

PART 3

C3 SCOPE OF WORK

PART C3: SCOPE OF WORK

PG-01.2 (EC) SCOPE OF WORKS – JBCC 2000 PRINCIPAL BUILDING AGREEMENT (Edition 6.2 of May 2018)

Project title:	HANOVER MAGISTRATE'S OFFICE HERITAGE - REPAIRS AND RENOVATIONS		
Tender / Quotation no:	KIM08/2022	Reference no:	19/2/4/2/2/2374/10

C3. Scope of Works

C3.1 EXTENT OF THE WORKS

Alterations, renovations, refurbishments.

C3.2 ORDER OF THE WORKS

Describe any procedure affecting the sequence of construction or other activities.

Alterations, paintwork, external and electrical works. Tenders to take that work will proceed in two adjacent sites.

C3.3 BUILDINGS OCCUPIED

Describe any specific restrictions with regard to buildings in use.

This will be an active and court proceedings will continue during construction period and the onus is placed on the contractor to plan accordingly.

C3.4 ACCESS

Provide details of any special requirements/restrictions with regard to access.

At Justice installations the following must be taken in consideration:

Access permits must be arranged.

All permits for deliveries must be arranged two days in advance of delivery and to reflect at least the vehicle drivers particulars and the vehicle registration number and access approval for everyone on and in the vehicle.

All workers must be accompanied by driver/overseer. No loafing or idling of individuals in or around the gate of the site will be permitted.

Any deviation from formal designated areas and access roads will not be permitted. Any employee of the Contractor roaming about outside the designated area will be prohibited from coming onto the building.

The Contractor must at all times endeavour to prevent complaints from the Justice due to his own or his employees action(s) out of context of the contract.

Standard for Minimum Requirements for Engaging Contractors and Sub-Contractors on Construction Works Contracts, Government Gazette No. 42021 of 9 November 2018.

C3.5 STANDARD MINIMUM REQUIREMENTS

Any reference to words "Bid" or Bidder" herein and/or in any other documentation shall be construed to have the same meaning as the words "Tender" or "Tenderer".

In terms of section 5(2) of the Construction Industry Development Board Act, 2000 (Act no. 38 of 2000) (the Act), the Construction Industry Development Board is empowered to establish and promote best practice standards, Standard Requirements and Guidelines which includes the following but not limited to:

- C3.5.1 cidb Best Practice: Green Building Certification, No. 34158 Government Gazette, 1 April 2011
- C3.5.2 cidb Standard for Developing Skills through Infrastructure Contracts, No. 36760 Government Gazette, 23 August 2013
- C3.5.3 cidb Standard for Indirect Targeting for Enterprise Development through Construction Works Contracts, No 36190 Government Gazette, 25 February 2013
- C3.5.4 Preferential Procurement Policy Framework Act, 2000: Preferential Procurement Regulations, 2017, No. 40553 Government Gazette, 20 January 2017
- C3.5.5 cidb Standard for Contract Participation Goals for Targeting Enterprises and Labour through Construction Works Contracts, No. 41237 Government Gazette, 10 November 2017
- C3.5.6 cidb Standard for Minimum Requirements for Engaging Contractors and Sub-Contractors on Construction Works Contracts, No. 41237 Government Gazette, 10 November 2017
- C3.5.7 cidb Standard for Minimum Requirements for Engaging Contractors and Sub- Contractors on Construction Works Contracts, No. 42021 Government Gazette, 9 November 2018
- C3.5.8 cidb Standard for Developing Skills through Infrastructure Contracts, No. 43495 Government Gazette, 3 July 2020

C3.6 CONTRACT PARTICIPATION GOALS AND CIDB BUILD PROGRAMME

The contractor shall achieve in the performance of the contract the following Contract Participation Goals (CPGs) as specified below. Provision for pricing of compliance with the achieving the CPGs is made in the Contract Participation Goal Section of the Bills of Quantities and it is explicitly pointed out that all requirements in respect of the aforementioned are deemed to be priced thereunder and no additional claims in this regard shall be entertained:

C3.6.1 Minimum Thirty Percent (30%) Mandatory Sub-contracting Contract Participation Goal

MINIMUM THIRTY PERCENT (30%) MANDATORY SUBCONTRACTING TO SMMEs: IMPLEMENTATION OF PREFERENTIAL PROCUREMENT REGULATIONS 2017

30% Mandatory subcontracting is "not applicable" to this project.

It is the requirement of the employer that the contractor enhances the use of local Small, Micro and Medium Enterprises (SMME's) in executing this contract, irrespective whether the thirty percent (30%) Participation Goal is applicable or not.

The thirty percent (30%) mandatory Sub-contracting shall be achieved in the execution of the contract in accordance with the Preferential Procurement Policy Framework Act, 2000: Preferential Procurement Regulations, 2017 as published in the Government Gazette Notice No. 40553 of 20 January 2017.

(a) SMME's involvement of at least **insert applicable percentage, both in words and figures of the tender amount at the time of tender to be sourced from within insert applicable**

- kilometerskm** radius of the project site with the intention to maximize use of local SMMEs within **insert applicable Ward/s, Municipal District, Town, City, Province,**
- (b) SMME's involvement of at least **insert applicable percentage, both in words and figures** of the Tender Value to be sourced from within **insert applicable kilometerskm** radius of the project site.

Bidders are cautioned not to under-price items earmarked to be executed by SMMEs as adjustment to too low rates will not be entertained by the Employer.

Bidders to sub-contract a minimum of thirty percent (30%) of the tender amount including VAT at the time of tender (All inclusive, Including VAT). to any one or more of the following categories:

- a. An EME or QSE
- b. An EME or QSE which is at least 51% owned by black people
- c. An EME or QSE which is at least 51% owned by black people who are youth
- d. An EME or QSE which is at least 51% owned by black people who are women
- e. An EME or QSE which is at least 51% owned by black people with disabilities
- f. An EME or QSE which is at least 51% owned by black people living in rural or underdeveloped areas or townships
- g. A co-operative which is at least 51% owned by black people
- h. An EME or QSE which is at least 51% owned by black people who are Military veterans
- i. More than one of the categories referred to in paragraphs (a) to (h).

Bidders to refer to the CSD for a list of prospective sub-contractors provided with the tender. The bidder may refer to the CSD website should the list provided be insufficient.

Bidders must ensure that the sub-contractors conform to the following:

- a. Possess relevant accreditation where applicable;
- b. Be registered with relevant bodies (CIDB, various Councils, etc.) where applicable;
- c. Possess necessary capabilities to deliver the sub-contracted work;
- d. Meet the requirements in terms of the stipulated designated groups; and
- e. Geographical located at the place where the project will be delivered. Geographical location must be determined using the following criteria:
 - Relevant Ward. If not available;
 - Relevant neighbouring Wards. If not available;
 - Relevant Local Municipality. If not available;
 - Relevant District Municipality. If not available;
 - Relevant Metro. If not available;
 - Relevant Province. If not available;
 - Relevant Neighbouring Province. And If not available;
 - Anywhere within the borders of South Africa .

It is the bidder's responsibility to source alternative SMMEs should the parties with whom agreements were entered into at the time of tendering either no longer exist or do not perform or render work of an acceptable standard, subject to the approval by the Employer. Failure to achieve the **minimum thirty percent (30%) SMME** participation based on the tender amount including VAT, will result in a **N/A** penalty on the amount of work on which there is no compliance (Excluding VAT), unless the contractor can prove to the Employer's satisfaction that the non-achievement was beyond his/her control.

The bidder shall submit monthly reports in terms of monthly achievement and accumulative targets achieved including audited supporting documentation to the Employer's Representative.

C3.6.2 Minimum Targeted Local Material Manufacturer Contract Participation Goal

The Minimum Targeted Local Building Material Manufacturers CPG is *"not applicable"* to this project.

It is the requirement of the employer that the contractor enhances the use of local Small, Micro and Medium Enterprise Local Material Manufacturers (SMME's) in executing this contract, irrespective whether a minimum percentage Participation Goals is applicable or not.

The Minimum Targeted Local Manufacturers of Material Contract Participation Goal, in accordance with the cidb Standard for Contract Participation Goals for Targeting Enterprises and Labour through Construction Works Contracts as published in the Government Gazette Notice No. 41237 of 10 November 2017, as amended in cidb Best Practice Project Assessment Scheme Notice No. 43726 of 18 September 2020.

A Targeted Local Material Manufacturer is a targeted enterprise that operates or maintains a factory or establishment that produces on its premises materials or goods required by the principal contractor for the performance of the contract.

Note: Adapted from SANS 10845-7:2015, definition 2.13

Preference shall be given to the Targeted Local Material Manufacturer where feasible in **insert applicable Ward/s, Municipal District, Town, City, Province**, and provided that:

- (a) Such materials comply in all respects with the specific requirements of PW371 and SANS specifications,
- (b) The non-availability of such materials shall not adversely affect the desired progress of the specific works,
- (c) The use of such suppliers shall not constitute grounds for any claim for increased cost in respect thereof,
- (d) Materials of at least **insert applicable percentage, both in words and figures** of the total value of materials purchased excluding VAT to be sourced from within **insert applicable kilometerskm** radius of the project site,
- (e) Material of at least **insert applicable percentage, both in words and figures** of the total value of materials purchased excluding VAT to be sourced from within **insert applicable kilometerskm** radius of the project site.

Failure to achieve the minimum **insert applicable percentage, both in words and figures** Targeted Local Material Manufacturer participation expressed as a percentage of the original tender amount, excluding allowances and VAT, will result in a **insert applicable percentage, both in words and figures** penalty of the prorated targeted value of materials not complied with unless the contractor can prove to the Employer's satisfaction that the non-achievement was beyond his/her control.

The bidder shall submit monthly reports in terms of monthly achievement and accumulative targets achieved including audited supporting documentation to the Employer's Representative.

C3.6.3 Minimum Targeted Local Building Material Suppliers Contract Participation Goal

The Minimum Targeted Local Building Material Suppliers CPG is *"not applicable"* to this project.

It is the requirement of the employer that the contractor enhances the use of local Small, Micro and Medium Enterprise Local Material Suppliers (SMME's) in executing this contract, irrespective whether a minimum percentage Participation Goals is applicable or not.

The Minimum Targeted Local Manufacturers of Material Contract Participation Goal shall be achieved in accordance with the cidb Standard for Contract Participation Goals for Targeting Enterprises and Labour through Construction Works Contracts as published in the Government Gazette Notice No. 41237 of 10 November 2017, as amended in cidb Best Practice Project Assessment Scheme Notice No. 43726 of 18 September 2020 – Condition of Contract..

A targeted supplier is a targeted enterprise that

- a) owns, operates or maintains a store, warehouse or other establishment in which goods are bought, kept in stock and regularly sold to wholesalers, retailers or the public in the usual course of business; and
 - b) engages, as its principal business and in its own name, in the purchase and sale of goods.
- Note: Adapted from SANS 10845-7:2015, definition 2.14

Preference shall be given to the local material suppliers where feasible in the **insert applicable Ward/s, Municipal District, Town, City, Province**, and provided that:

- (a) Such materials comply in all respects with the specific requirements of PW371 and SANS specifications,
- (b) The none availability of such materials shall not adversely affect the desired progress of the specific works,
- (c) The use of such suppliers shall not constitute grounds for any claim for increased cost in respect thereof,
- (d) Materials of at least **insert applicable percentage, both in words and figures** of the total value of materials purchased excluding VAT to be sourced from within **insert applicable kilometerskm** of the project site,
- (e) Material of at least **insert applicable percentage, both in words and figures** of the total value of materials purchased excluding VAT to be sourced from within **insert applicable kilometerskm** of the project site.

Failure to achieve the minimum **insert applicable percentage, both in words and figures** Targeted Local Material Manufacturer participation expressed as a percentage of the original tender amount, excluding allowances and VAT, will result in a **insert applicable percentage, both in words and figures** penalty of the prorate targeted value of materials not complied with, unless the contractor can prove to the Employer's satisfaction that the non-achievement was beyond his/her control.

The bidder shall submit monthly reports in terms of monthly achievement and accumulative targets achieved including audited supporting documentation to the Employer's Representative.

C3.6.4 Minimum Targeted Local Labour Skills Development Contract Participation Goal

The Minimum Targeted Local Labour Skills Development CPG is "not applicable" to this project.

It is the requirement of the employer that the contractor enhances the use of local labour in executing this contract. This is required to be done through the use of both traditional building techniques and labour-intensive construction techniques careful and considered construction planning and implemented in the project irrespective whether a minimum percentage Participation Goal is applicable or not.

The Minimum Targeted Local Skills Development Contract Participation Goal shall be achieved in accordance with the cidb Standard for Contract Participation Goals for Targeting Enterprises and Labour through Construction Works Contracts as published in the Government Gazette Notice No. 41237 of 10 November 2017, as amended in cidb Best Practice Project Assessment Scheme Notice No. 43726 of 18 September 2020 – Condition of Contract.

Targeted labour: individuals who:

- a) are employed by the principal contractor, sub-contractor, or targeted enterprises in the performance of the contract.
- b) are defined as the target group in the targeting data; and
- c) permanently reside in the target area or who are recognized as being residents of the target area on the basis of identification and association with and recognition by the residents of the target area.

Adapted from SANS 10845-7:2015, definition 2.12

Targeting of labour by skills categories is only permissible within categories of semi-skilled and unskilled labour.

Contract participation goals for semi-skilled and unskilled labour shall be limited to on-the-job training to targeted labour to enable such labour to master the basic work techniques required to undertake the work in accordance with the requirements of the contract and in a manner that does not compromise worker health and safety. In the case of targeted labour, the certification of records shall be in accordance with SANS 10845-8.

Beneficiaries will be sourced from the **insert applicable Ward/s, Municipal District, Town, City, Province** for the full duration of the Construction Period, employed by either the principal contractor, sub-contractors or targeted enterprises. The total number of working days to complete the Works amount to **insert number of working days as determined by the Construction Period** working days. The minimum CPG participation for Targeted Local Labour Skills Development is **insert applicable percentage, both in words and figures**, expressed as a percentage of the total number of working days required to complete the Works. The contractor shall attain or exceed the CPG in the performance of the contract. Failure to achieve the minimum Targeted Local Labour Skills Development CPG will result in a payment reduction of **R5 000** (Excluding VAT), per working day which training has not been provided to the workforce in attendance, unless the contractor can prove to the Employer's satisfaction that the non-achievement was beyond his/her control.

The bidder shall submit monthly reports in terms of monthly achievement and accumulative targets achieved including audited supporting documentation to the Employer's Representative.

C3.6.5 CIDB BUILD PROGRAMME: Minimum Targeted Enterprise Development Contract Participation Goal

The Minimum Targeted Enterprise Development Contract Participation Goal is "not applicable" to this project.

The aim of this best practice standard for indirect targeting for enterprise development in accordance with the Standard for Indirect Targeting for Enterprise Development (published in Government Gazette 36190 of 25 February 2013), as amended in cidb Best Practice Project Assessment Scheme Notice No. 43726 of 18 September 2020 – Condition of Contract, is to promote enterprise development by providing for a minimum contract participation goal (CPG) of **five percent (5%)** of the contract amount as defined in the Standard (Tender amount, excluding allowances and VAT on selected contracts to be undertaken by joint-venture partners or to be sub-contracted to developing contractors that are also to be beneficiaries of enterprise development support from the main contractor.

The bidder shall submit monthly reports in terms of monthly achievement and accumulative targets achieved including audited supporting documentation to the Employer's Representative.

The lead partner or main contractor shall dedicate a **minimum five percent (5%)** of the tender value at the time of award, excluding allowances and VAT, to provide developmental support to targeted subcontractor or joint venture partner applicable to contracts in Grades 7 to 9, General Building and Civil Engineering contracts. Preference will be given to insert type of enterprises, e.g. General Building, Electrical, Mechanical, Plumbing, etc. It could be either or any combination of all Enterprises.

The contractor shall attain or exceed the enterprise development goal in the performance of the contract. Failing to achieve the Participation Goal will result in A) a thirty percent (30%) penalty of the value not achieved, excluding VAT, unless the contractor can prove to the Employer's satisfaction that the non-achievement was beyond his/her control.

C3.6.5.1 Criteria

The main or lead partner of the successful bidder shall:

- (a) There must be a needs analysis for indirect targeting and development or skill standard and should be development in at least any two developmental areas namely;
- Administrative and cost control systems
 - construction management systems and plans
 - planning, tendering and programming
 - business; technical; procurement skills
 - legal compliance
 - credit rating/history; financial loan capacity/history
 - contractual knowledge
- (b) The above needs analysis shall be mutually agreed upon between contractor and targeted enterprise
- (c) The contractor shall appoint an enterprise development coordinator to:
- perform needs analysis on the targeted enterprise to identify developmental goals
 - develop a project specific enterprise development plan to improve the targeted enterprise/s performance in the identified developmental areas
 - provide internal mentorship support to improve the targeted enterprise/s performance
 - monitor and submit to the employer's representative a monthly enterprise development report thereby reporting on the progress of the agreed development areas with the targeted enterprise/s
 - submit a project completion report to the Employer's representative for each targeted enterprise.

C3.6.5.2 Management

The contractor shall provide a competent person/s to provide internal mentorship to the Targeted Enterprise/s in the two agreed developmental areas.

C3.6.5.3 Competence Criteria for an Enterprise Development Co-ordinator

The enterprise development co-ordinator shall have the following competencies:

- Minimum experience of 5 years in the construction industry at Managerial level as a Site Agent, Contracts Manager, Site Manager, Construction Manager, Business Development Manager or Enterprise Development Manager.
- Minimum experience of 2 years in training and development in Building or Construction; and
- National Diploma or B Degree in the Built Environment or Business Management

C3.6.5.4 Format of Communications

The contractor shall submit to the Employer's Representative:

- *Project interim reports* in the specified format (**ED105P**) detailing interim values of the CPG that was achieved together with an assessment of the enterprise development support provided should be tabled and discussed at least monthly at progress meetings between employer's representative and the contractor;
- *Project completion report* in the specified format (**ED101P**) to the Employer's Representative for acceptance within 15 days of achieving practical completion. The report shall include the value of the CPG that was certified in accordance with the contract, cidb registration numbers of each

and every targeted enterprise, and the value of the subcontracted works or of the joint venture entered into; and the participation parameter

- *Enterprise development declaration (ED104P).*

C3.6.5.5 The Key Personal

The contractor shall appoint an Enterprise Development Co-ordinator and a competent person/s to provide internal mentorship.

C3.6.5.6 Management Meetings

The contractor shall report to the Employer's Representative on the implementation and progress of the targeted enterprise development and CPG at monthly progress site meetings.

C3.6.5.7 Forms for contract administration

The contractor shall submit to the Employer's Representative the following proformas:

- Form ED 105P Project Interim Report
- Form ED 104P Enterprise Development Declaration
- Form ED 101P Project Completion Report

C3.6.5.8 Records

The contractor shall:

- keep records of the targeted enterprise development
- keep records of the payments made to the targeted enterprises in relation to the CPG.
- ensure all the documentation required in terms of the Standard is provided with each monthly progress payment certificate and according to a prescribed format where applicable.

C3.6.5.9 Payment Certificates

The contractor shall:

- achieve the measurable CPG and providing enterprise development support to the targeted enterprise/s as per the Standard.
- submit payment certificates to the Employer Representative at intervals determined in the Contract.

C3.6.5.10 Compliance requirements

Non-compliance with the Best Practice Project Assessment Scheme

The wording of regulation 27A of the cidb regulations makes provision for the Board to enforce the cidb code of conduct in the event of clients being found to be in breach of the best practice project assessment scheme.

- Not including the requirements of the cidb standards in the conditions of tender
- Not registering the award of contract on the cidb Register of Projects (RoP)
- Not reporting practical completion on the cidb Register of Projects (RoP)

3.6.6 CIBD BUILD PROGRAMME: Minimum Targeted Contract Skills Development Goal (CSDG)

Any reference to words "Bid" or Bidder" herein and/or in any other documentation shall be construed to have the same meaning as the words "Tender" or "Tenderer".

The Minimum Targeted Contract Skills Development CPG is *insert "applicable" or "not applicable"* to this project.

The contractor shall achieve or exceed in the performance of the contract the Contract Skills Development Goal (CSDG) established in the Standard for Developing Skills through Infrastructure Contracts (published in Government Gazette No 43495 of 3 July 2020, as amended in cidb Best Practice Project Assessment Scheme Notice No. 43726 of 18 September 2020 – Condition of Contract.

Failing to achieve the targeted Contract Skills Development Goal will result in A) a thirty percent (30%) penalty of the value of the portion not achieved, excluding VAT, and B) the issuing of completion certificates only after the completion certificate of achieving the skills development goal, counter-signed by the relevant individuals has been submitted, unless the contractor can prove to the Employer's satisfaction that the non-achievement was beyond his/her control.

The contractor shall apportion the learners in the different construction activities based on the scope of work. The cost of accommodating learners will be determined by using Table 3 in the Standard and this cost will be used to determine the value in Rand and will be added to the provision for training as provided for in the Preliminary and General section in the Bill of Quantities/Pricing schedules/Activity schedule.

C3.6.6.1 Methodology

The contractor shall achieve the measurable contract skills development goal by providing opportunities to learners requiring structured workplace learning using one or a combination of any of the following in relation to work directly related to the contract or order:

Method 1: structured workplace learning opportunities for learners towards the attainment of a part or a full occupational qualification;

Method 2: structured workplace learning opportunities for apprentices or other artisan learners towards the attainment of a trade qualification leading to a listed trade (GG No. 35625, 31 August 2012) subject to at least sixty percent (60%) of the artisan learners being holders of public TVET college qualifications;

Method 3: work integrated learning opportunities for University of Technology or Comprehensive University students completing their national diplomas;

Method 4: structured workplace learning opportunities for candidates towards registration in a professional category by a statutory council listed in Table 1 above.

The contract skills participation goals, expressed in Rand, shall not be less than the contract amount multiplied by a percentage (%) factor given in Table 2 in the Standard for the applicable class of construction works.

Table 2: Contracting skills development goals for different classes of engineering and construction works contracts

Class of construction works as identified in terms of Regulation 25 (3) of the Construction Industry Regulations 2004		Construction skills development goal (CSDG) (%)
Designation	Description	
CE	Civil Engineering	0.25
CE and GB	Civil engineering and General Building	0.375
EE	Electrical Engineering works (buildings)	0.25
EP	Electrical Engineering works (infrastructure)	0.25

Class of construction works as identified in terms of Regulation 25 (3) of the Construction Industry Regulations 2004		Construction skills development goal (CSDG) (%)
Designation	Description	
GB	General Building	0.5
ME	Mechanical Engineering works	0.25
SB	Specialist	0.25

The contractor shall apportion the learners in the different construction activities based on the scope of work. The cost of accommodating learners will be determined by using Table 3 in the Standard and this cost will be used to determine the value in Rand and will be added to the provision for training as provided for in the Preliminary and General section in the Bill of Quantities/Pricing schedules/Activity schedule.

Table 3: Notional Cost of Training per Headcount

Source: cidb Standard for Skills Development

Type of Training Opportunity	Provision for stipends (Unemployed learners only)	Provisions for mentorship	Provisions for additional costs*	Total costs	
				Unemployed learners	Employed learners
Method 1					
Occupational qualification	R7 000	R0	R9 000	R16 000	R9 000
Method 2					
TVET College graduates	R14 000	R0	R9 000	R23 000	N/A
Apprenticeship	R14 000	R0	R12 000	R26 000	R12 000
Method 3					
P1 and P2 learners	R24 000	R20 000	R4 500	R48 500	N/A
Method 4					
Candidates with a 3 year diploma	R37 000	R20 000	R4 500	R61 500	R20 000
Candidates with 4 year qualification	R47 000	R20 000	R4 500	R71 500	R20 000

Note: the required CPG will be recalculated based on the awarded tender amount and "Contract amount" once the beneficiaries have been appointed and actual costs are known. The notional cost of providing training opportunities will increase by CPI on an annual basis based on April CPI. Should the rates increase after bid award or during construction the rates will be adjusted as a remeasurable item.

- The successful contractor may employ part/full occupational qualification learners, trade qualification learners, work integrated learners or candidates directly or through a Skills Development Agency (SDA), (A1 - List of cidb accredited SDAs).
- The successful contractor must employ at least sixty percent (60%) of the learners from an FET / TVET college should the contractor select to have part/full occupational qualification learners and trade qualification learners contributing to the CSDG.
- The successful contractor shall employ at least N/A from eligible part/full occupational qualification learners, trade qualification learners, work integrated learners or candidates in the employment of the employer.
- The successful contractor shall ensure that no single method shall contribute more than seventy five percent (75%) of the CSDG for the contract.
- The successful contractor may only place thirty three percent (33%) employed employees or that of his subcontractors contributing to the CSDG.

- (f) The contractor shall employ at least sixty percent (60%) of the learners from a Public FET / TVET college should the contractor select to have trade qualification learners (Method 2) contributing to the CSDG.
- (g) One of the objectives of the project is to train **insert applicable number, both in words and figures** Occupational qualifications, trade qualification, work integrated learners – P1 and P2 learners, professional candidates.

C3.6.6.2 Management

- (a) The successful contractor must keep site records regarding the part/full occupational qualification learners', trade qualification learners', work integrated learners' or candidates' progress, site attendance, hours worked and other relevant information as required by the Standard.
- (b) The successful contractor shall provide the required number of appropriately qualified mentors to the maximum number of part/full occupational qualification learners, trade qualification learners, work integrated learners in the proportion as specified in the Standard.
- (c) The successful contractor shall provide a supervisor to manage the training of the part/full occupational qualification learners, trade qualification learners, work integrated learners, candidates.
- (d) The successful contractor shall submit to the employer's representative a baseline training plan in the specified format (Pro-forma A2) for the part/full occupational qualification learners, trade qualification learners, work integrated learners, candidates within 30 days of start of the contract.
- (e) The successful contractor shall submit to the employer's representative project interim report in the specified format (Pro-forma A3) on the progress of each of part/full occupational qualification learner, trade qualification learner, work integrated learner, candidate every three months.
- (f) The successful contractor shall submit to the employer's representative the names and particulars in the specified format (Pro-forma A4) of the supervisor, mentors for the part/full occupational qualification learners, trade qualification learners, work integrated learners or within 30 days of start of the contract.
- (g) The successful contractor shall keep a daily record of all the part/full occupational qualification learners, trade qualification learners, work integrated learners, candidates on site and their daily activities and shall be made available to the employer's representative on request.
- (h) The successful contractor shall submit to the employer's representative the reports on the progress and status of the part/full occupational qualification learners, trade qualification learners, work integrated learners or candidates with the monthly invoice for the payment certificate.
- (i) The successful contractor shall have health and safety inductions for all part/full occupational qualification learners, trade qualification learners, work integrated learners or candidates.
- (j) The successful contractor shall conduct entry and exit medical tests of all part/full occupational qualification learners, trade qualification learners, work integrated learners or candidates.
- (k) The successful contractor shall provide personal protective equipment (PPE) to all part/full occupational qualification learners, trade qualification learners, work integrated learners or candidates at the start of their employment on site.
- (l) Based on the agreed skills methods the contractor may employ part/full Occupational Qualification Learners and /or Trade Qualification Learners and/or Work Integrated Learners and/or Candidates directly or through a Skills Development Agency (SDA), training provider or skills development facilitator (Form A1 - List of cidb accredited SDAs). The contractor shall ensure that no more than one Method shall be applied to any individual concurrently in the calculation of the CSDG for the contract.

C3.6.7 NATIONAL YOUTH SERVICE TRAINING AND DEVELOPMENT PROGRAMME (NYS)

The National Youth Service Training and Development Programme is *"applicable"* to this project.

The programme shall be implemented in terms of the Implementation of the National Youth Service Programme under the Expanded Public Works (EPWP) and shall be priced in the CPG section of the Bills of Quantities. Monthly reports are to be submitted to the Employer's Representative.

Failure by the contractors to achieve the specified number to be trained in the NYS section of the CPG section within the Bills of quantities will result in a Payment reduction as per bill of quantities per person, excluding VAT, unless the contractor can prove to the Employer's satisfaction that the non-achievement was beyond his/her control.

C3.6.8 LABOUR-INTENSIVE WORKS

Labour Intensive Works is *"applicable"* to this project.

Where labour intensive work is specified in the Bill of Quantities and specified by "LI" the contractor must price for and include in rates. Contractors are expected to use their initiative to identify additional activities that can be done labour-intensively to comply with the set minimum labour intensity target. Allowance must be made for submitting monthly reports illustrating the value of the works executed under Labour Intensive Works.

Failure by the contractor to achieve the specified value of the Labour Intensive Participation Goal as stipulated within the Bills of quantities will result in a **thirty percent (30%)** penalty of the value of the works not done by means of labour intensive methods, excluding VAT, unless the contractor can prove to the Employer's satisfaction that the non-achievement was beyond his/her control.

Employer's objectives:

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

Labour-intensive works:

Labour-intensive works shall be constructed/maintained using local workers who are temporarily employed in terms of the scope of work.

Labour-intensive competencies of supervisory and management staff:

Contractors shall only engage supervisory and management staff in labour-intensive works that have completed the skills programme including Foremen/ Supervisors at NQF level 4 "National Certificate: Supervision of Civil Engineering Construction Processes" and Site Agent/ Manager at NQF level 5 "Manage Labour-Intensive Construction Processes" or equivalent QCTO qualifications (See Appendix C) at NQF outlined in Table 1

C3.6.8.1 GENERIC LABOUR-INTENSIVE SPECIFICATION

Contractors are referred to the Guidelines for the Implementation of Labour-intensive Infrastructure Projects under the Expanded Public Works Programme (EPWP) for the generic labour-intensive specification applicable to the contract.

This specification establishes general requirements for activities which are to be executed by hand involving the following:

- trenches having a depth of less than 1.5 metres

- stormwater drainage
- roads
- sidewalks and non-motorised transport infrastructure
- water and sanitation

Precedence

Where this specification is in conflict with any other standard or specification referred to in the Scope of Works to this Contract, the requirements of this specification shall prevail

Hand excavatable material

Hand excavatable material is:

a) granular materials:

- whose consistency when profiled may in terms of table 2 be classified as very loose, loose, medium dense, or dense; or
- where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 15 blows of a dynamic cone penetrometer is required to penetrate 100mm;

b) cohesive materials:

- whose consistency when profiled may in terms of table 2 be classified as very soft, soft, firm, stiff and stiff / very stiff; or
- where the material is a gravel having a maximum particle size of 10mm and contains no cobbles or isolated boulders, no more than 8 blows of a dynamic cone penetrometer is required to penetrate 100mm;

Note

- A boulder is material with a particle size greater than 200mm, a cobble and gravel is material between 60 and 200mm.
- A dynamic cone penetrometer is an instrument used to measure the in-situ shear resistance of a soil comprising a drop weight of approximately 10 kg which falls through a height of 400mm and drives a cone having a maximum diameter of 20mm (cone angle of 60° with respect to the horizontal) into the material being used.

Table 2: Consistency of materials when profiled			
GRANULAR MATERIALS		COHESIVE MATERIALS	
CONSISTENCY	DESCRIPTION	CONSISTENCY	DESCRIPTION
Very loose	Crumbles very easily when scraped with a geological pick.	Very soft	Geological pick head can easily be pushed in as far as the shaft of the handle.
Loose	Small resistance to penetration by sharp end of a geological pick.	Soft	Easily dented by thumb; sharp end of a geological pick can be pushed in 30-40 mm; can be moulded by fingers with some pressure.
Medium dense	Considerable resistance to penetration by sharp end of a geological pick.	Firm	Indented by thumb with effort; sharp end of geological pick can be pushed in up to 10 mm; very difficult to mould with fingers; can just be penetrated with an ordinary hand spade.
Dense	Very high resistance to penetration by the sharp end of a geological pick;	Stiff	Can be indented by thumb-nail; slight indentation produced by pushing geological pick

	requires many blows for excavation.		point into soil; cannot be moulded by fingers.
Very dense	High resistance to repeated blows of a geological pick.	Very stiff	Indented by thumb-nail with difficulty; slight indentation produced by blow of a geological pick point.

Trench excavation

All hand excavatable material in trenches having a depth of less than 1,5 metres shall be excavated by hand.

Compaction of backfilling to trenches (areas not subject to traffic)

Backfilling to trenches shall be placed in layers of thickness (before compaction) not exceeding 100mm. Each layer shall be compacted using hand stampers;

a) to 90% Mod AASHTO;

b) such that in excess of 5 blows of a dynamic cone penetrometer (DCP) is required to penetrate 100 mm of the backfill, provided that backfill does not comprise more than 10% gravel of size less than 10mm and contains no isolated boulders, or

c) such that the density of the compacted trench backfill is not less than that of the surrounding undisturbed soil when tested comparatively with a DCP.

Excavation

All excavatable material including topsoil classified as hand excavatable shall be excavated by hand. Harder material may be loosened by mechanical means prior to excavation by hand. Any material which presents the possibility of danger or injury to workers shall not be excavated by hand.

Clearing and grubbing

Grass and bushes shall be cleared by hand.

Shaping

All shaping shall be undertaken by hand.

Loading

All loading shall be done by hand. Haulage equipment should be selected in a manner that allows loading by hand to the greatest extent possible.

Haul

Excavation material shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150m.

Offloading

All material, however transported, is to be off-loaded by hand, unless tipper-trucks are utilised for haulage.

Spreading

All material shall be spread by hand.

Compaction

Small areas may be compacted by hand provided that the specified compaction is achieved. Appropriate rollers should be used where higher (than can be achieved by hand) levels of compaction are required or for large areas.

Grassing

All grassing shall be undertaken by sprigging, sodding, or seeding by hand.

Stone pitching and rubble concrete masonry

All stone required for stone pitching and rubble concrete masonry, whether grouted or dry, must be collected, loaded, off loaded and placed by hand.

Sand and stone shall be hauled to its point of placement by means of wheelbarrows where the haul distance is not greater than 150m.
Grout shall be mixed and placed by hand.

Manufactured Elements

Elements manufactured or supplied by the Contractor, such as manhole rings and cover slabs, precast concrete planks and pipes, masonry units and edge beams shall not individually, have a mass of more than 320kg. Where the mass of an element exceeds 55 kg, consideration should be given to the size of the element relative to its total mass related to the number of workers who would be needed to lift such mass

C3.7 Submission of Accrual Reports

The Contractor shall submit accrual reports to the client representative at the end of March and September each year for the duration of the Service Contract period from the date of appointment up to and including project closeout. This is to ensure that PMTE complies with the accounting framework GRAP, which requires that PMTE disclose all its accruals as at the end of each reporting date.

C3.8 Submission of Monthly Local Material Utilisation Report (Local Content)

The contractors shall be responsible for record keeping, documenting and submission of monthly local material utilization report with supporting documentation to the Employer's representative within 7 working days of the beginning of the successive month, in terms of DTI&C designated industry/sector/sub-sector schedule as per the PA36 and Annexures C attached to the tender document. The final percentage achievement to be reconciled upon completion of the project and form part of the final account. Failure by the contractors to achieve the specified percentage of local content per designated industry/sector/sub-sector as listed will result in a thirty percent thirty percent (30%) penalty of the value not achieved, excluding VAT, unless the contractor can prove to the Employer's satisfaction that the non-achievement was beyond his/her control.

Examples of calculating CPGs and related penalties

CPGs values are based on the Tender Amount at the time of the award. Determining the actual values is based either on the Tender Amount including allowances and Vat or the Tender Amount at the time of award excluding allowances and VAT, where Allowances include the following:

- Provisional amounts
- CPG allowances
- Nominated and/or selected subcontractors
- Contract price adjustment (Not provided for within the B of Q by NDPWI)
- Contingency amounts (Not provided for within the B of Q by NDPWI)

CPG values in the CPG Bill of Quantities Section will be recalculated based on the “Tender Amount” or the “Contract Amount” which ever applicable and the provisional amounts adjusted accordingly. Sanctions (penalties) are applicable to all CPGs where the contractor fails to achieve the minimum specified requirements, unless the contractor can prove to the Employer’s satisfaction that the non-achievement was beyond his/her control. No penalties will be applied should the CPG value, based on the original “Tender Amount” or the “Contract Amount”, has been achieved.

1.1. 30% SMME mandatory subcontracting CPG

When applicable, a minimum of 30% of the total tender amount at the time of award, including all allowances and VAT are to be subcontracted to SMMEs.

CPG calculation example:

“Tender Amount” = R150 mil

CPG 30% subcontracting value = R45 Mil

Calculation of penalty:

Percentage penalty applicable = 5% as specified in the Scope of Works (PG01.2)

CPG Achieved = R30 Mil (R15 Mil shortfall)

Penalty = R15 Mil x 5% = R750 000 Excl. VAT

1.2 Targeted Local Building Material Manufacturers CPG

When applicable, the CPG is expressed as a percentage of the “Contract Amount”, i.e. the Tender Amount at the time of award excluding allowances and VAT.

CPG calculation example:

“Tender Amount” = R150 Mil all inclusive of allowances and VAT

“Contract Amount” = R130 Mil (Tender Amount at the time of award excluding allowances and VAT)

CPG to be achieved = 5% as specified in the Scope of Works (PG01.2)

CPG target value = R130 Mil x 5% = R 6,5 Mil (Value of material to be purchased from local manufacturers, excluding VAT)

Calculation of penalty:

Percentage penalty applicable = 10% as specified in the Scope of Works (PG01.2)

CPG target value = R6,5 Mil excluding VAT

CPG Achieved = R5,5 Mil (R1 Mil shortfall) excluding VAT

Penalty = R1 Mil x 10% = R100 000 excluding VAT

1.3 Targeted Local Building Material Suppliers CPG

When applicable, the CPG is expressed as a percentage of the “Contract Amount”, i.e. the Tender Amount at the time of award excluding allowances and VAT.

CPG calculation example:

“Tender Amount” = R150 Mil all inclusive of allowances and VAT

“Contract Amount” = R130 Mil (Tender Amount at the time of award excluding allowances and VAT)

Any reference to words “Bid” or Bidder” herein and/or in any other documentation shall be construed to have the same meaning as the words “Tender” or “Tenderer”.

CPG to be achieved = 5% as specified in the Scope of Works (PG01.2)
CPG target value = R130 Mil x 5% = R 6,5 Mil (Value of material to be purchased from local suppliers, excluding VAT)

Calculation of penalty:

Percentage penalty applicable = 20% as specified in the Scope of Works (PG01.2)
CPG target value = R6,5 Mil excluding VAT
CPG Achieved = R5,5 Mil (R1 Mil shortfall) excluding VAT
Penalty = R1 Mil x 20% = R200 000 excluding VAT

1.4 Targeted Local Labour Skills Development CPG

When applicable, the CPG is expressed as a percentage of the total number working days required to complete the Works.

CPG calculation example:

"Tender Amount" = R150 Mil all inclusive of allowances and VAT
"Contract amount" = R130 Mil (Tender Amount at the time of award excluding allowances and VAT)
Number of working days required to complete the Works based on the construction period = 600 days
CPG percentage participation to be achieved = 30% as specified in the Scope of Works (PG01.2)
Required number of working days training to be provided = 180 days (600 x 30%)

Calculation of penalty:

Payment reduction = R 5 000 per day for not providing training as specified in the Scope of Works (PG01.2)
CPG = 600 working days x 30% = 180 working days training to be provided
CPG Achieved = 160 days (20 days shortfall where no training was provided)
Penalty = 20 days x R5 000 payment reduction per day = R100 000 excluding VAT

1.5 National Youth Service Programme (NYS) CPG

When applicable, a separate NYS Bill of Quantities will be included in the tender documentation will indicate the number of beneficiaries to be trained.

Calculation of penalty:

Payment reduction per person not trained as stipulated in the NYS Bill of Quantities = R 2 500 per person.
Total number of NYS Beneficiaries as stipulated in the NYS Bill of Quantities = 25
Total Number of NYS beneficiaries trained = 20 (shortfall of 5 beneficiaries)
Penalty = 5 x R2 500 = R12 500 Excl. VAT

1.6 Labour Intensive Works CPG

When applicable, the work to be done by way of Labour intensive methods are specified in the Bills of Quantities with a "LI".

CPG calculation example:

"Tender Amount" = R150 Mil all inclusive of allowances and VAT
"Contract Amount" = R130 Mil (Tender Amount at the time of award excluding allowances and VAT)
CPG value = R10 Mil (Total value of labour-intensive works specified in the Bills of Quantities)

Calculation of penalty:

CPG value = R10 Mil
Percentage penalty applicable = 30% as specified in the Scope of Works (PG01.2)
CPG Achieved = 9 Mil (R1 Mil shortfall)
Penalty = R1 Mil x 30% = R300 000 Excl. VAT

1.7 Cidb BUILD Programme: Enterprise Development

When applicable, the Enterprise Development CPG expressed as a percentage of the "Contract amount" =

Any reference to words "Bid" or Bidder" herein and/or in any other documentation shall be construed to have the same meaning as the words "Tender" or "Tenderer".

Tender amount at the time of award excluding allowances and VAT. Failure to achieve the minimum Targeted Local Labour Skills Development CPG will result in a payment reduction of an amount specified in the Scope of Works (PG01.2) per working day where training was not provided.

The monetary value of training to be provided is stipulated in the CPG BoQ section. The number of beneficiaries to be trained is dependent on the "Contract Amount" as well the number of beneficiaries appointed which will generally resort under the Grade 1 and 2 cidb categories. The provisional amount will therefore be adjusted in terms of the "contract Amount", the number of beneficiaries to be trained and the actual cost for providing the training.

Part 1: Calculation of 5% CPG example:

"Tender Amount" = R150 Mil all inclusive of allowances and VAT

"Contract Amount" = R130 Mil (Tender Amount at the time of award excluding allowances and VAT)

CPG percentage participation to be achieved = 5% as specified in the Scope of Works (PG01.2) CPG

value = R6,5 Mil (Value of work to be subcontracted to emerging enterprises)

Calculation of penalty

Percentage penalty applicable = 30% as specified in the Scope of Works (PG01.2)

CPG Minimum 5% = R6,5 Mil

Achieved = R5,5 Mil (Only subcontracted work to the value of R5,5 Mil, i.e. R1 Mil shortfall)

Penalty = R1 Mil x 30% = R300 000 Excl. VAT

Part 2: Calculations in terms of training to be done:

The number of enterprises to be developed is subject to the contract amount and the apportionment of the work as per Example 1 below.

Number of enterprises to be trained = 6 x 1 GB subcontractors

Total cost for training = R 1 660 000

Calculation of penalty

Total number of enterprises to be trained = 6

Total number trained = 4 (2 Shortfall)

Training cost per beneficiary = R1 660 000 / 6 = R 276 666,67 per beneficiary

Penalty = R 276 666,67 x 2 x 30% = R166 000 Excl. VAT

B of Q Item	Description	Unit	Rate	Quantity	Amount (R)
5	Enterprise Development				
5.1	Enterprise Development of Targeted Enterprise or JV partners				
5.1.1	Appointment of training co-ordinator	Per Quarter	45 000	8	360 000
5.1.2	Appointment of Mentor /Training Service provider	Per Quarter	135 000	8	1 080 000
5.1.3	Needs Analysis and Enterprise Development Plan per Targeted Enterprise	No.	5 000	6	30 000
5.1.4	Monitoring and Interim reporting per targeted enterprise	Per Quarter	20 000	8	160 000
5.1.5	Project Completion report per Targeted Enterprise	No.	5 000	6	30 000
	Provisional Sum to be carried over to CPG bill of quantities				1 660 000
	"Contract amount" Tender amount excl. allowances and VAT.		130 000 000		
	CPG Monetary value (5%) to be subcontracted to beneficiaries for training		6 500 000		
	No of enterprises based on the CPG value	6		Grade 1 / 2 GB/CE,ETC.	
	Contract period (months)	24			
	Note: Rates to be determined by PQS and adjusted to accepted quotation amounts				

1.8 Cidb BUILD Programme: Skills Development (Principal contractor including subcontractors and consultants)

When applicable, the contract skills development participation goals, expressed in Rand, shall be no less than the "contract amount" multiplied by a percentage (%) factor for the applicable class of

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construction works.

The monetary value of training to be provided is stipulated in the CPG BoQ section. The number of beneficiaries to be trained is dependent on the "Contract Amount" as well the number of beneficiaries appointed which will generally resort under the Grade 1 and 2 cidb categories. The provisional amount will therefore be adjusted in terms of the "Contract Amount", the number of beneficiaries to be trained from which *Method* and the actual cost for providing the training.

CPG Calculation

Table 2: Contracting skills development goals for different classes of engineering and construction works contracts

Source: cidb Standard for Developing Skills through Infrastructure Contracts as published in the Government Gazette Notice No. 43495 of 3 July 2020 (Page 7)

Class of construction works as identified in terms of Regulation 25 (3) of the Construction Industry Regulations 2004		Construction skills development goal (CSDG) (%)
Designation	Description	
CE	Civil Engineering	0.25
CE and GB	Civil engineering and General Building	0.375
EE	Electrical Engineering works (buildings)	0.25
EP	Electrical Engineering works (infrastructure)	0.25
GB	General Building	0.5
ME	Mechanical Engineering works	0.25
SB	Specialist	0.25

"Contract amount" = Tender amount at the time of award excluding allowances and expenses, and VAT

Contractor CPG:

CPG calculation

"Contract amount" x factor from Table 3 above.

CPG calculation example:

"Tender Amount" = R150 Mil for GB, all inclusive of allowances and VAT

"Contract Amount" = R130 Mil (Tender Amount at the time of award excluding allowances and VAT)

Factor for GB = 0,5% (as per Table 2 above)

CPG in R value = R130 Mil x 0,5% = R650 000 i.e. total cost of training to amount to R650 000

Calculation of penalty:

Percentage penalty applicable = 30% as specified in the Scope of Works (PG01.2)

CPG value = R650 000

Achieved = R550 000 = R100 000 Shortfall

Penalty = R100 000 x 30% = R30 000 Excl. VAT

Calculations based on "Contract Amount" after b5d award and aafter bid award and appointment of beneficiaries

Actual CPG training requirement value after award upon selecting method/s of training and appointment of beneficiaries = R676 000 (Table 4 below) and the provisional amount allowed for to be adjusted accordingly. The new monetary value of training required will then form the basis for determining penalties applicable. No penalties will be applied should the CPG value, based on the "Contract Amount" be achieved.

Table 4: Notional cost recalculation upon appointment of beneficiaries.

Source: cidb Standard for Developing Skills through Infrastructure Contracts as published in the Government Gazette Notice No. 43495 of 3 July 2020 (Page 10)

Skills Types	Number of learners	Notional Cost / Learner / Quarter	Notional cost / learner / year	Total Notional Cost over 12 months Contract
Method 2: Workplace learning opportunities, with unemployed TVET graduates	2	R23 000	R92 000	R184 000

Tender no.:
 WCS no.:
 PG-01.2 (EC): Scope of Works – JBCC
 (JBCC 2000- Edition 6.2 of May 2018)

Method 3:				
Candidacy for an unemployed learner with a 3-year qualification	2	R61 500	R246 000	R492 000
Total	4			R676 000

Note: the required CPG will be recalculated based on the awarded Tender amount and "Contract Amount" once the beneficiaries have been appointed and actual costs are known

Note: The notional cost of providing training opportunities will increase by CPI on an annual basis based on April CPI as published by Stats SA. The rates will be adjusted as an adjustment to the provisional amounts should the rates increase after bid award or during the construction period

OCCUPATIONAL HEALTH & SAFETY SPECIFICATION



public works
& infrastructure

Department:
Public Works and Infrastructure
REPUBLIC OF SOUTH AFRICA

OCCUPATIONAL HEALTH AND SAFETY
FOR
CONSTRUCTION PROJECT:
REPAIR AND RENOVATIONS
AT
HANOVER MAGISTRATE: DOJ
MANAGED ON BEHALF OF
THE DEPARTMENT OF
PUBLIC WORKS

PRINCIPAL CONTRACTOR RECEIPT

Received by:

Name:

Signature:

Date:

Capacity:

OHS MANAGEMENT: WENDY MBOLEKWA

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1. PREAMBLE

In terms of Construction Regulation 4(1)(a) of the Occupational Health and Safety Act, 1993 (Act 85 of 1993), and 5(1) construction regulation of 2014, the Department of Public Works, 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.

The Client's further duties are as described in The Act and the Regulations made there-under. The Principal Contractor 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 5 as well as the Health and Safety Plan for the project.

2. SCOPE OF HEALTH AND SAFETY SPECIFICATION DOCUMENT

These Specifications should be read in conjunction with the Act, the Construction Regulations and all other Regulations and 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.

2.1 APPLICATIONS AND INTERPRETATION

This document is to be read and understood in conjunction with the following, inter- alia:

- *Occupational Health and Safety Act 85 of 1993 (OHS Act).*
- *All regulations published in terms of the OHS Act.*
- *Construction Regulations, 2014*
- *SABS codes referred to by the OHS Act.*
- *Contract Documents*
- *Basic Conditions of Employment Act (Act 75 of 1997)*
- *National Environmental Management Act 107 of 1998 and all Regulations*
- *Compensation for Occupational Injuries and Diseases (COID) Act No. 130 of 1993*

ABBREVIATIONS

- OHS : Occupational Health and Safety
- CEO : Chief Executive Officer
- CR : Construction Regulations
- HCS : Hazardous Chemical Substances
- MSDS : Material Safety Data Sheet
- AIA : Approved Inspection Authority
- HBA : Hazardous Biological Agents
- OEL : Occupational Exposure Limit

- CSIR : Council for Scientific and Industrial Research
- H&SS : Health and Safety Specification
- HS&EP : Health, Safety and Environmental Plan
- HS&EF : Health, Safety and Environmental File
- CHSO : Construction Health and Safety Officer

3. PURPOSE

The Department is obligated to implement measures to ensure the health and safety of all people and properties affected under its custodianship or contractual commitments, and is further obligated to monitor that these measures are structured and applied according to the requirements of these Health and Safety Specifications.

The purpose of this specification document is to provide the relevant Principal Contractor (and his /her 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 the health and safety of persons in connection with the use of plant and machinery; and to protect 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 during the carrying out of construction work for the Department of Public Works and Infrastructure. The Principal Contractor (and his /her sub-contractor) is to be briefed on the significant health and safety aspects of the project and to be provided with information and requirements.

4. DEFINITIONS

The following definitions from the Occupational Health and Safety Act are listed as follows:

“Chief Executive Officer”

In relation to a body corporate or an enterprise conducted by the State, means the person who is responsible for the overall management and control of the business of such body corporate or enterprise.

“Danger”

Means anything that may cause injury or damage to persons or property.

“Employee”

Means, subject to the provisions of Subsection (2), any person who is employed by or works for any employer and who receives or is entitled to receive any remuneration or who works under the direction or supervision of an employer or any other person.

“Employer”

Means, subject to the provisions of Subsection (2), any person who employs or provides work for any person or remunerates that person or expressly or tacitly undertakes to remunerate him, but excludes a labour broker as defined in Section 1(1) of the Labour Relations Act, 1953 (Act No. 28 of 1956).

“Healthy”

Means free from illness or injury attributable to occupational causes.

Machinery

Means any article or combination of articles assembled, arranged or connected and which is used or intended to be used for converting any form of energy to performing work, or which is used or intended to be used, whether incidental thereto or not, for developing, receiving, storing, containing, confining, transforming, transmitting, transferring or controlling any form of energy.

Plant

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

Medical Surveillance

Means a planned programme of periodic examination (which may include clinical examinations, biological monitoring or medical tests) of employees by an occupational health practitioner or, in prescribed cases, by an occupational medicine practitioner. Plant Includes fixtures, fittings, implements, equipment, tools and appliances, and anything which is used for any purpose in connection with such plant. Properly Used Means used with reasonable care, and with due regard to any information, instruction or advice supplied by the designer, manufacturer, importer, seller or supplier.

User

In relation to plant or machinery, means the person who uses plant or machinery for his own benefit or who has the right of control over the use of plant or machinery, but does not include a lessor of, or any person employed in connection with, the plant or machinery.

Reasonably Practicable

Means practicable having regards to: a) the severity and scope of the hazard or risk concerned, b) The state of knowledge reasonably available concerning that hazard or risk and of any means to remove or mitigate that hazard or risk. c) the availability and suitability of means to remove or mitigate that hazard or risk; and d) The cost of removing or mitigating that hazard or risk in relation to the benefits deriving there from.

“Risk”

Means the probability that injury or damage will occur.

“Safe”

Means free from any hazard.

“Standard”

Means any provision occurring: a) in a specification, compulsory specification, code of practice or standard method as defined in Section 1 of the Standards Act, 1993 (Act No. 29 of 1993); OR b) in any specification, code or any other directive having standardization as its aim and issued by an institution or organization inside or outside the Republic which, whether generally or with respect to any particular article or matter and whether internationally or in any particular country or territory, seeks to promote standardisation.

The following definitions from the Construction Regulations are listed as follows:

“Agent” – means any person who acts as a representative for a Client;

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

“Construction Work” is defined as any work in connection with –

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

"Health and Safety File" – means a file, or other record in permanent form, containing the information required a contemplated in the 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;

"Electrical installation" means any electrical installation as defined in regulation 1 of the Electrical Installation Regulations, published under Government Notice R.2270 of 11 October 1985;

"Method Statement" – means a document detailing the key activities to be performed in order to reduce as reasonably as practicable the hazards identified in any risk assessment;

"Principal Contractor" – means an employer, as defined in section 1 of the Act who performs construction work and is appointed by the Client to be in overall control and management of a part of or the whole of a construction site;

"Risk Assessment" – means a program to determine any risk associated with any hazard at a construction site, in order to identify the steps needed to be taken to remove, reduce or control such hazard.

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

5. OCCUPATIONAL HEALTH & SAFETY MANAGEMENT

5.1. Overall Supervision and Responsibility for OH&S

The Client and/or its Agent shall ensure that the Principal Contractor implements and maintains the agreed and approved H&S Plan. Failure on the part of the Client or Agent to comply with this requirement will not relieve the Principal Contractor from any one or more of his/her duties under the Act and Regulations.

5.2. 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 and other Regulations shall be made to ensure compliance to the Act, Regulations and SANS Standards.

LEGAL DOCUMENTATION/APPOINTMENTS

The following documents must be provided in the Health and Safety Plan (H&SP):

- Health and Safety Policy signed by CEO or statement of commitment to SHE
- Letter of good standing with the Compensation Commissioner, Federated Employers or similar insurer.
- HSE Organogram (or table), outlining the HSE Team, as well as the appointment(s) they have under the Act and Regulations (reference to specific section/regulation applicable to appointment)
- The competency of each member of the HSE Team must be provided and should include knowledge, training, experience & qualifications specific to the appointment.

Signed copies of the following legal appointments must be provided in the Health, Safety and Environmental Plan:

APPOINTMENT	OHS-ACT / REGULATION REFERENCE
Section 16.2 appointment	Section 16.2
HSE Representative (if necessary)	Section 17(1)
Incident Investigator	GAR 9(2)
First Aiders	GSR 3(4)
Fire Fighters	ER 9 & CR 29
Risk Assessor	HCS Reg (Incl. Asbestos & Lead); CR 9

The following information must be provided in the H&SP:

- Indicate the estimated number of employees to be working on site.
- Indicate the expected number of sub-contractors to be appointed by the Principal Contractor.

The following competent persons, where applicable, shall be appointed in writing by the Principal Contractor, prior to any work being carried out, and shall adhere to the requirements of the specific sub-regulations.

The competency of each of these appointed competent persons must be provided and should include knowledge, training, experience & qualifications specific to the appointment.

APPOINTMENT	OHS-ACT / REGULATION REFERENCE
Construction Manager	CR 8 (1)
Assistant Construction Manager	CR 8 (2)
Construction H&S Officer where applicable	CR 8 (5)
Construction Supervisor	CR 8 (7)
Construction Assistant Supervisor	CR 8(8)
Risk assessor	CR 9(1)
Fall Protection Competent Person	CR 10 (1)
Temporary works competent person	CR12 (2)
Excavation Work Supervisor	CR 13 (1)(a)
Demolition Work	CR 14 (1)
Competent Person (Use of Explosives for Demolition Work)	CR14(11)
Scaffolding Erector/ Team Leader/ Inspector	CR 16 (1)
Suspended platform Competent Person	CR 17(1)
Rope Access Work Competent Person	CR 18 (1) (a)
Material Hoist Competent Person	CR 19(8)(a)
Bulk Mixing Plant Competent Person	CR 20 (1)
Explosive Powered Tools Competent Person	CR 21(2)(b)
Construction Vehicle and Mobile Plant Competent Person	CR23 (1)(d)
Electrical Machinery Competent Person	CR 24 (c)
Stacking and Storage Supervisor	CR 28 (a)
Fire Equipment Inspector	CR 29(h)

Indicate in the H&SP, which of these listed appointments are applicable to the construction work in question (project specific).

No work involving any of the listed appointments may be performed without the knowledge and approval of an appointed competent person.

5.3 Communication & Liaison

5.2.1 The Principal Contractor will communicate all health and safety concerns with the DPW Health and Safety Officer.

6. RESPONSIBILITIES

6.1 Client/Agent

6.1.2 The Client/Agent shall discuss and negotiate with the Principal Contractor the contents of the health and safety plan and when compliant, approve the plan.

6.2 Principal Contractor

6.2.1 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, notify the Department of Labour of the intended construction. Annexure 2 of this construction regulation contains a "Notification of Construction Work" form. The Principal Contractor shall submit the notification in writing prior to commencement of work and inform the Client or his Agent accordingly.

6.2.2 The Principal Contractor shall ensure that he is fully conversant with the requirements of this Specification and all relevant health and safety legislation.

6.2.3 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.

6.2.4 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.

6.2.5 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.

6.2.6 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.)

- 6.2.7 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.
- 6.2.8 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, an Inspector, Employee or Sub-contractor.
- 6.2.9 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.
- 6.2.10 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.
- 6.2.11 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.
- 6.2.12 A letter of good standing in terms of COIDA (Compensation Commissioner) must be submitted to DPW.

7. SCOPE OF WORK

Construction of the new magistrate office. These specifications are applicable to the specific scope of work pertaining to the above-mentioned project as detailed in the tender documents.

8. HEALTH AND SAFETY FILE

- a) The Principal Contractor must, in terms of Construction Regulation 7(7), 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 shall be provided to the Client and/or its Agent.
- b) 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

9. RISK ASSESSMENTS

In terms of Construction Regulations 5 the Client will prepare a baseline risk assessment for the construction work project. The Principal Contractor shall, before commencement of any construction work and during the construction work, have risk assessments performed by a competent person appointed in writing, which risk assessments form part of the health and safety plan to be applied on site, and must include –

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

The following hazards are identified:

- Drilling (Breaking of walls)
- Formwork and support work
- Scaffolding
- Construction vehicles and mobile equipment
- Electrical installations and electrical machinery
- Housekeeping
- Stacking and storage practices
- Fire risks and fire precautions
- Use of jackhammers
- Hot work (steel cutting and welding)
- Portable electrical tools
- Intoxicated persons on site
- Use of ladders
- Impact of construction work upon occupants of buildings not evacuated for the duration of the work
- Working at height (fall protection)
- Noise
- Potential presence of asbestos that forms part of the structure (cement fibre)
- Dust

Site Specific risk assessment of the above must be submitted to DPW before commencement of work.

10. HEALTH AND SAFETY POLICY

Each contractor to submit a suitable documented Health and Safety Policy as required by Section 7 of the OHS Act.

11. IDENTIFICATION OF HAZARDS AND DEVELOPMENT OF RISK ASSESSMENTS, STANDARD WORKING PROCEDURES (SWP) AND METHOD STATEMENTS

The Principal Contractor is required to develop Risk Assessments, 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 programme 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 and/or its Agent on its behalf

The Client and/or its Agent on its behalf will be conducting Periodic Audits at times agreed with the Principal Contractor Audit to comply with Construction Regulation 4(1)(d) to ensure that the principal Contractor has implemented, is adhering to and is maintaining the agreed and approved OH&S Plan.

12.3 Reports

- a) The Principal Contractor shall report all incidents where an employee is injured on duty to the extent that he/she:
- i. dies
 - ii. becomes unconscious
 - iii. loses a limb or part of a limb
 - iv. 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:

- i. a major incident occurred
 - ii. the health or safety of any person was endangered
 - iii. where a dangerous substance was spilled
 - iv. the uncontrolled release of any substance under pressure took place
 - v. machinery or any part of machinery fractured or failed resulting in flying, falling or uncontrolled moving objects
 - vi. 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 and/or its Agent on its behalf.
- b) 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.
- c) The Principal Contractor is required to provide the Client and/or its Agent on its behalf with a monthly "SHE Risk Management Report".
- d) 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.

12.4 Review

The Principal Contractor is to review the Hazard Identification, Risk Assessments and Standard Work Processes at each Production Planning and Progress Report meeting as the construction work develops and progresses and each time changes are made to the designs, plans and construction methods and processes.

The Principal Contractor 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

a) Site OH&S Rules

The Principal Contractor must develop a set of site-specific OH&S rules that will be applied to regulate the Health and Safety Plan and associated aspects of the construction. 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.

b) Security Arrangements

The Principal Contractor must establish site access rules and implement and maintain these throughout the construction period.

12.6 Training

a) General Induction Training

All employees of the Principal and other Contractors must be in possession of proof of General Induction training

b) Other Training

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

12.7 Accident and Incident Investigation

The Principal Contractor is responsible to oversee the investigation of all accidents/incidents where employees and non-employees were injured to the extent that he/she/they had to receive first aid or be referred for medical treatment by a doctor, hospital or clinic. (General Administrative Regulation 9)

The Principal Contractor is responsible for the investigation of all non-injury incidents as described in Section 24 (1) (b) & (c) of the Act and keeping a record of the results of such investigations including the steps taken to prevent similar incidents 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.

13 OUTLINED DATA, REFERENCES AND INFORMATION ON CERTAIN AND/OR SPECIFIC OBLIGATORY REQUIREMENTS TO ENSURE COMPLIANCE

OHS Act Section/ Regulation	Subject	Requirements
Construction. Regulation	Notice of carrying out Construction work	<ul style="list-style-type: none"> • Department of Labour notified • Copy of Notice available on Site
General Admin. Regulation 4	Copy of OH&S Act (Act 85 of 1993)	<ul style="list-style-type: none"> • Updated copy of Act & Regulations on site. • Readily available for perusal by employees.
COID Act Section 80	Registration with Compens. Insurer	<ul style="list-style-type: none"> • Written proof of registration/Letter of good standing available on Site
Construction. Regulation 4 & 5(1)	H&S Specification & Programme	<ul style="list-style-type: none"> • H&S Spec received from Client and/or its Agent on its behalf • OH&S programme developed & Updated regularly
Section 8(2)(d) Construction. Regulation	Hazard Identification & Risk Assessment	<ul style="list-style-type: none"> • Hazard Identification carried out/Recorded • Risk Assessment and – Plan drawn up/Updated • RA Plan available on Site • Employees/Sub-Contractors informed/trained
Section 16(2)	Assigned duties (Managers)	<ul style="list-style-type: none"> • Responsibility of complying with the OH&S Act assigned to other person/s by CEO.
Section 37(1) & (2)	Agreement with Mandatories/ (Sub-)Contractors	<ul style="list-style-type: none"> • Written agreement with (Sub-)Contractors • List of Subcontractors displayed. • Proof of Registration with Compensation Insurer/Letter of Good Standing
Section 24 & General Admin. Regulation 8 COID Act Sect.38, 39 & 41	Reporting of Incidents (Dept. of Labour)	<ul style="list-style-type: none"> • 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

General Admin. Regulation 9	Investigation and Recording of Incidents	<ul style="list-style-type: none"> • 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 Driven Machinery Regulations 18 & 19	Cranes & Lifting Machines Equipment	<ul style="list-style-type: none"> • Competent person appointed in writing to inspect Cranes, Lifting Machines & Equipment • Written Proof of Competence of above appointee available on Site. • Cranes & Lifting tackle identified/numbered • Register kept for Lifting Tackle • Log Book kept for each individual Crane • Inspection: - All cranes - daily by operator <ul style="list-style-type: none"> - Tower Crane/s - after erection/6monthly - Other cranes - annually by comp. person • - Lifting tackle(slings/ropes/chain slings etc.) - daily or before every new application
General Safety Regulation 3	First Aid	<ul style="list-style-type: none"> • 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 • PSE Risk Assessment carried out • Items of PSE prescribed/use enforced
General Safety Regulation 2	Personal Safety Equipment (PSE)	

		<ul style="list-style-type: none"> • Records of Issue kept • Undertaking by Employee to use/wear PSE • PSE remain property of Employer, not to be removed from premises GSR 2(4)
General Safety Regulation 13A	Inspection of Ladders	<ul style="list-style-type: none"> • Competent person appointed in writing to inspect Ladders • Ladders inspected at arrival on site and weekly there after. Inspections register kept • Application of the types of ladders (wooden, aluminium etc.) regulated by training and inspections and noted in register
Asbestos Regulations 5	Information and training	<ul style="list-style-type: none"> • Ensure that employees are adequately informed and trained on both practical aspects and theoretical knowledge.
Asbestos Regulations 17	Personal Protective equipment (PPE)	<ul style="list-style-type: none"> • Ensuring suitable PPE, storing of PPE, disposal of such PPE and that persons exposure is adequately controlled.
Asbestos Regulations 20	Disposal of asbestos	<ul style="list-style-type: none"> • Safe disposal and handling of asbestos or asbestos containing material.

14. LOCKOUT PROCEDURE

Contractors undertaking maintenance and repair work must submit a suitably documented lockout/tag-out procedure to be approved before work commences.

15. HOUSEKEEPING

Good housekeeping will be maintained at all times as per Construction Regulation No. 25. 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.



16. ELECTRICAL EMERGENCY RESPONSE PROCEDURE

Contractors undertaking electrical maintenance and repair work must submit a suitably documented Electrical Emergency Response Procedure to be approved before work commences.

OTHER TECHNICAL SPECIFICATIONS THAT ARE REQUIRED

**ELECTRICAL
INSTALLATION SPECIFICATION
FOR
HANOVER: MAGISTRATE OFFICE HERITAGE: REPAIRS AND
RENOVATIONS: ELECTRICAL ENGINEERING SERVICES**

WCS: 055335

<p>Prepared for:</p>  <p>public works Department: Public Works REPUBLIC OF SOUTH AFRICA</p> <p>DEPARTMENT OF PUBLIC WORKS PRIVATE BAG X229 PRETORIA 0001</p>	<p>Prepared by:</p>  <p>MMT CONSULTING ENGINEERS (PTY) LTD.</p> <p>MMT CONSULTING ENGINEERS P.O. BOX 68383 BRYANSTON JOHANNESBURG 2021.</p>
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SEPTEMBER 2022

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NOTICE TO TENDERERS

1. The tenderer for the principal contract shall submit additional information regarding the installer of the Electrical Installation together with the returnables enclosed with the tender enquiry documents

SPECIFICATION FOR ELECTRICAL WORKS

PART 1 - GENERAL

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PART 1 - GENERAL

1 TESTS

After completion of the works and before first delivery is taken, a full test will be carried out on the installation for a period of sufficient duration to determine the satisfactory working thereof. During this period the installations will be inspected and the Contractor shall make good, to the satisfaction of the Representative/Agent, any defects which may arise.

The Contractor shall provide all instruments and equipment required for testing and any water, power and fuel required for the commissioning and testing of the installations at completion.

2 MAINTENANCE OF INSTALLATIONS

With effect from the date of the First Delivery Certificate the Contractor shall at his own expense undertake the regular servicing of the installation during the maintenance period and shall make all adjustments necessary for the correct operation thereof.

If during the said period the installations is not in working order for any reason for which the Contractor is responsible, or if the installations develops defects, he shall immediately upon being notified thereof take steps to remedy the defects and make any necessary adjustments.

Should such stoppages however be so frequent as to become troublesome, or should the installations otherwise prove unsatisfactory during the said period the Contractor shall, if called upon by the Representative/Agent or the Director-General, at his own expense replace the whole of the installations or such parts thereof as the Representative/Agent or the Director-General may deem necessary with apparatus specified by the Representative/Agent or the Director-General.

3 REGULATIONS

The installation shall be erected and tested in accordance with the SANS Regulations.

4 NOTICES AND FEES

The Contractor shall give all notices required by and pay all necessary fees, including any inspection fees, which may be due to the local Supply Authority.

On production of the official account, only the net amount of the fee charged by the Supply Authority for connection of the installation to the supply mains will be refunded to the Contractor by the Client.

5 SCHEDULE OF FITTINGS

In all instances where schedule of light, socket outlet and power points are attached to or included on the drawings, these schedules are to be regarded as forming part of the specification.

6 QUALITY OF MATERIALS

Only materials of first-class quality shall be used and all materials shall be subject to the approval of the Principal Agent/Client.

Wherever applicable the material is to comply with the relevant SANS standards, specifications, or to British Standard Specifications, where no SABS Specifications exist.

Materials wherever possible, must be of South African manufacture.

7 CONDUIT AND ACCESSORIES

The type of conduit and accessories required for the service, i.e. whether the conduit and accessories shall be of the screwed type, plain-end type or of the non-metallic type and whether metallic conduit shall be galvanised, is specified in Part 2 of this specification.

Unless other methods of installation are specified for certain circuits, the installation shall be in conduit throughout. No open wiring in roof spaces or elsewhere will be permitted.

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.

- a) Screwed metallic conduit and accessories: SANS 1065, parts 1 and 2.
- b) Plain-end metallic conduit and accessories: SANS 1065, parts 1 and 2.
- c) Non-metallic conduit and accessories: SANS 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, switchboxes, draw-boxes, etc.

Draw-boxes are to be provided in accordance with the "Wiring Code" and wherever necessary to facilitate easy wiring.

For light and socket outlet circuits, the conduit used shall have an external diameter of 20mm. In all other instances the sizes of conduit shall be in accordance with the "Wiring Code" for the specified number and size of conductors, unless otherwise directed in part 2 of this specification or indicated on the drawings.

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 use of such bends is essential.

All metallic conduits shall be manufactured of mild steel with a minimum thickness of 1,2mm for plain-end conduit and 1,6mm in respect of screwed conduit.

Under no circumstances will conduit having a wall thickness of less than 1.6mm be allowed in screeding laid on top of concrete slabs.

Bending and setting of conduit must be done with special bending apparatus manufactured for the purpose and which are obtainable from the manufacturers of the conduit systems. Damage to conduit resulting from the use of incorrect bending apparatus or methods applied must on indication by the Client's inspectorate staff, be completely removed and rectified and any wiring already drawn into such damaged conduits must be completely renewed at the Contractor's expense.

Conduit and conduit accessories used for flame-proof or explosion proof installations and for the suspension of luminaires as well as all load bearing conduit shall in all instances be of the metallic screwed type.

Tenderers must ensure that general approval of the proposed conduit system to be used is obtained from the local electricity supply authority prior to the submission of their tender. Under no circumstances will consideration be given by the Client to any claim submitted by the Contractor, which may result from a lack of knowledge in regard to the supply authority's requirements.

8 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.

Nail 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 450 mm. 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.

9 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 levelled 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 coupling 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 a 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.

10 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 preferable 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 slabs are cast, all conduit droppers to switchboards shall be neatly spaced and rigidly fixed.

11 FLEXIBLE CONNECTIONS FOR CONNECTING UP OF STOVES, MACHINES, ETC.

Flexible tubing connections shall be of galvanised steel construction, and in damp situations of the plastic sheathed galvanised steel type. Other types may only be used subject to the prior approval of the Client's site electrical representative.

Connectors for coupling onto the flexible tubing shall be of the gland or screw-in types, manufactured of either brass or cadmium or zinc plated mild steel, and the connectors after having been fixed onto the tubing, shall be durable and mechanically sound.

Aluminium and zinc alloy connectors will not be acceptable.

12 WIRING:

Except where otherwise specified in Part 2 of 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.

Unless otherwise specified in Part 2 of this specification or indicated on the service drawings, 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 2,5mm² conductors and a 2,5mm²-earth conductor. For socket outlet circuits the wiring shall comprise 4mm² conductors and a 2,5mm²-earth conductor. In certain instances, as will be directed in Part 2 of this specification, the sizes of the aforementioned conductors may be increased for specified circuits. Sizes of conductors to be drawn into conduit in all other instances, such as feeders to distribution boards, power points etc., shall be as specified elsewhere in this specification or indicated on the drawings. Sizes of conductors not specified must be determined in accordance with the "Wiring Code".

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.

13 SWITCHES AND SOCKET OUTLETS

All light switches shall be installed at 1,4m above finished floor level and all socket outlets as directed in the Schedule of Fittings which forms part of this specification or alternatively the height of socket outlets may be indicated on the drawings.

14 SWITCHGEAR

Switchgear, which includes circuit breakers, iron-clad switches, interlocked switch-socket outlet units, contactors, time switches, etc., shall be equal and similar in quality to such brands as may be specified.

For uniform appearance of switchboards, only one approved make of each of the different classes of switchgear mentioned in the Quality Specifications shall be used throughout the installations.

15 SWITCHBOARDS/DISTRIBUTION BOARDS

All boards shall be in accordance with the types as specified, be constructed according to the detail or type drawings and must be approved by the Engineer/Client before installation.

In all instances where provision is to be made on boards for the supply authority's main switch and/or metering equipment the contractor must ensure that all requirements of the authorities concerned in this respect are met.

All outdoor distribution boards shall be weather and vermin proof and shall be mounted on a plinth and have brick work around it except in front of the doors. All out door distribution boards shall be made from CR12 metal.

Any construction or standard type aboard proposed, as an alternative to that specified must have the prior approval of the Client.

All busbars, wiring, terminals, etc., are to be adequately insulated and all wiring is to enter the switchgear from the back of the board. The switchgear shall be mounted within the boards to give a flush front panel. Cable and boxes and other ancillary equipment must be provided where required.

Clearly engraved labels are to be mounted on or below every switch. The working of the labels in English and Afrikaans, is to be according to the lay-out drawings or as directed by the Client's representative and must be confirmed on site. Flush mounted boards to be installed with the top of the board 2,0m above the finished floor level.

16 WORKMANSHIP AND STAFF

Except in the case of electrical installations supplied by a single-phase electricity supply at the point of supply, an accredited person shall exercise general control over all electrical installation work being carried out.

The workmanship shall be of the highest grade and to the satisfaction of the Client.

All inferior work shall, on indication by the Client's inspecting officers, immediately be removed and rectified by and at the expense of the Contractor.

17 CERTIFICATE OF COMPLIANCE

On completion of the service, a certificate of compliance must be issued to the Client's Representative/Agent in terms of the Occupational Health and Safety Act, 1993 (Act 85 of 1993).

18 EARTHING OF INSTALLATION

Main earthing

The type of main earthing must be as required by the supply authority if other than the Clients, and in any event as directed by the Client's representative, who may require additional earthing to meet test standards.

Where required an earth mat shall be provided, the minimum size, unless otherwise specified, being 1,0m x 1,0m and consisting of 4mm diameter hard-drawn bare copper wires at 250mm centres, brazed at all intersections.

Alternatively, or additionally earth rods or trench earths may be required as specified or directed by the Client's authorised representative.

Installations shall be effectively earthed in accordance with the "Wiring Code" and to the requirements of the supply authority. All earth conductors shall be stranded copper with or without green PVC installation.

Connection from the main earth bar on the main board must be made to the cold water main, the incoming service earth conductor, if any and the earth mat or other local electrode by means of 12mm x 1,60 mm solid copper strapping or 16 mm² stranded (not solid) bare copper wire or such conductor as the Client's representative may direct. Main earth copper strapping, where installed below 3m from ground level, must be run in 20 mm diameter conduit securely fixed to the walls.

All other hot and cold-water pipes shall be connected with 12mm x 0,8mm perforated for 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 150-mm centres. In all cases where metal water pipes, down pipes, flues, etc., are positioned within 1,6m 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.

Roofs, gutters and down pipes

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 and each switchboard. The roof and gutters shall be connected at 15m intervals to this conductor by means of 12mm X 0,8mm copper strapping (not conductors) and galvanised bolts and nuts. Self-tapping screws are not acceptable. Where service connections consist of underground supplies, the above requirements are not applicable.

Sub-distribution boards

A separate earth connection shall be supplied between the earth busbar in each sub-distribution board and the earth busbar in the Main Switchboard. These 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 utilised where specified or approved.

Sub-circuits

The earth conductors of fall sub-circuits shall be connected to the earth busbar in the supply board in accordance with SANS 10142.

Ring Mains

Common earth conductors may be used where various circuits are installed in the same wire way in accordance with SANS 10142. In such instances the sizes of earth conductors shall be equivalent to that of the largest current carrying conductor installed in the wire way, alternatively the size of the conductor shall be as directed 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.

Non-metallic Conduit

Where non-metallic conduit is specified or allowed, the installation shall comply with the Client's standard quality specification for "conduit and conduit accessories".

Standard copper earth conductors shall be installed in the conduits and fixed securely to all metal appliances and equipment, including metal 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.

Flexible Conduit

An earth conductor shall be installed in all non-metals flexible conduits. 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.

Connection

Under no circumstances shall any connection points, bolts, screws, etc., used for earthing be utilised 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 proper terminals, the end shall be tinned and lugged.

19 MOUNTING AND POSITIONING OF LUMINAIRES

The Contractor is to note that in the case of board and acoustic tile ceilings, i.e. as opposed to concrete slabs, close co-operation with the building contractor is necessary to ensure that as far as possible the luminaires are symmetrically positioned with regard to the ceiling pattern.

The layout of the luminaires as indicated on the drawings must be adhered to as far as possible and must be confirmed with the Client's representative.

Fluorescent luminaires installed against concrete ceilings shall be screwed to the outlet boxes and in addition 2 x 6mm expansion or other approved type fixing bolts are to be provided. The bolts are to be $\frac{3}{4}$ of the length of the luminaires apart.

Fluorescent luminaires to be mounted on board ceilings shall be secured by means of two 40mm x No. 10 round head screws and washers. The luminaires shall also be bonded to the circuit conduit by means of locknuts and brass bushes. The fixing screws are to be placed $\frac{3}{4}$ of the length of the fitting apart.

Earth conductors must be drawn in with the circuit wiring and connected to the earthing terminal of all fluorescent luminaires as well as other luminaires exposed to the weather in accordance with the "Wiring Code".

Incandescent luminaires are to be screwed directly to outlet boxes in concrete slabs. Against board ceilings the luminaires shall be secured to the bracing or joists by means of two 40mm x No. 8 round head screws.

PART 2: INSTALLATION DETAILS

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PART 2: INSTALLATION DETAILS

1 CABLE SLEEVE PIPES

Where cables cross under roadways, other services and where cables enter buildings, the cables shall be installed in asbestos-cement pipes, earthenware, or high-density polyethylene pipes.

The ends of all sleeves shall be sealed with a non-hardening watertight compound after the installation of cables. All sleeves intended for future use shall likewise be sealed.

2 NOTICES

The Contractor shall issue all notices and make the necessary arrangements with Supply Authorities, the Postmaster-General, and S.A. Transport Services, Provincial or National Road Authorities and other authorities as may be required with respect to the installation.

3 ELECTRICAL EQUIPMENT

All equipment and fittings supplied must be suitable for the relevant supply voltage and frequency and must be approved by the Client's representative.

4 DRAWINGS

The drawings generally show the scope and extent of the proposed work and shall not be held as showing every minute detail of the work to be executed.

The position of power points, switches and light points that may be influenced by built-in furniture must be established on site, prior to these items being built in.

5 BALANCING OF LOAD

The Contractor is required to balance the load as equally as possible over the multiphase supply.

6 SERVICE CONDITIONS

All plant shall be designed for the climatic conditions appertaining to the service.

7 SWITCHES AND SOCKET OUTLETS

The installation of switches and socket outlets must conform to clause 13 of Part 1 of this specification.

8 LIGHT FITTINGS AND LAMPS

The installation and mounting of luminaires must conform with clause 19 of Part 1 of this specification.

All fittings to be supplied by the Contractor shall have the approval of the Client. Incandescent lamps shall bear the approved mark of the S.A.B.S. and shall have the British light centre length.

The light fittings must be of the type specified in the Schedule of Light Fittings.

9 EARTHING AND BONDING

The Contractor will be responsible for all earthing and bonding of the building and installation. The earthing and bonding is to be carried out strictly as described in clause 18 of Part 1 of this specification and to the satisfaction of the Client's representative.

10 MAINTENANCE OF ELECTRICAL SUPPLY

All interruptions of the electrical supply, that may be necessary for the execution of the work, will be subject to prior arrangement between the Contractor and the user Client and the Client's representative.

11 EXTENT OF WORK

The work covered by this contract comprises the complete electrical installation, in working order, as shown on the drawings and as per this specification, including the supply and installation of all fittings and also the installation of such equipment supplied by the Client.

12 SUPPLY AND CONNECTION

The supply will be at 400/230 Volt 50Hz.

The Contractor will be responsible for the supply and installation of the supply cable from the meter box to the main low-tension distribution board (MDB). The size and length of the cable is listed and measured in the Bills of Quantities.

13 CONDUIT AND WIRING

Conduit and conduit accessories shall be galvanised screwed conduit or galvanised plain end conduit in accordance with SABS 162, 763 and 1007 respectively.

All conduits, regardless of the system employed, shall be installed strictly as described in the applicable paragraphs of clauses 4 to 8 of Part 1 of the specification. Wiring of the installation shall be carried out as directed in clause 9 part 1 of this specification.

Where plain end conduit is offered all switches and light fittings must be supplied with a permanent earth terminal for the connection of the earth wire.

Lugs held by switch fixing screws or self tapping screws will not be acceptable.

14 CABLES

The Contractor shall supply and completely install all distribution cables as indicated on the drawings and listed in the Schedule of Cables.

The storage, transportation, handling and laying of the cables shall be according to first class practice, and the contractor shall have adequate and suitable equipment and labour to ensure that no damage is done to cables during such operations.

The cable-trenches shall be excavated to a depth of 0,9m deep below ground level and shall be 450mm wide for one to three cables, and the width shall be increased where more than three cables are laid together so that the cables may be placed at least two cable diameters apart throughout the run. The bottom of the trench shall be level and clean and the bottom and sites free from rocks or stones liable to cause damage to the cable.

The Contractor must take all necessary precautions to prevent the trenching work being in any way a hazard to the personnel and public and to safeguard all structures, roads, sewage works or other property on the site from any risk of subsidence and damage.

In the trenches the cables shall be laid on a 75mm thick bed of earth and be covered with a 150-mm layer of earth before the trench is filled in.

All joints in underground cables and terminations shall be made either by means of compound filled boxes according to the best-established practice by competent cable jointers using first class materials or by means of approved epoxy-resin pressure type jointing kits such as "Scotchcast". Epoxy-resin joints must be made entirely in

accordance with the manufacturer's instructions and with materials stipulated in such instructions. Low tension PVCA cables are to be made off with sealing glands and materials designed for this purpose which must be of an approved make. Where cables are cut and not immediately made off, the ends are to be sealed without delay.

The laying of cables shall not be commenced until the trenches have been inspected and approved. The cable shall be removed from the drum in such a way that no twisting, tension or mechanical damage is caused and must be adequately supported at intervals during the whole operation. Particular care must be exercised where it is necessary to draw cables through pipes and ducts to avoid abrasion, elongation or distortion of any kind. The ends of such pipes and ducts shall be sealed to approval after drawing in of the cables.

Backfilling (after bedding) of the trenches is to be carried out with a proper grading of the material to ensure settling without voids, and the material is to be tamped down after the addition of every 150mm. The surface is to be made good as required.

On each completed section of the laid and jointed cable, the insulation resistance shall be tested to approval with an approved "Megger" type instrument of not less than 500 V for low tension cables.

Earth continuity conductors are to be run with all underground cables constituting part of a low-tension distribution system. Such continuity conductors are to be stranded bare copper of a cross-sectional area equal to at least half that of one of the live conductors of the cable but shall not be less than 2.5mm² or more than 70mm². A single earth wire may be used as earth continuity conductor for two or more cables run together, branch earth wires being brazed on where required.

14.1 LAYING, JOINTING AND MAKING OFF OF ELECTRICAL CABLES

[The requirements specified hereafter, are aimed essentially at high tension cable but are also valid for low tension cable, where applicable.]

1. The use of the term "Inspector" includes the engineer or inspector of the Client or an empowered person of the concerned supervising consulting engineer's firm.
2. No cable is to be laid before the cable trench is approved and the soil qualification of the excavation is agreed upon by the Contractor and inspector.
3. After the cable has been laid and before the cable trench is back-filled the inspector must ensure that the cable is properly bedded and that there is no undesirable material included in the bedding layer.
4. All cable jointing and the making off of the cables must only be carried out by qualified experienced cable jointers. Helpers of the jointers may not saw, strip, cut, solder, etc. The cable and other work undertaken by them must be carried out under the strict and constant supervision of the jointer.
5. Before the Contractor allows the jointer to commence with the jointing work or making off of the cable (making off is recognized as half a joint) he must take care and ensure:
 - 5.1 that he has adequate and suitable material available to complete the joint properly and efficiently. Special attention must be given to ensure the cable ferrules and cable lugs are of tinned copper and of sufficient size. The length of the jointing lugs must be at least six times the diameter of the conductor,
 - 5.2 that the joint pit is dry and that all loose stones and material are removed,
 - 5.3 that the walls and banks of the joint pit are reasonable firm and free from loose material which can fall into the pit,

- 5.4 that the necessary cofferdams or retaining walls are made to stop the flow of water into the joint pit,
- 5.5 that the joint pit is provided with suitable groundsheets so that the jointing work is carried out in clean conditions,
- 5.6 that the necessary tents or sails are installed over the joint pit to effectively avert unexpected rainfall and that sufficient light or lighting is provided,
- 5.7 that the necessary means are available to efficiently seal the jointing or cable end when an unexpected storm or cloudburst occurs, regardless of how far the work has progressed,
- 5.8 that the cables and other materials are dry, undamaged and in all respects are suitable for the joint work or making off,
- 5.9 that the heating of cable oil, cable compound, plumbers' metal and solder is arranged that they are at the correct temperature when required so that the cable is not unnecessarily exposed to the atmosphere and consequently the ingress of moisture (care must be taken of overheating)

Flow temperatures of cable oil and compound must be determined with suitable thermometers. Cable oil and compound must not be heated to exceed the temperatures given on the containers and precaution must be taken to ensure that the tin is not overheated in one position. The whole mass must be evenly and proportionally heated.

(Temperatures of solder and plumbers' metal may be tested with brown paper (testing time: 3 seconds). The paper must colour slightly - not black or burnt.

- 6. Before the paper-insulated cables are joined, they must be tested for the presence of moisture by the cable jointers test. This consists of the insertion of a piece of unhandled insulated impregnated paper tape in warm cable oil heated to a temperature of $130 \pm 5^{\circ}\text{C}$.

Froth on the surface of the oil is an indication that moisture is present in the impregnated insulation and the amount of the froth gives an indication of the moisture present.

- 7. If the cable contains moisture or is found to be otherwise unsuitable for jointing or making of the inspector is to be notified immediately and he will issue the necessary instruction to cope with the situation.
- 8. The joint or making-off of paper insulated cables must not be commenced during rainy weather.
- 9. Once a joint is in progress the jointer must proceed with the joint until it is complete and before he leaves the site.
- 10. The jointer must ensure that the material and his tools are dry at all times, reasonably clean and absolutely free from soil.
- 11. Relating to the jointing of the cable the following requirements apply:
 - 11.1 All jointing must be carried out in accordance with recognized and tried techniques and comply strictly with the instructions given by the supplier of the jointing kit.
 - 11.2 The cables must be twisted by hand so that the cores can be joined according to the core numbers. If necessary, the cable is to be exposed for a short distance to accomplish this. Under no circumstances may the cores in a joint be crossed so as to enable cores to be joined according to the core numbers. If it is not possible to twist the cables so that the preceding requirements can be

met, then cores are to be joined in the normal way without any consideration of the core numbers.

11.3 Normally the cables will have profile conductors. The conductors shall be pinched with gas pliers to form a circular section, bound with binding wire so that they do not spread, and then tinned before jointing.

11.4 Jointing ferrules, the length of which are at least 6 times the diameter of the conductors, must be slid over the conductor ends to be joined and pinched tightly. Then they are soldered by means of the ladle process whilst being pinched further closed.

Use resin only as a flux. The slot opening in the ferrule must be completely filled, including all depressions.

Remove all superfluous metal with a cloth dipped in tallow. Work during the soldering process must be from top to bottom. Rub the ferrule smooth and clean with aluminium oxide tape after it has cooled down to ensure that there are not any sharp points or edges.

NB: The spaces between the conductor strands must be completely filled by soldering process and must be carried out quick enough to prevent the paper insulation from burning or drying out unnecessarily.

11.5 After the ferrules have been rubbed smooth and clean, they and the exposed cores must be treated with hot cable oil (110°C) to remove all dust and moisture. These parts are to be thoroughly basted with the oil.

11.6 The joiner must take care that his hands are dry and clean before the joint is insulated. Also, the insulating tape which is to be used must first be immersed in warm cable oil (110°C) for a sufficient period to ensure that no moisture is present.

11.7 After the individual cores have been installed, they must be well basted with hot cable oil and again after the applicable separator and/or belt insulation tape is applied before the lead joint sleeve is placed in position.

11.8 The lead joint sleeve must be thoroughly cleaned and prepared before it is placed on the cable and must be kept clean during the whole jointing process. Seal the filling apertures of the sleeve with tape until the sleeve is ready for compound filling.

11.9 The plumbing joints employed to solder the joint sleeve to the cable sheath, must be cooled off with tallow and the joint sleeve is to be filled with compound while it is still warm. Top up continuously until the joint is completely filled to compensate for the compound shrinkage.

11.10 The outer joint box must be clean and free from corrosion. After it has been placed in position it must be slightly heated before being filled with compound. Top up until completely full.

12. As far as cable end boxes are concerned the requirements as set out above are valid where applicable.

15. DISTRIBUTION BOARDS

In addition to clause 14 and clause 15 of Part 1 of this specification the following shall also be applicable to switchboards required for this service.

The Contractor shall supply and install the distribution boards as indicated on the drawings and listed in the distribution Board Schedule. All distribution be approved by the Client's representative.

The following types of distribution boards are required for the service:

Surface Mounted with doors

16. SCHEDULE OF LIGHT FITINGS

The light fittings and accessories shall be approved by the Client/Clients representative.

1	70W LED, recessed fluorescent luminaire with polycarbonate body and opal acrylic diffuser complete with lamps and electronic control gear, drivers etc. - TYPE A
2	Same as above with 1 hour emergency battery back-up system TYPE AE
3	18W LED decorative down light fitting complete with lamps, drivers, electronic control gear, etc. - TYPE B
4	15W LED decorative OUTDOOR Bulkhead light fitting complete with lamps, drivers, electronic control gear, etc. - TYPE C
5	10W LED decorative down light fitting complete with lamps, drivers, electronic control gear, etc. - TYPE D
6	70W LED, surface fluorescent luminaire with polycarbonate body and opal acrylic diffuser complete with lamps and electronic control gear, drivers etc. - TYPE AS
7	36W LED batten light fitting surface mounted complete with lamps and electronic control gear, drivers etc. – TYPE E
8	9W LED bulkhead light fitting with RED diffuser wall mounted complete with lamps and electronic control gear, drivers etc. – TYPE R
9	100W LED Highbay light fitting with aluminum dome complete with suspending chain, lamps and electronic control gear, drivers etc. – TYPE HB
10	50W LED wall mounted flood light, IP65 complete with lamps and electronic control gear, drivers etc. –Type W
11	56W LED vandal resistant light fitting complete with lamps and electronic control gear, drivers etc. –Type V

17. SCHEDULE OF DISTRIBUTION BOARDS

The front panels of normal supply sections shall be painted in distinctive colours as follows:

Normal supply : White

Emergency supply : Signal Red

UPS supply : Violet/Blue

Indicated is the probable fault level rating (kA) of the busbars.

BOARD	TYPE	PANEL	FAULT LEVEL	LOAD kVA

PART C4: SITE INFORMATION

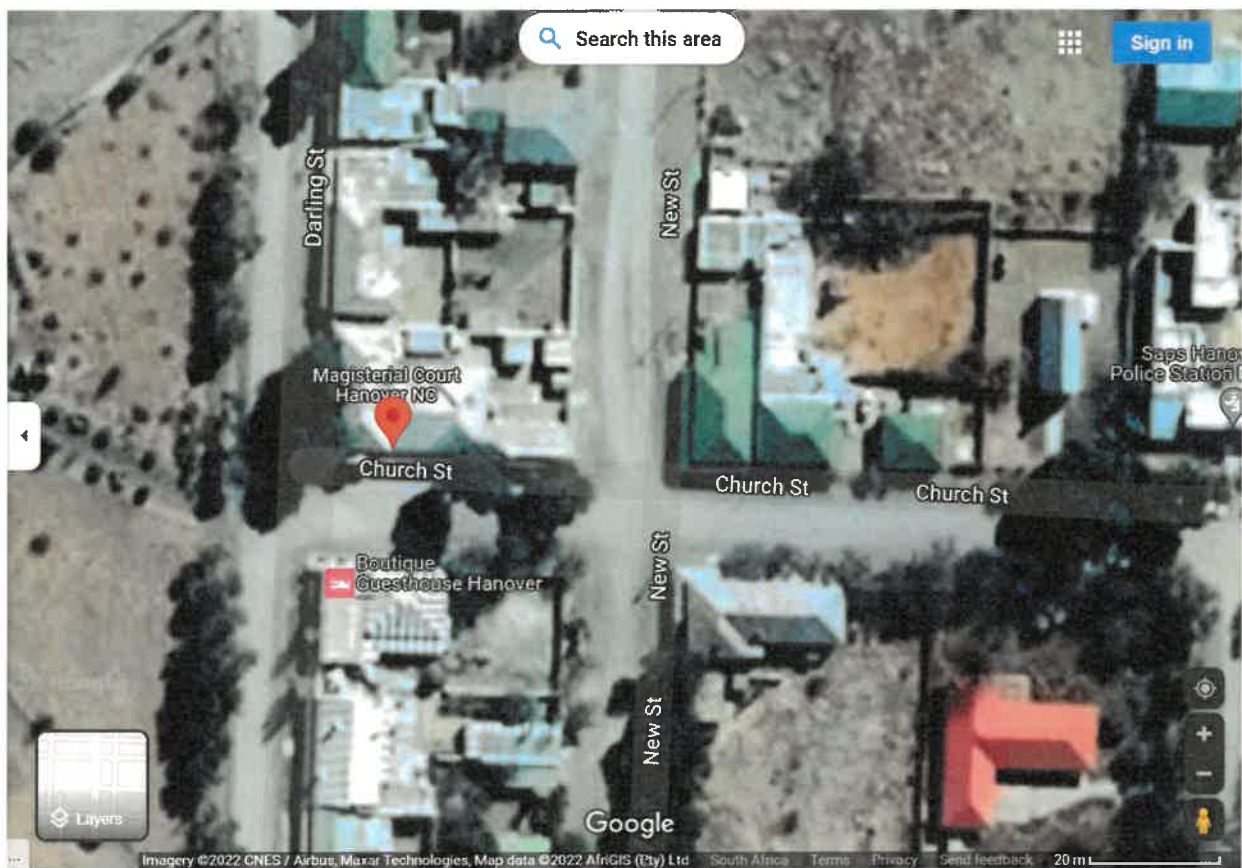
C4: SITE INFORMATION

PG-03.2 (EC) SITE INFORMATION – JBCC 2000 PRINCIPAL BUILDING AGREEMENT (EDITION 6.2 OF MAY 2018)

Project title:	<i>HANOVER MAGISTRATE'S OFFICE HERITAGE - REPAIRS AND RENOVATIONS</i>				
Tender no:	<i>KIM08/2022</i>	WCS no:	<i>055335</i>	Reference no:	<i>19/2/4/2/2/2374/10</i>

C4 Site Information

Construction will take place in an existing building, and which designated as a heritage building. Bidders to be aware that the site will be on use during construction and contractors to plan accordingly to minimise construction work impacts on the court operations.



Address of drosdy
 Burger St, Hanover, 7005
 Coordinates: -31.065211562914513, 24.44430714651782

Address of the magistrate court
 Magisterial Court Hanover NC, 1 Church St, Hanover, 7005
 Co-ordinates: -31.06656309798373, 24.442579036203323

