTION H-H
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ASSOCIATED DRAWINGS

DRAWING NUMBER	DRAWING DESCRIPTION

CLIENT

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GREEN BUILDING COUNCIL MEMBER 2009

CESA

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PROJECT:
GREATER TZANEEN MUNICIPALITY
MUNICIPAL COMPLEX EXTENSION

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CHECKED				DATE DRN	JAN 2021
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Friday, January 22, 2021 12:16:06 PM

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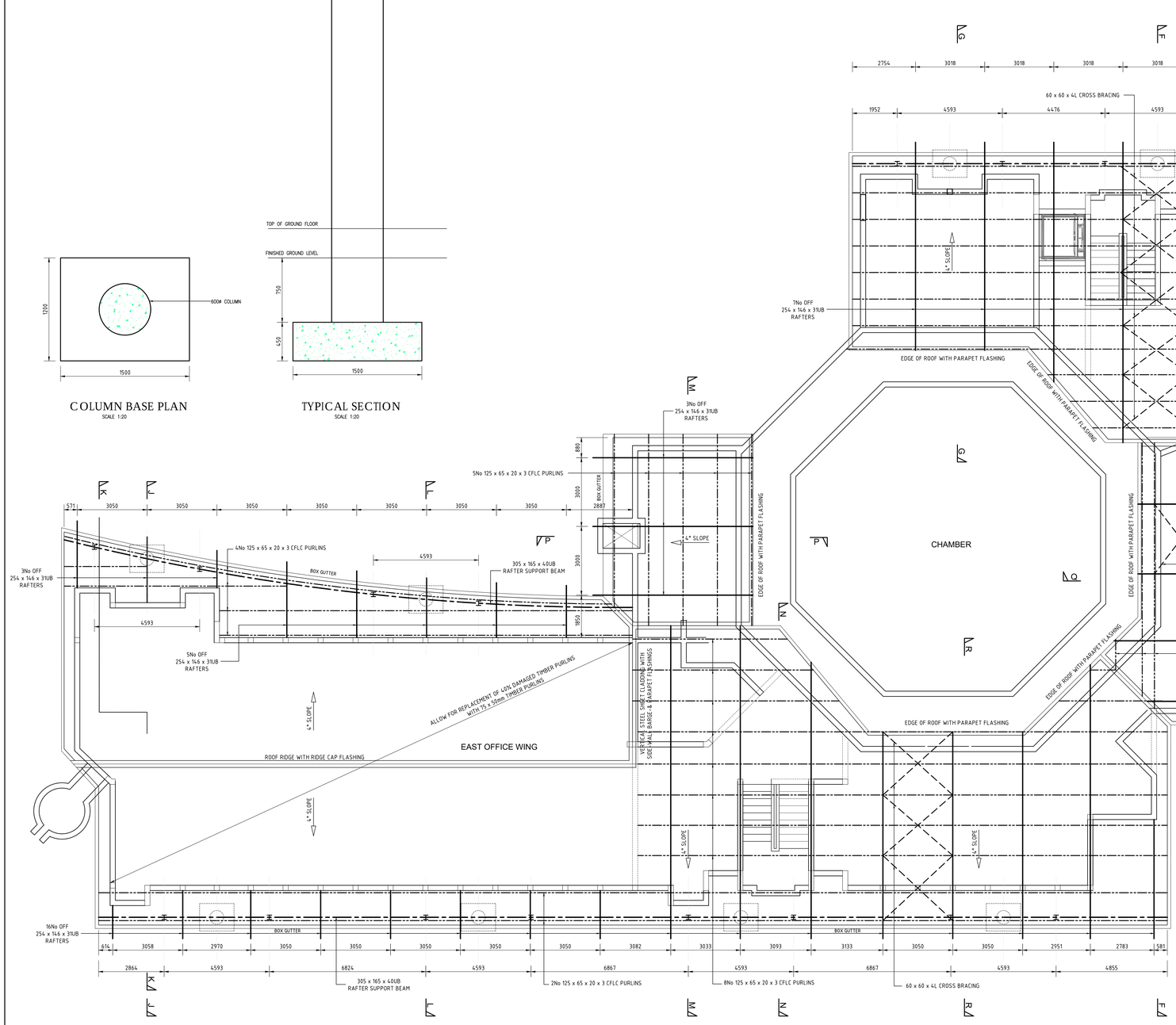
COLUMN BASE PLAN
SCALE 1:20

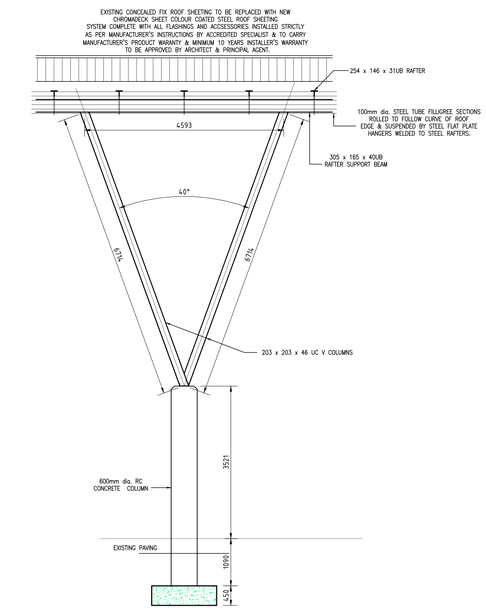
TYPICAL SECTION
SCALE 1:20



ROOF LAYOUT PLAN
SCALE 1:75

STEEL NOTES

1. ALL STEEL WORK TO COMPLY WITH SANS 2001.CS1& SANS 1921-3.
2. ALL WELDS 8MM CONTINUOUS FILLET WELDS UNLESS NOTED OTHERWISE.
3. ALL BUTT WELDS FULL PENETRATION WELDS UNLESS NOTED OTHERWISE.
4. BOLTS AND NUTS SHALL BE TO SABS 094, 1355 AND 136 U.N.O MINIMUM BOLT SIZE TO BE 16MM.
5. SLOTTING OF HOLES, CUTTING ETC WITH OXYACETYLENE EQUIPMENT WILL NOT BE ALLOWED.
6. SUBSTITUTION OF SECTIONS WILL WILL ONLY BE ALLOWED WITH ENGINEER'S APPROVAL.
7. STEEL FABRICATOR TO CHECK ALL SETTING OUT DIMENSIONS AND LEVELS PRIOR TO FABRICATION.
8. SHOP DRAWINGS MUST BE APPROVED BY THE ENGINEER PRIOR TO FABRICATION.
9. SITE MEASUREMENTS MUST BE TAKEN BEFORE MANUFACTURE OF THE MEMBERS.
10. ANY DISCREPANCIES OR VARIATIONS FROM THE ENGINEER OR ARCHITECT'S DRAWING MUST BE REPORTED.
11. DIMENSIONAL ACCURACY OF WORKSHOP DRAWINGS, DESIGN OF CONNECTIONS, SPLICES ETC PROVISION OF TEMPORARY BRACING AND ANY TEMPORARY WORKS NECESSARY TO COMPLETE THE PROJECT, WILL BE THE STRUCTURAL STEELWORK SUPPLIER'S RESPONSIBILITY, BUT SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO FABRICATION GUSSETS TO BE 10MM THICKNESS UNLESS NOTED OTHERWISE.
12. SCALING-OFF DIMENSIONS IS NOT PERMITTED, FIGURED DIMENSIONS ONLY TO BE USED.
13. ALL STEEL WORK IS TO BE ACID CLEANED AND PAINTED IN FACTORY ONE COAT EPOXY BASED PRIMER AND TWO COAT GLOSS PAINT AND ONE COAT GLOSS FINISHING COAT ON SITE. STEELWORK TO BE PROTECTED FROM DAMAGE DURING STORAGE, TRANSPORTATION AND ERECTION. USE OF AN APPROVED GALVANIC PAINT FOR TOUCHING UP ON SITE MAY BE PERMITTED.
14. ALL PURLINS AND CLADDING RAILS TO BE PAINTED.
15. PROVIDE WELDED 500MM LONG WALL TIES TO COLUMNS AT BRICK FORCE POSITIONS WHERE THE COLUMN IS EMBEDDED IN THE WALL.
16. ALL LAYOUTS TO BE READ IN CONJUNCTION WITH ANY RELEVANT ARCHITECTURAL, CIVIL,OR OTHER DRAWINGS.
17. ANY ERRORS OR DISCREPANCIES ARE TO BE REPORTED IMMEDIATELY FOR CORRECTION BEFORE WORK IS UNDERTAKEN.



TYPICAL COLUMN
SCALE 1:50

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PROJECT:
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MUNICIPAL COMPLEX EXTENSION

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