

GEORGE MUNICIPALITY



CIDB DOCUMENT FOR TENDER NO: GMT014/24-25
TENDER FOR THE APPOINTMENT OF CONTRACTORS FOR
EXECUTING CAPITAL PROJECTS, AS AND WHEN REQUIRED, FROM
DATE OF APPOINTMENT UNTIL 30 JUNE 2029

ENQUIRIES: Rasmus Esterhuysen
BRICK ROAD
GEORGE MUNICIPALITY
GEORGE INDUSTRIAL
(044) 801 9222

ISSUED BY:

P O BOX 19
GEORGE
6530

SUMMARY FOR TENDER OPENING PURPOSES

NAME OF BIDDER:

CENTRAL SUPPLIER DATABASE NO.: MAAA

Category EP 2: Total Price (All applicable
Taxes included)

R

Category EP 3: Total Price (All applicable
Taxes included)

R

Category EP 4: Total Price (All applicable
Taxes included)

R

PREFERENCES CLAIMED FOR:

B-BBEE Status Level of Contributor and Point Claimed:

Level: _____

Point Claimed: _____

Locality Status and Point Claimed:

Locality: _____

Point Claimed: _____

B-BBEE certificates submitted with the tender document MUST be VALID ORIGINAL B-BBEE CERTIFICATES or VALID CERTIFIED COPIES OF THE B-BBEE CERTIFICATES

TENDER CLOSING AT 12H00 ON THURSDAY, 20 August 2026

For official use.

Signatures of SCM Officials at Tender Opening

1.

2.

BIDDER CONTACT DETAILS

This information shall be used for any correspondence or contact with the bidder.

Please indicate whether you want to receive any correspondence via e-mail or send to your postal address by registered mail.

Name of Bidding Company:		Mark choice of correspondence with X
Postal Address:	 Postal Code:	
E-mail Address:		
Telephone Number:		
Cellular Number:		
Facsimile Number:		

GEORGE MUNICIPALITY

TENDER No. GMT014/24-25

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FROM DATE OF APPOINTMENT UNTIL 30 JUNE 2029**

GENERAL TENDER INFORMATION

TENDER ADVERTISED	: 16 July 2026
ESTIMATED CIDB CONTRACTOR GRADING DESIGNATION	: 2EP/3EP/4EP
COMPULSORY SITE VISIT/CLARIFICATION MEETING	: Monday 27 July 2026 at 11h30
VENUE FOR SITE VISIT/CLARIFICATION MEETING	: Banquet Hall, Civic Centre, York Street, George
CLOSING DATE	: 20 August 2026
CLOSING TIME	: 12H00
LOCATION OF TENDER BOX	: Tender Box at the George Municipality, on the Fifth Floor, Directorate: Financial Services, Supply Chain Management Unit, Civic Centre, York Street, George.

GEORGE MUNICIPALITY

DIRECTORATE: ELECTRICAL ENGINEERING SERVICES

TENDER NUMBER: GMT14/25-26

**TENDER FOR THE APPOINTMENT OF CONTRACTORS FOR THE
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FROM DATE OF APPOINTMENT UNTIL 30 JUNE 2029**

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**TENDER FOR TENDER FOR THE APPOINTMENT OF CONTRACTORS
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REQUIRED FROM DATE OF APPOINTMENT UNTIL 30 JUNE 2029**

The Tender (Part T)

PART T1 Tender Procedures

- T1.1 Tender Notice and Invitation to Tender
- T1.2 Tender Data

PART T2 Returnable Documents (All documents / schedules are returnable)

- T2.1 List of Returnable Schedules Required for Tender Evaluation and Returnable Schedules
- T2.2 Other documents that will be incorporated into the contract
- T2.3 Returnable Schedules that will be incorporated in the contract

GEORGE MUNICIPALITY

DIRECTORATE: ELECTRICAL ENGINEERING SERVICES

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DATE OF APPOINTMENT UNTIL 30 JUNE 2029**

Tender Notice and Invitation to Tender (T1.1)

Tenders word hiermee ingewag vir die tender vir die aanstelling van kontrakteurs vir die uitvoering van kapitaalprojekte op 'n "soos en wanneer vereis" basis, vanaf die datum van aanstelling tot 30 Junie 2029. Voltooide tenders in 'n verseëelde koevert, duidelik gemerk: Tender Nr.: GMT014/24-25, moet voor Donderdag, 20 Augustus 2026 om 12:00 in die tender bus by die George Munisipaliteit, Vyfde Vloer, Voorsieningskanaal Bestuurseenheid, Burgersentrum, Yorkstraat 71, George geplaas word. Geen tenders sal toegelaat word om na 12:00 in die tender bus geplaas te word nie. Tenders sal om 12:05 dieselfde dag in die Komiteekamer op Vyfde Vloer oopgemaak word. Laat of ongemerkte tenders sal nie oorweeg word nie. Geen tenders per faks of e-pos sal aanvaar word nie. Tenderaars moet by die CIDB geregistreer wees en dit word geraam dat tenderaars 'n CIDB kontrakteursgraderingsvlak van 2EP/3EP/4EP of hoër moet hê. 'n Verpligte inligtingsvergadering sal in die Banketsaal, York Straat, George op Maandag, 27 Julie 2026 om 11:30 gehou word. Indien die verpligte inligtingsvergadering nie bygewoon word nie, sal u tender gediskwalifiseer word. Tender dokumente is verkrygbaar teen 'n R309.35 nie-terugbetaalbare deposito by die Voorsieningskanaalbestuurseenheid op die Vyfde Vloer, Burgersentrum, Yorkstraat, George. Tender dokumente is gratis op die George Munisipaliteit se webblad beskikbaar: www.george.gov.za. Tenders sal as volg ge-evalueer en toegeken word: <u>Fase 1: Geskiktheidskriteria</u> Slegs tenderaars wat voldoen aan die volgende geskiktheidskriteria sal oorweeg word: • Terreinopsigter wat 'n gekwalifiseerde	Tenders are hereby invited for the tender for the appointment of contractors for the execution of capital projects, as and when required from date of appointment until 30 June 2029. Completed tenders in a sealed envelope, clearly marked: Tender No.: GMT014/24-25 must be placed in the tender box at the George Municipality on the Fifth Floor, Supply Chain Management Unit, Civic Centre, 71 York Street, George by no later than 12:00 on Thursday, 20 August 2026. Tenders are not allowed to be placed in the tender box after 12:00. Tenders will be opened on the same day in the Committee Room, Fifth Floor at 12:05. Late or unmarked tenders will not be considered. No tenders per fax or e-mail will be accepted. Bidders must be registered with the CIDB and it is estimated that bidders should have a CIDB contractor grading designation of 2EP/3EP/4EP or higher. Tenders to note to tender within their threshold. A compulsory briefing session will be held on Monday, 27 July 2026 at 11:30 in the Banquet Hall, York Street, George. Non-attendance of the compulsory briefing session will disqualify your tender. Tender documents are available at a non-refundable deposit of R309.35 each from the Supply Chain Management Unit, Fifth Floor, Civic Centre, York Street, George. Tender documents are available on the George Municipality's website: www.george.gov.za, free of charge. Tenders will be evaluated and awarded as follows: <u>Phase 1: Eligibility Criteria</u> Only tenderers who meet the following eligibility criteria will be considered: • Site Supervisor who is a Qualified Electrician/Linesman
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Elektrisiën/Lynwerker is, met 'n geldige ORHVS-sertifisering en 'n minimum van vyf (5) jaar toepaslike ervaring. Dien 'n afskrif van die ID, kwalifikasies, CV en geldige ORHVS-sertifikaat in. Hierdie persoon kan ook op 'n kontrakbasis aangestel word soos en wanneer nodig, maar die besonderhede van die persoon soos hierbo vermeld, moet saam met die tender ingedien word. (Indien 'n tenderaar nie oor 'n Terreinopsigter beskik wat 'n gekwalifiseerde Elektrisiën/Lynwerker met 'n geldige ORHVS-sertifikaat is nie, sal die tender nie vir verdere oorweging kwalifiseer nie.) Die Tenderaar moet as 'n Elektriese Kontrakteur by die Departement van Indiensneming en Arbeid (DoEL) geregistreer wees. Die registrasie moet vir die volle duur van die kontrak geldig bly. Dien 'n geldige registrasiesertifikaat as bewys in. <u>Fase 2: Funksionaliteit</u> Slegs tenderaars wat 'n minimum van 90 uit 120 punte behaal in fase 2, sal verder vir evaluering in fase 3 oorweeg word. <u>Fase 3: Prys, B-BBEE Status en Spesifieke Doelwitte</u> Tenders sal ge-evalueer en toegeken word in terme van die Wet op die Raamwerk vir Voorkeurverkrygingsbeleid (Wet 5 van 2000) Regulasies 2022; die George Munisipaliteit se Voorsieningskanaalbestuursbeleid sowel as die George Munisipaliteit se Voorkeurverkrygingsbeleid, waar 80 punte ten opsigte van die prys en 20 punte ten opsigte van B-BBEE status en spesifieke doelwitte toegeken sal word. Vir verdere inligting, kontak Mnr. R Estherhuyzen/ Mnr. D Greeff at (044) 801 9222/ (044) 874 3917 of per epos by rgetherhuyzen@george.gov.za/ dgreeff@george.gov.za. Die Munisipaliteit behou die reg voor om enige versoek vir 'n tender terug te trek en/of te her-adverteer of enige tender te verwerp of gedeeltelik te aanvaar. Die Munisipaliteit is nie daartoe gebind om die laagste of enige tender te aanvaar nie. n Alternatiewe tenderaar mag aangestel word. 'n "TCS PIN" vir tenderaars se belasting nakoming inligting moet ingesluit wees by die tender dokument. Dit sal van die suksesvolle tenderaar verwag word om op die Sentrale Verskaffersdatabasis (SVD) te registreer. MR CA DU PLESSIS WAARNEMENDE MUNISIPALE BESTUURDER GEORGE MUNISIPALITEIT GEORGE 6530	with valid ORHVS certification and a minimum of five (5) years relevant experience. Submit ID, qualification, CV, and valid ORHVS certificate. This person can also be contracted as and when needed but the details of person as mentioned above must be submitted with the tender. (If a tenderer does not have a Site Supervisor who is a Qualified Electrician/Linesman with a valid ORHVS certificate you will not be considered) The Bidder must be registered with the Department of Employment and Labour (DoEL) as an Electrical Contractor. The registration must remain valid throughout the duration of the contract. Submit a valid registration as proof. <u>Phase 2: Functionality</u> Only tenders scoring a minimum of 90 out of 120 points in phase 2 will be further considered for evaluation in phase 3. <u>Phase 3: Price, B-BBEE Status and Specific Goals</u> Tenders will be evaluated and adjudication in terms of the Preferential Procurement Policy Framework Act (Act 5 of 2000) Regulations 2022; the George Municipality's Supply Chain Management Policy as well as the George Municipality's Preferential Procurement Policy, where 80 points will be scored for price and 20 points for B-BBEE status and specific goals. For more information, contact Mr R. Esterhuyzen/ Mr D Greeff at (044) 801 9222/ (044) 874 3917 or via email at rgetherhuyzen@george.gov.za / dgreeff@george.gov.za. The Municipality reserves the right to withdraw any invitation to tender and/or to readvertise or to reject any tender or to accept a part of it. The Municipality is not bound to accept the lowest or any tender. An alternative tenderer may be appointed. A TCS PIN for bidders' tax compliance information must be submitted with the tender document. It will be required from the successful bidder to register on the Central Supplier Database (CSD). MR CA DU PLESSIS ACTING MUNICIPAL MANAGER GEORGE MUNICIPALITY GEORGE 6530
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Tender Data (T1.2)

Clause number	The conditions of Tender are the Standard Conditions of Tender as contained in the Construction Industry Development Board (CIDB) Standard for Uniformity in Engineering and Construction Works Contracts, August 2019 (See www.cidb.org.za). The Standard Conditions of Tender for Procurements make several references to the Tender Data for details that apply specifically to this Tender. The Tender Data shall have precedence in the interpretation of any ambiguity or inconsistency between it and the standard conditions of Tender. Each item of data given below is cross-referenced to the clause in the Standard Conditions of Tender to which it mainly applies.
C.1	General
C.1.1	The employer is George Municipality.
C.1.1.1	The employer and each tenderer submitting a tender offer shall comply with these conditions of tender. In the dealings with each other, they shall discharge their duties and obligations as set out in C.2 and C.3, timeously and with integrity, and behave equitably, honestly, and transparently, comply with all legal obligations and not engage in anticompetitive practices.
C.1.1.2	The employer and the tenderer and all their agents and employees involved in the tender process shall avoid conflicts of interest and where a conflict of interest is perceived or known, declare any such conflict of interest, indicating the nature of such conflict. Tenderers shall declare any potential conflict of interest in their tender submissions. Employees, agents, and advisors of the employer shall declare any conflict of interest to whoever is responsible for overseeing the procurement process at the start of any deliberations relating to the procurement process or as soon as they become aware of such conflict and abstain from any decisions where such conflict exists or recuse themselves from the procurement process, as appropriate. <i>Note: 1) A conflict of interest may arise due to a conflict of roles which might provide an incentive for improper acts in some circumstances. A conflict of interest can create an appearance of impropriety that can undermine confidence in the ability of that person to act properly in his or her position even if no improper acts result. 2) Conflicts of interest in respect of those engaged in the procurement process include direct, indirect or family interests in the tender or outcome of the procurement process and any personal bias, inclination, obligation, allegiance or loyalty which would in any way affect any decisions taken.</i>
C.1.1.3	The employer shall not seek, and a tenderer shall not submit a tender without having a firm intention and the capacity to proceed with the contract.
C.1.2	Tender Documents
	The Tender Documents issued by the Employer comprise the following documents: THE TENDER Part T1: Tendering procedures. Part T2: Returnable documents. THE CONTRACT Part C1: Agreements and Contract data

	Part C2: Pricing data. Part C3: Scope of work. Part C4: Site information Annexures
C.1.3	Interpretation
C.1.3.1	The tender data and additional requirements contained in the tender schedules that are included in the returnable documents are deemed to be part of these conditions of tender.
C.1.3.2	These conditions of tender, the tender data and tender schedules which are required for tender evaluation purposes, shall form part of any contract arising from the invitation to tender/quote.
C.1.3.3	For the purposes of these conditions of tender, the following definitions apply: a) conflict of interest means any situation in which: i) someone in a position of trust has competing professional or personal interests which make it difficult to fulfil his or her duties impartially; ii) an individual or tenderer is able to exploit a professional or official capacity in some way for their personal or corporate benefit; or iii) incompatibility or contradictory interests exist between an employee and the tenderer who employs that employee. b) comparative offer means the price after the factors of a non-firm price and all unconditional discounts it can be utilized to have been taken into consideration; c) corrupt practice means the offering, giving, receiving or soliciting of anything of value to influence the action of the employer or his staff or agents in the tender process; d) fraudulent practice means the misrepresentation of the facts in order to influence the tender process or the award of a contract arising from a tender offer to the detriment of the employer, including collusive practices intended to establish prices at artificial levels.
C.1.4	Communication and employer's agent
	The employer's agent is: Name: R G Esterhuysen Address: Brick Rd, George, 6529 Tel: 044-801 9248 E-mail: rgesterhuysen@george.gov.za
C.1.5	Cancellation and Re-Invitation of Tenders
C.1.5.1	An employer may, prior to the award of the tender, cancel a tender if- a) due to changed circumstances, there is no longer a need for the engineering and construction works specified in the invitation; b) funds are no longer available to cover the total envisaged expenditure; or c) no acceptable tenders are received. d) there is a material irregularity in the tender process.
C.1.5.2	The decision to cancel a tender invitation must be published in the same manner in which the original tender invitation was advertised.
C.1.5.3	An employer may only with the prior approval of the relevant treasury cancel a tender invitation for the second time.
C.1.6	Procurement procedures
C.1.6.1	General

	1. The Employer intends to appoint a panel of contractors for the execution of electrical reticulation works within informal settlement areas in the George Municipal area of supply. 2. A maximum of three (5) contractors may be appointed to the panel. 3. Contractors will be ranked based on the tender evaluation process. 4. Appointment to the panel does not guarantee that any contractor will receive work. 5. Work will be allocated on an as-and-when required basis through work packages. 6. For each work package, the Employer may request quotations (RFQ) from all or a selected number of contractors on the panel. 7. The Employer reserves the right to not invite a contractor to quote where performance is unsatisfactory. 8. All work shall be executed at the tendered rates, subject to adjustments in accordance with the Contract.
C.1.6.2	Competitive negotiation procedure.
C.1.6.2.1	Where the tender data require that the competitive negotiation procedure is to be followed, tenderers shall submit tender offers in response to the proposed contract in the first round of submissions. Notwithstanding the requirements of C.3.4, the employer shall announce only the names of the tenderers who make a submission. The requirements of C.8 relating to the material deviations or qualifications which affect the competitive position of tenderers shall not apply.
C.1.6.2.2	All responsive tenderers or at least a minimum of not less than three responsive tenderers that are highest ranked in terms of the evaluation criteria stated in the tender data shall be invited to enter into competitive negotiations based on the principle of equal treatment, keeping confidential the proposed solutions and associated information. Notwithstanding the provisions of C.2.17, the employer may request that tenders be clarified, specified and fine-tuned in order to improve a tenderer's competitive position provided that such clarification, specification, fine-tuning or additional information does not alter any fundamental aspects of the offers or impose substantial new requirements which restrict or distort competition or have a discriminatory effect.
C.1.6.2.3	At the conclusion of each round of negotiations, tenderers shall be invited by the employer to revise their tender offer based on the same evaluation criteria, with or without adjusted weightings. Tenderers shall be advised when they are to submit their best and final offer.
C.1.6.2.4	The contract shall be awarded in accordance with the provisions of C.3.11 and C.3.13 after tenderers have been requested to submit their best and final offer.
C.1.6.3	The proposal procedure using the two-stage system will not be followed.
C.2	Tenderer's obligations
C.2.1	Mandatory / Eligibility (Disqualifiers)

C.2.1.1	Only those tenderers who are registered with the CIDB, in a contractor grading designation equal to or higher than a contractor grading designation determined in accordance with the sum tendered, or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations, for a EP class of construction work, are eligible to have their tenders evaluated. Joint ventures are eligible to submit tenders provided that: 1.every member of the joint venture is registered with the CIDB; 2.the lead partner has a contractor grading designation in the EP class of construction work; and 3.the combined contractor grading designation calculated in accordance with the Construction Industry Development Regulations is equal to or higher than a contractor grading designation determined in accordance with the sum tendered for a EP class of construction work or a value determined in accordance with Regulation 25 (1B) or 25(7A) of the Construction Industry Development Regulations. Category 2EP or higher Category 3EP or higher Category 4EP or higher
C.2.1.1	Capacity: Site Supervisor who is a Qualified Electrician/Linesman with valid ORHVS certification and a minimum of five (5) years relevant experience. Submit ID, qualification, CV, and valid ORHVS certificate. This person can also be contracted as and when needed but the details of person as mentioned above must be submitted with the tender. (If a tenderer does not have a Site Supervisor who is a Qualified Electrician/Linesman with a valid ORHVS certificate you will not be considered)
C.2.1.1	The Bidder must be registered with the Department of Employment and Labour (DoEL) as an Electrical Contractor. The registration must remain valid throughout the duration of the contract. Submit a valid registration as proof.
C.2.1.1	Only Tenderers who achieve the minimum functionality score are eligible to have their tenders further evaluated
C.2.1.1	Tenderers shall maintain the statutory registrations submitted at tender stage for the duration of the contract. Failure to do so may result in suspension or removal from the panel.
C.2.1.1	ALL TENDERS THAT DO NOT COMPLY WITH THE ABOVEMENTIONED REQUIREMENTS OF THE ELIGIBILITY WILL BE REGARDED AS NONRESPONSIVE AND MAY BE REJECTED WITHOUT FURTHER CONSIDERATION. NO FURTHER INFORMATION SHALL BE REQUESTED AFTER CLOSING OF THE TENDER, BUT CLARITY MAY BE REQUESTED.
C.2.1.1	Functionality
C.2.1.1	For the technical functionality a minimum score of 90 points must be obtained to qualify for the next round of the evaluation. Failure to achieve the minimum overall functionality score will result in the tender being declared non-responsive for purposes of functionality evaluation, and no further evaluation will be conducted. The weighting per section is indicated in the table below:

C.2.1.1	FunctionalityMaximum Points Experience and Completion of similar projects 60 Plant & Equipment allocated/reserved for this Tender 40 Key Staff & Personnel allocated/reserved for this Tender 20 Total 120
C.2.1.1	The Employer may, at its sole discretion and without obligation, request clarification of any information submitted, provided that such clarification does not alter the substance of the tender or the tenderer's competitive position, nor permit the submission of new or outstanding information.
C.2.2	Cost of tendering
C.2.2.1	Accept that, unless otherwise stated in the tender data, the employer will not compensate the tenderer for any costs incurred in the preparation and submission of a tender offer, including the costs of any testing necessary to demonstrate that aspects of the offer comply with requirements.
C.2.2.2	The cost of the tender documents charged by the employer shall be limited to the actual cost incurred by the employer for printing the documents. Employers must attempt to make available the tender documents on its website so as not to incur any costs pertaining to the printing of the tender documents.
C.2.3	Check documents
	Check the tender documents on receipt for completeness and notify the employer of any discrepancy or omission.
C.2.4	Confidentiality and copyright of documents
	Treat as confidential all matters arising in connection with the tender. Use and copy the documents issued by the employer only for the purpose of preparing and submitting a tender offer in response to the invitation.
C.2.5	Reference documents
	Obtain, as necessary for submitting a tender offer, copies of the latest versions of standards, specifications, conditions of contract and other publications, which are not attached but which are incorporated into the tender documents by reference.
C.2.6	Acknowledge addenda
	Acknowledge receipt of addenda to the tender documents, which the employer may issue, and if necessary, apply for an extension to the closing time stated in the tender data, in order to take the addenda into account.
C.2.7	Clarification meeting
	The arrangements for a compulsory clarification meeting are as stated in the Tender Notice and Invitation to Tender. Tenderers should be represented at the meeting by a person who is suitably qualified and experienced to comprehend the implications of the work involved. Tenderers must sign the attendance list in the name of the tendering entity. Addenda will be issued to and tenders will be considered only from those tendering entities appearing on the attendance list and who has purchased tender documents.
C.2.8	Seek clarification
	Request clarification of the tender documents, if necessary, by notifying the employer at least five (5) working days before the closing time stated in the tender data.

C.2.9	Insurance
	Be aware that the extent of insurance to be provided by the employer (if any) might not be for the full cover required in terms of the conditions of contract identified in the contract data. The tenderer is advised to seek qualified advice regarding insurance.
C.2.10	Pricing the tender offer
C.2.10.1	Include in the rates, prices, and the tendered total of the prices (if any) all duties, taxes except Value Added Tax (VAT), and other levies payable by the successful tenderer, such duties, taxes and levies being those applicable fourteen (14) days before the closing time stated in the tender data.
C.2.10.2	Show VAT payable by the employer separately as an addition to the tendered total of the prices.
C.2.10.3	Provide rates and prices that are fixed for the duration of the contract and not subject to adjustment except as provided for in the conditions of contract identified in the contract data.
C.2.10.4	State the rates and prices in Rand unless instructed otherwise in the tender data. The conditions of contract identified in the contract data may provide for part payment in other currencies.
C.2.11	Alterations to documents
	Do not make any alterations or additions to the tender documents, except to comply with instructions issued by the employer, or necessary to correct errors made by the tenderer. All signatories to the tender offer shall initial all such alterations.
C.2.12	Alternative tender offers
	No alternative tender offers will be considered.
C.2.13	Submitting a tender offer
C.2.13.3	The complete Tender Document shall be returned with the tender, including all Parts as listed in C.1.2 above (not to be separated). Parts of each tender offer communicated on paper shall be submitted as an original, plus Nil copies.
C.2.13.5 C.2.15.1	The employer's details and address for delivery of tender offers and identification details that are to be shown on each tender offer package are: Location of tender box: Fifth Floor, Directorate Financial Services Supply Chain Management. Physical address: Civic Centre, York Street, GEORGE Identification details: Tender reference number, Title of Tender and the closing date and time of the tender.
C.2.13.9	Only hard-copied tender documents shall be accepted, e-mailed tender offers will not be accepted.
C.2.14	Information and data to be completed in all respects
	Accept that tender offers, which do not provide all the data or information requested completely and, in the form, required, may be regarded by the employer as non-responsive.
C.2.15	Closing time
	The closing time for submission of tender offers is as stated in the Tender Notice and Invitation to Tender.

C.2.16	Tender offer validity
	The tender offer validity period is 84 days.
C.2.17	Clarification of tender offer after submission
	Provide clarification of a tender offer in response to a request to do so from the employer during the evaluation of tender offers. This may include providing a breakdown of rates or prices and correction of arithmetical errors by the adjustment of certain rates or item prices (or both). No change in the competitive position of tenderers or substance of the tender offer is sought, offered, or permitted. <i>Note: Sub-clause C.2.17 does not preclude the negotiation of the final terms of the contract with a preferred tenderer following a competitive selection process, should the Employer elect to do so.</i>
C.2.18	Provide other material
C.2.18.1	Provide, on request by the employer, any other material that has a bearing on the tender offer, the tenderer's commercial position (including notarized joint venture agreements), preferencing arrangements, or samples of materials, considered necessary by the employer for the purpose of a full and fair risk assessment. Should the tenderer not provide the material, or a satisfactory reason as to why it cannot be provided, by the time for submission stated in the employer's request, the employer may regard the tender offer as non-responsive.
C.2.18.2	Dispose of samples of materials provided for evaluation by the employer, where required.
C.2.19	Inspections, tests, and analysis
	Provide access during working hours to premises for inspections, tests and analysis as provided for in the tender data.
C.2.20	Submit securities, bonds and policies
	Performance Guarantees shall not be applicable.
C.2.21	Check final draft
	Check the final draft of the contract provided by the employer within the time available for the employer to issue the contract.
C.2.22	Return of other tender documents
	If so, instructed by the employer, return all retained tender documents within twenty-eight (28) days after the expiry of the validity period stated in the tender data.
C.2.23	Certificates
	The Tenderer is required to submit with his tender: 1) A tax compliance status pin (TCS PIN) issued by the South African Revenue Services. 2) Documents as listed in the List of Returnable Documents in Part T2.1.
C.3	The employer's undertakings
C.3.1	Respond to requests from the tenderer
C.3.1.1	Unless otherwise stated in the tender Data, respond to a request for clarification received up to five (5) working days before the tender closing time stated in the Tender Data and notify all tenderers who collected tender documents.

C.3.1.2	Consider any request to make a material change in the capabilities or formation of the tendering entity (or both) or any other criteria which formed part of the qualifying requirements used to prequalify a tenderer to submit a tender offer in terms of a previous procurement process and deny any such request if as a consequence: a) an individual firm, or a joint venture as a whole, or any individual member of the joint venture fails to meet any of the collective or individual qualifying requirements; b) the new partners to a joint venture were not prequalified in the first instance, either as individual firms or as another joint venture; or c) in the opinion of the Employer, acceptance of the material change would compromise the outcome of the prequalification process.
C.3.2	Issue Addenda
	If necessary, issue addenda that may amend or amplify the tender documents to each tenderer during the period from the date that tender documents are available until three (3) working days before the tender closing time stated in the Tender Data. If, as a result a tenderer applies for an extension to the closing time stated in the Tender Data, the Employer may grant such extension and, shall then notify all tenderers who collected tender documents.
C.3.3	Return late tender offers
	Return tender offers received after the closing time stated in the Tender Data, unopened, (unless it is necessary to open a tender submission to obtain a forwarding address), to the tenderer concerned.
C.3.4	Opening of tender submissions
	Tenders will be opened immediately after the closing time for receipt of tenders as stated in the Tender Notice and Invitation to Tender.
C.3.5	Two-envelope system
	A two-envelope system will not be followed.
C.3.6	Non-disclosure
	Not disclose to tenderers, or to any other person not officially concerned with such processes, information relating to the evaluation and comparison of tender offers, the final evaluation price and recommendations for the award of a contract, until after the award of the contract to the successful tenderer.
C.3.7	Grounds for rejection and disqualification
	Determine whether there has been any effort by a tenderer to influence the processing of tender offers and instantly disqualify a tenderer (and his tender offer) if it is established that he engaged in corrupt or fraudulent practices.
C.3.8	Test for responsiveness
C.3.8.1	Determine, after opening and before detailed evaluation, whether each tender offer properly received: a) complies with the requirements of these Conditions of Tender, b) has been properly and fully completed and signed, and c) is responsive to the other requirements of the tender documents.

C.3.8.2	A responsive tender is one that conforms to all the terms, conditions, and specifications of the tender documents without material deviation or qualification. A material deviation or qualification is one which, in the Employer's opinion, would: a) detrimentally affect the scope, quality, or performance of the works, services or supply identified in the Scope of Work, b) significantly change the Employer's or the tenderer's risks and responsibilities under the contract, or c) affect the competitive position of other tenderers presenting responsive tenders, if it were to be rectified. Reject a non-responsive tender offer, and not allow it to be subsequently made responsive by correction or withdrawal of the non-conforming deviation or reservation.
C.3.9	Arithmetical errors, omissions and discrepancies
C.3.9.1	Check responsive tenders for discrepancies between amounts in words and amounts in figures. Where there is a discrepancy between the amounts in figures and the amount in words, the amount in words shall govern.
C.3.9.2	Check the highest ranked tender or tenderer with the highest number of tender evaluation points after the evaluation of tender offers in accordance with C.3.11 for: a) the gross misplacement of the decimal point in any unit rate; b) omissions made in completing the pricing schedule or bills of quantities; or c) arithmetic errors in: (i) line-item totals resulting from the product of a unit rate and a quantity in bills of quantities or schedules of prices; or (ii) the summation of the prices.
C.3.9.3	Notify the tenderer of all errors or omissions that are identified in the tender offer and either confirm the tender offer as tendered or accept the corrected total of prices.
C.3.9.4	Where the tenderer elects to confirm the tender offer as tendered, correct the errors as follows: a) If bills of quantities or pricing schedules apply and there is an error in the line item total resulting from the product of the unit rate and the quantity, the line item total shall govern and the rate shall be corrected. Where there is an obviously gross misplacement of the decimal point in the unit rate, the line item total as quoted shall govern, and the unit rate shall be corrected. b) Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the tenderer's addition of prices, the total of the prices shall govern and the tenderer will be asked to revise selected item prices (and their rates if bills of quantities apply) to achieve the tendered total of the prices.
C.3.10	Clarification of a tender offer
	Obtain clarification from a tenderer on any matter that could give rise to ambiguity in a contract arising from the tender offer.
C.3.11	Evaluation of tender offers
C.3.11.1	General

	The Standard Conditions of Tender standardize the procurement processes, methods and procedures from the time that tenders are invited to the time that a contract is awarded. They are generic in nature and are made project specific through choices that are made in developing the Tender Data associated with a specific project. Conditions of tender are by definition the document that establishes a tenderer's obligations in submitting a tender and the employer's undertakings in soliciting and evaluating tender offers. Such conditions establish the rules from the time a tender is advertised to the time that a contract is awarded and require employers to conduct the process of offer and acceptance in terms of a set of standard procedures. The CIDB Standard Conditions of Tender are based on a procurement system that satisfies the following system requirements: <table> <tr> <th>Requirement</th><th>Qualitative interpretation of goal</th></tr> <tr> <td>Fair</td><td>The process of offer and acceptance is conducted impartially without bias, providing simultaneous and timely access to participating parties to the same information.</td></tr> <tr> <td>Equitable</td><td>Terms and conditions for performing the work do not unfairly prejudice the interests of the parties.</td></tr> <tr> <td>Transparent</td><td>The only grounds for not awarding a contract to a tenderer who satisfies all requirements are restrictions from doing business with the employer, lack of capability or capacity, legal impediments and conflicts of interest.</td></tr> <tr> <td>Competitive</td><td>The system provides for appropriate levels of competition to ensure cost effective and best value outcomes.</td></tr> <tr> <td>Cost effective</td><td>The processes, procedures and methods are standardized with sufficient flexibility to attain best value outcomes in respect of quality, timing and price, and least resources to effectively manage and control procurement processes.</td></tr> </table> The activities associated with evaluating tender offers are as follows: - Open and record tender offers received - Determine whether or not tender offers are complete - Determine whether or not tender offers are responsive - Evaluate tender offers - Determine if there are any grounds for disqualification - Determine acceptability of preferred tenderer - Prepare a tender evaluation report - Confirm the recommendation contained in the tender evaluation report	Requirement	Qualitative interpretation of goal	Fair	The process of offer and acceptance is conducted impartially without bias, providing simultaneous and timely access to participating parties to the same information.	Equitable	Terms and conditions for performing the work do not unfairly prejudice the interests of the parties.	Transparent	The only grounds for not awarding a contract to a tenderer who satisfies all requirements are restrictions from doing business with the employer, lack of capability or capacity, legal impediments and conflicts of interest.	Competitive	The system provides for appropriate levels of competition to ensure cost effective and best value outcomes.	Cost effective	The processes, procedures and methods are standardized with sufficient flexibility to attain best value outcomes in respect of quality, timing and price, and least resources to effectively manage and control procurement processes.
Requirement	Qualitative interpretation of goal												
Fair	The process of offer and acceptance is conducted impartially without bias, providing simultaneous and timely access to participating parties to the same information.												
Equitable	Terms and conditions for performing the work do not unfairly prejudice the interests of the parties.												
Transparent	The only grounds for not awarding a contract to a tenderer who satisfies all requirements are restrictions from doing business with the employer, lack of capability or capacity, legal impediments and conflicts of interest.												
Competitive	The system provides for appropriate levels of competition to ensure cost effective and best value outcomes.												
Cost effective	The processes, procedures and methods are standardized with sufficient flexibility to attain best value outcomes in respect of quality, timing and price, and least resources to effectively manage and control procurement processes.												
C.3.12	Insurance provided by the employer												
	If requested by the proposed successful tenderer, submit for the tenderer's information the policies and / or certificates of insurance which the conditions of contract identified in the contract data, require the employer to provide.												
C.3.13	Acceptance of tender offer												

	Accept the tender offer; if in the opinion of the employer, it does not present any risk and only if the tenderer: a) is not under restrictions, or has principals who are under restrictions, preventing participating in the employer's procurement; b) can, as necessary and in relation to the proposed contract, demonstrate that he or she possesses the professional and technical qualifications, professional and technical competence, financial resources, equipment and other physical facilities, managerial capability, reliability, experience and reputation, expertise and the personnel, to perform the contract; c) has the legal capacity to enter into the contract; d) is not; insolvent, in receivership, under Business Rescue as provided for in chapter 6 of the Companies Act No. 2008, bankrupt or being wound up, has his/her affairs administered by a court or a judicial officer, has suspended his/her business activities or is subject to legal proceedings in respect of any of the foregoing; e) complies with the legal requirements, if any, stated in the tender data; and f) is able, in the opinion of the employer, to perform the contract free of conflicts of interest. Over and above the standard conditions listed: Tender offers will only be accepted if: (a) the Tenderer has in his or her possession an original valid Tax Clearance Certificate or valid tax clearance pin (See MDB 1) issued by the South African Revenue Services or has made arrangements to meet outstanding tax obligations; (b) the Tenderer or any of its directors/shareholders is not listed on the Register of Tender Defaulters in terms of the Prevention and Combating of Corrupt Activities Act of 2004 as a person prohibited from doing business with the public sector; (c) the Tenderer submits a letter of intent from an approved insurer undertaking to provide the Performance Bond to the format included in Part C1.4 of the procurement document. (d) the Tenderer is registered with the Construction Industry Development Board in an appropriate contractor grading designation. (e) the Tenderer has not: (i) abused the Employer's Supply Chain Management System; or (ii) failed to perform on any previous contract and has been given a written notice to this effect. (f) the tender offer is signed by a person authorized to sign on behalf of the Tenderer. (g) the Tenderer has complete the Compulsory Enterprise Questionnaire and there are no conflicts of interest which may impact on the Tenderer's ability to perform the Contract in the best interests of the Employer or potentially compromise the tender process. (h) the Tenderer is registered and in good standing with the compensation fund or with a licensed compensation insurer; (i) the Employer is reasonably satisfied that the Tenderer has in terms of the Construction Regulations, 2014 and subsequent revisions, issued in terms of the Occupational Health and Safety Act, 1993, the necessary competencies and resources to carry out the work safely. (j) the Tenderer has not failed to perform on any previous contracts and has not been given a written notice to the effect. (k) the Tenderer has submitted certified copies of the directors, owners and shareholders identity documents with the tender offer. (l) the Tenderer must be registered on the Central Supplier Database, (m) Tenderer who submitted a tender as a Joint Venture has included an acceptable Joint Venture Agreement with his/her tender or has provided a letter of intent to form a Joint Venture signed by all parties. (n) the Tenderer is not in arrears for more than 30 days with municipal rates and taxes and services charges.
C.3.14	Prepare contract documents

C.3.14.1	If necessary, revise documents that shall form part of the contract and that were issued by the employer as part of the tender documents to take account of: a) addenda issued during the tender period, b) inclusion of some of the returnable documents and c) other revisions agreed between the employer and the successful tenderer.
C.3.14.2	Complete the schedule of deviations attached to the form of offer and acceptance, if any.
C.3.15	Complete adjudicator's contract
	Unless alternative arrangements have been agreed or otherwise provided for in the contract, arrange for both parties to complete formalities for appointing the selected adjudicator at the same time as the main contract is signed.
C.3.16	Registration of the award
	An employer must, within twenty-one (21) working days from the date on which a contractor's offer to perform a construction works contract is accepted in writing by the employer, register and publish the award on the CIDB Register of Projects.
C.3.17	Provide copies of the contracts
	The number of paper copies of the signed contract to be provided by the employer is one.
C.3.18	Provide written reasons for actions taken
	Provide upon request written reasons to tenderers for any action that is taken in applying these conditions of tender but withhold information which is not in the public interest to be divulged, which is considered to prejudice the legitimate commercial interests of tenderers or might prejudice fair competition between tenderers.
	<u>The additional conditions of tender are:</u> None.

B-BBEE certificates submitted with the tender documents MUST be a VALID ORIGINAL B-BBEE CERTIFICATE or VALID CERTIFIED COPY OF THE B-BBEE CERTIFICATE.

In the case of a Trust, Consortium or Joint Venture, they will qualify for points for their B-BBEE status level as a legal entity, provided that the entity submits their B-BBEE status level certificate.

GEORGE MUNICIPALITY**DIRECTORATE: ELECTRICAL ENGINEERING SERVICES****TENDER NUMBER: GMT014/24-25**

**TENDER FOR TENDER FOR THE APPOINTMENT OF CONTRACTORS FOR THE
EXECUTION OF CAPITAL PROJECTS, AS AND WHEN REQUIRED FROM DATE
OF APPOINTMENT UNTIL 30 JUNE 2029**

Returnable Documents (Part T2)

*(ALL Documents and Schedules MUST BE RETURNED for the
TENDER to Qualify)*

T2.1 List of Returnable Schedules Required for Tender Evaluation

LIST OF CONTENTS

**T2.1. LIST OF RETURNABLE SCHEDULES REQUIRED FOR TENDER
EVALUATION PURPOSES (Part T2.1)**

- Form 2.1.1. General information
- Form 2.1.2. Authority for signatory
- Form 2.1.3. Schedule of work carried out by tenderer
- Form 2.1.4. Proposed key personnel
- Form 2.1.5 Schedule of infrastructure and resources
- Form 2.1.6. Schedule of approach and methodology/work plan
- Form 2.1.7. Schedule of sub-contractors
- Form 2.1.8. Financial preferences
- Form 2.1.9. Claim for functionality points
- Form 2.1.10. Municipal bidding documents
 1. MBD 1
 2. MBD 4
 3. MBD 5
 4. MBD 6.1
 5. MBD 8
 6. MBD 9
 7. MBD 15
- Form 2.1.11 Schedule of reference for tenderer
- Form 2.1.12 Schedule of technical compliance

T2.2 Other documents required for tender evaluation purposes (Part T2.2)

- Form 2.1.1 Certificate of tenderers' attendance at the compulsory clarification meeting
- Form 2.1.2. Proof of registration at the Construction Industry Development Board (CIDB)

T2.3 Returnable schedules that will be incorporated in the Contract (Part 2.3)

- Form 2.3.1. Record of addenda to tender documents

NOTE:

Although the documents under Part T2 is headed “Returnable Documents” in line with the CIDB model, these are not the only documents to be returned together with the Tender. **All** the documents indicated on document T1, must be completed and signed where applicable and submitted as a **complete set of documents**.

GEORGE MUNICIPALITY

DIRECTORATE: ELECTRICAL ENGINEERING SERVICES

TENDER NUMBER: GMT014/24-25

TENDER FOR TENDER FOR THE APPOINTMENT OF CONTRACTORS FOR THE
EXECUTION OF CAPITAL PROJECTS, AS AND WHEN REQUIRED FROM DATE OF
APPOINTMENT UNTIL 30 JUNE 2029

List of Returnable Schedules Required for Tender Evaluation Purposes (Part T2.1)

It is a condition of this tender that the tender submission shall be accompanied by the documentation listed below.

Note

Although Part T2 is titled "Returnable Documents" in accordance with the CIDB Standard for Uniformity, these documents do not constitute the complete set of documents required to be submitted with the tender.

Tenderers shall ensure that all documents listed in Part T1 and Part T2 of the tender document are fully completed, signed where applicable, and submitted as a complete tender submission.

Any supporting documentation or returnable that do not form part of the bound tender document shall be compiled into a separate file clearly marked "Returnable Documents" and submitted together with the tender submission as an attached volume.

Failure to submit the required returnable documents will result in the tender being considered non-responsive.

NO	RETURNABLES	NOTES	SUBMITTED (TICK)	
			YES	NO
1	CIDB Grading	• Copy of Company CIDB Grading designation as applicable		
2	Current and valid Electrical Contractor registration with the Department of Employment and Labour (DoEL)	• Proof of registration as Electrical Contractor with DoEL		
3	Form of Offer	• Fully completed and signed in black ink pen.		
4	COIDA	• Proof of compliance with the Compensation for Occupational Injuries and Diseases Act 130 of 1993 (as amended)		

5.	A copy of a CSD summary report OR CSD number	• CSD full report or summary report OR CSD number.		
6.	Proof of company registration documents with the Director's details must be attached	• The company registration documents must indicate the company and Director's details.		
7.	Fully completed MBD forms	• Fully Completed and signed, handwritten and in black pen.		
8.	Tax Compliance Status	• Tax Compliance Status PIN		
9.	In the event of a tenant renting a lease agreement MUST be attached for the COMPANY AND DIRECTORS/TRUSTEES/ MEMBERS/SHAREHOLDERS	The lease agreement must include the following: • A valid copy of the lease agreement must be signed by (both Lessor and lessee). • The lease agreement must indicate dates of commencement and expiry or duration. • NOTE: The lease agreement for the company must indicate that the premises are for business purpose. • In a case where the lease agreement has expired and there is a clause indicating an automatic renewal the original lease agreement and a confirmation letter signed by Lessor must be attached. • In the occasion where the lease agreement has expired the original lease agreement AND extension must be attached with commencement and expiry dates or duration.		
10.	Latest Municipal rates and taxes account for the COMPANY AND DIRECTORS/TRUSTEES/ MEMBERS/SHAREHOLDERS.	• Latest municipal rates & taxes account must be attached. • The submitted account must not be in arrears for more than 30 days. • Only Municipal accounts where the address of the Account matches the address on the company registration documents will be accepted.		

11.	BBBEE Certificate or Affidavit	Valid SANAS only accredited BBBEE certificate OR valid copy of BBBEE Sworn Affidavit must be attached. (Failure to submit Valid Certificate will result in your bid not being allocated Points for BBBEE).		
12.	Fully Completed BOQ	BOQ completed in handwriting and black ink pen		
13.	Technical Schedules			
14.	Original submission (hard-copy)	One (1) original tender submission (mandatory for evaluation)		
15.	Copy of submission	- One (1) scanned PDF of the tender submission <i>(for record and reference purposes only)</i> - Populated BOQ in native Microsoft Excel format <i>(for arithmetic verification)</i>		
16.	Form 2.1.1	General Information		
17.	Form 2.1.2	Authority for Signatory		
18.	Form 2.1.3	Schedule of Work Carried Out by Tenderer		
19.	Form 2.1.4	Proposed Key Personnel		
20.	Form 2.1.5	Schedule of Infrastructure and Resources		
21.	Form 2.1.6	Schedule of Approach and Methodology		
22.	Form 2.1.7	Schedule of Proposed Sub-Contractors		
23.	Form 2.1.8	Financial References		
24.	Form 2.1.9	Claim for functionality points		
25.	Form 2.1.10	- Municipal bidding documents - MBD 1 - MBD 4 - MBD 5 - MBD 6.1 - MBD 8 - MBD 9 - MBD 15		

26.	Form 2.1.11	• Schedule of reference for tenderer		
27.	Form 2.1.12	• Schedule of technical compliance		

.....
Signature

.....
Date

.....
Position

.....
Name of Bidder

FORM 2.1.1 GENERAL INFORMATION

1. Name of tendering entity: _____

2. Contact details

Address : _____

Tel no : (_____) _____

Fax no : (_____) _____

E-mail address : _____

3. Legal entity: Mark with an **X**.

Sole proprietor	
Partnership	
Close corporation	
Company (Pty) Ltd	
Joint venture	

In the case of a Joint venture, provide details on joint venture members:

Joint venture member	Type of entity (as defined above)

4. Income tax reference number: _____
(in the case of a joint venture, provide for all joint venture members)5. Regional services area where the enterprise is registered: _____
(In the case of a joint venture, provide for all joint venture members)6. Regional services levy registration number: _____
(In the case of a joint venture, provide for all joint venture members)7. VAT registration number: _____
(In the case of a joint venture, provide for all joint venture members)

8. Company or closed corporation registration number: _____
(In the case of a joint venture, provide for all joint venture members)
9. Details of proprietor, partners, closed corporation members, or company directors, indicating technical qualifications where applicable (Form on the next page).
10. For joint ventures the following must be attached (**COMPULSORY**):
- Written power of attorney for authorised signatory.
 - **Pro-forma of the joint venture agreement.**
* If the Joint Venture Agreement is not attached, the tender will not be considered!

DETAILS OF PROPRIETOR, PARTNERS, CLOSED CORPORATION MEMBERS OR COMPANY DIRECTORS

Name and Identity Number	Relevant qualifications and experience	Years of relevant experience

Name of Tendering Entity : _____

Signature : _____ Date : _____

FORM 2.1.2 AUTHORITY FOR SIGNATORY

Details of person responsible for Tender process

Name

Contact number (.....)

Address of office submitting the
Tender

Telephone no (.....)

Fax no (.....)

E-mail address

Signatories for close corporations and companies shall confirm their authority by attaching to this form a **duly signed and dated original or certified copy** of the relevant resolution of their members or their board of directors, as the case may be.

“By resolution of the board of directors passed on (date)

Mr.

has been duly authorized to sign all documents in connection with the Tender for Contract Numberand any Contract which may arise there from on behalf of

(BLOCK CAPITALS)

.....

SIGNED ON BEHALF OF THE COMPANY

IN HIS CAPACITY AS

DATE

FULL NAMES OF SIGNATORY

AS WITNESSES 1.

2.

FORM 2.1.3 SCHEDULE OF WORK CARRIED OUT BY TENDERER**Previous experience**

Provide the following information on relevant previous experience (indicate specifically projects of similar or larger size and/or which is similar with regard to type of work. In addition to any requirements, bidders must furnish particulars of:

- a. all construction works provided to an organ of state in the last five years;
- b. any similar construction works provided to an organ of state in the last five years.

This information is material to the award of the Contract.

Description	Value (R, VAT excluded)	Year(s) executed	Reference		
			Name	Organisa tion	Tel no

**Name of Tendering
Entity:**

Signature :

Date :

FORM 2.1.4 PROPOSED KEY PERSONNEL

The Tenderer shall list below the key personnel (including first nominee and the second-choice alternate), whom he proposes to employ on the project should his tender be accepted, both at his headquarters and on the Site, to direct and for the execution of the work, together with their qualifications, experience, positions held and their nationalities.

DESIGNATION	NAME OF	NATIONALITY:	SUMMARY OF			HDI Status	Fee (Time Based)
	NOMINEE (ii) ALTERNATE		QUALIFICATIONS AND NQF STATUS	EXPERIENCE AND OCCUPATION	PRESENT	Yes/No	
Headquarters Partner/director							
Project manager							
Other key staff (give designation)							

Name of Tendering Entity : _____

Signature : _____

Date : _____

Form 2.1.4 continued

DESIGNATION	NAME OF	NATIONALITY:	SUMMARY OF		HDI Status	Fee (Time Based)
	NOMINEE (ii) ALTERNATE		QUALIFICATIONS AND NQF STATUS	EXPERIENCE AND PRESENT OCCUPATION	Yes/No	
<u>CONSTRUCTION MONITORING</u>						
Other key staff (give designation)						

Name of Tendering Entity : _____

Signature : _____

Date : _____

FORM 2.1.5 SCHEDULE OF INFRASTRUCTURE AND RESOURCES

Provide information on the following:

Infrastructure and resources available

Physical facilities

Description	Address	Area (m ²)

Equipment

Provide information on equipment and resources that you have available for this project (attach details if the spaces provided are not enough)

Description: Equipment owned	Number of units
Description: Computer Hardware	Number of units
Description: Software to be Used	Number of units

Size of enterprise and current workload:

What was your turnover in the previous financial year?

What is the estimated turnover for your current financial year?

List your current contracts and obligations:

Description	Value (R, VAT excluded)	Start date	Duration	Expected completed date

Do you have the capacity to supply the goods and services described in this Tender, should the contract be awarded to you? YES / NO

Staffing Profile:

Provide information on the staff that you have available to execute this contract (attach a separate list if the space provided is insufficient)

Permanently employed staff : gender and race	Number of staff
Temporary staff to be employed for the project : gender and race	Number of staff

Name of Tendering Entity :

Signature :

Date :

FORM 2.1.6 SCHEDULE OF APPROACH AND METHODOLOGY/WORK PLAN**Understanding the terms of reference / brief**

1. Do you as the contractor understand what is required in terms of the projects stated above?

Yes		No	
------------	--	-----------	--

 (Tick Appropriate Block)

2. If you answered Yes to question 1 above, please explain briefly your understanding of the project in no more than 50 words.

3. Considering questions 1 and 2 above, please provide in summary, details of your proposed approach and work plan to the successful completion of the above project.

4. Briefly state if you have any innovative approach for this particular project mentioned above, that you feel will be unique but also economically superior to the normal workable approach at presently undertaken as the norm.

Name of Tendering Entity : _____

Signature : _____

Date : _____

FORM 2.1.7 SCHEDULE OF SUB-CONTRACTORS

The Bidder shall list below the sub-contractors he/she proposes to employ for part(s) of the work.

If any or all of the sub-contractor/s listed hereunder are not approved subsequent to acceptance of the Tender, it shall in no way invalidate the Tender or the Contract, and the Tendered unit rates for the respective items of work shall remain final and binding even if a sub-contractor/s not listed below is approved by the Employer.

Sub- Contractor's Name	Work Activities to be undertaken by the Sub-contractor	Work Recently Executed by Sub-contractor

FORM 2.1.8 FINANCIAL REFERENCES**FINANCIAL STATEMENTS**

I/We agree, if required, to furnish an audited copy of the latest set of financial statements together with my/our Directors' and Auditors' report for consideration by the Employer.

DETAILS OF TENDERING ENTITY'S BANK

I/We hereby authorize the Employer/Engineer to approach all or any of the following banks for the purposes of obtaining a financial reference:

DESCRIPTION OF BANK DETAIL	BANK DETAILS APPLICABLE TO TENDERER 'S HEAD OFFICE
Name of bank	
Branch name	
Branch code	
Street address	
Postal address	
Name of manager	
Telephone number	()
Fax number	()
Account number	

FORM 2.1.9 CLAIM FOR FUNCTIONALITY POINTS

For the technical functionality a **minimum score of 90 points** must be obtained to qualify for the next round of the evaluation. Failure to achieve the minimum overall functionality score will result in the tender being declared non-responsive for purposes of functionality evaluation, and no further evaluation will be conducted. The weighting per section is indicated in the table below:

Table 1: Technical Functionality Summary

Functionality	Maximum Points
Experience and Completion of similar projects	60
Plant & Equipment allocated/reserved for this Tender	40
Key Staff & Personnel allocated/reserved for this Tender	20
Total	120

Table 2: Technical Functionality Point Allocation

EXPERIENCE AND COMPLETION OF SIMILAR PROJECTS		
Completion certificates for overhead reticulation projects completed within the last 7 years with a minimum project value of R1 million, that included any of the following: Medium Voltage (MV) , Low Voltage (LV) reticulation, Street lights (SL). <u>Compulsory information:</u> (1) Completion date (2) Project value (3) Scope of work confirming MV or LV Reticulation or Streetlights	4 or more Completion certificates: 60 points	Max. 60 points
	3 Completion certificate: 45 points	
	2 Completion certificates: 30 points	
	1 Completion certificate: 15 points	
	None or failure to submit ANY compulsory information: 0 points	
<i>Note: High Voltage (HV) : 44 kV to 132 kV Medium Voltage (MV) : 3.3 kV to 33 kV Low Voltage (LV) and Street Lights (SL) : ≤ 1000 V</i> <i>Note: Where the Completion Certificate does not contain all of the above compulsory information, the Tenderer must submit an appointment letter or a client signed confirmation letter clearly confirming the compulsory information.</i>		

PLANT AND EQUIPMENT The following could be hired if not owned. Submit documentation as required for tender purposes.		
5-ton crane truck <u>Compulsory information:</u> (1) Valid Registration Certificates (2) Crane load testing certificate <i>In case of plant being rented, the tender shall submit a Rental Letter as well as valid Registration Certificates to prove that the rental company owns the plant, including crane load testing certificate. Clarity can be requested if required</i>	1 x 5t crane truck : 10 points	Max. 10 points
	None or failure to submit ANY compulsory information: 0 points	
LDV's <u>Compulsory information:</u> (1) Valid Registration Certificates <i>In case of plant being rented, the tender shall submit a Rental Letter as well as valid Registration Certificates to prove that the rental company owns the plant. Clarity can be requested if required</i>	2 x LDV : 5 points	Max.5 points
	1 x LDV : 2.5 points	
	None or failure to submit ANY compulsory information: 0 points	
Cherry Picker <u>Compulsory information:</u> (1) Valid Registration Certificates (2) Crane load testing certificate <i>In case of plant being rented, the tender shall submit a Rental Letter as well as valid Registration Certificates to prove that the rental company owns the plant, including crane load testing certificate. Clarity can be requested if required</i>	1 x Cherry Picker: 5 points	Max.5 points
	None or failure to submit ANY compulsory information: 0 points	
60-ton Hydraulic crimper <u>Compulsory information:</u> <i>Photo clearly indicating serial number to be provided.</i> <i>In case of plant being rented, the tender shall submit a Rental Letter as prove that the rental company owns the plant, Including intent to rent,</i>	1 x 60-ton crimper (owned/rental): 5 points	Max.5 points
	None or failure to submit ANY compulsory information: 0 points	

Plate Compactor (Wacker) <u>Compulsory information:</u> <i>Photo clearly indicating serial number to be provided.</i> <i>In case of plant being rented, the tender shall submit a Rental Letter to prove that the rental company owns the plant, Including intent to rent.</i>	1 x Plate compactor (owned/rental): 5 points	Max. 5 points
	None or failure to submit ANY compulsory information: 0 points	
1000 V Insulation Resistance Tester <u>Compulsory information:</u> <i>Photo clearly indicating serial number to be provided with valid calibration certificate</i>	1 x 1000 V Insulation Resistance Tester: 5 points	Max. 5 points
	None or failure to submit ANY compulsory information: 0 points	
Four-Wire Earth Resistance Tester <u>Compulsory information:</u> <i>Photo clearly indicating serial number to be provided with valid calibration certificate</i>	1 x Earth Resistance Tester: 5 points	Max. 5 points
	None or failure to submit ANY compulsory information: 0 points	
KEY STAFF		
2 x Qualified Electricians(maximum of two evaluated) Qualified Electrician (Trade Test Certificate) <u>Compulsory information:</u> (1) Qualification (2) CV <i>CV to indicate years of experience in the construction of electrical reticulation projects</i>	5 year or more experience : 10 points (Per Elec.)	Max. 20 points
	4 year or more experience : 8 points (Per Elec.)	
	3 year or more experience : 6 points (Per Elec.)	
	2 year or more experience : 4 points (Per Elec.)	
	1 year or more experience : 2 points (Per Elec.)	
	None or No submission : 0 points (Per Elec.)	

NOTE - THE MUNICIPALITY RESERVES THE RIGHT TO VERIFY THE SUBMITTED FUNCTIONALITY DOCUMENTS

SIGNATURE :

DATE :

As part of the responsiveness evaluation for functionality, the tenderer shall populate all forms included under this section (next page).

FORM 2.1.9.1 EXPERIENCE AND COMPLETION OF SIMILAR PROJECTS (CLAIM FOR FUNCTIONALITY POINTS)

Tenderers must submit **Completion certificates** for overhead reticulation projects completed within the last 7 years with a minimum project value of R5 million, a minimum of 300 house connections and scope of work that included both Medium Voltage (MV) and Low Voltage (LV) reticulation.

Compulsory information:

- (1) Completion date
- (2) Project value
- (3) Number of house connections
- (4) Scope of work confirming MV and LV Reticulation

Where the Completion Certificate does not contain all of the above compulsory information, the Tenderer must submit an appointment letter or a client signed confirmation letter clearly confirming the compulsory information.

NB: Attach: Completion certificates or client-signed confirmation letters (Failure to fully complete the table below and attach supporting documentation will lead to no point scoring for functionality)

Employer/Client	Nature of work/Scope of work (A full breakdown of the scope)	Value of Work (incl. VAT)	Start and completion date (month and year) Duration
			Start Completion Duration
			Start Completion Duration
			Start Completion Duration
			Start Completion Duration
			Start Completion Duration

FORM 2.1.9.2 PLANT AND EQUIPMENT (CLAIM FOR FUNCTIONALITY POINTS)

Tenderers must submit documentary proof of ownership or availability of the plant and equipment required for the execution of the Works.

Compulsory information:

- (1) Valid Registration Certificates for 5-ton crane truck
- (2) Crane load testing certificate for 5-ton crane truck
- (3) Photo clearly indicating serial number for Insulation Resistance Tester & Four-Wire Earth Resistance Tester
- (4) Valid calibration certificates for Insulation Resistance Tester & Four-Wire Earth Resistance Tester

In case of plant being rented, the tender shall submit a Rental Letter as well as valid Registration Certificates to prove that the rental company owns the plant, including crane load testing certificate.

NB: Attach: Registration Certificates, Crane load testing certificate (Failure to fully complete the table below and attach supporting documentation will lead to no point scoring for functionality)

Plant / Equipment Item	Make & Model	Registration Number / Serial Number	Owned or Rented
5-ton crane truck			
LDV			
LDV			
Cherry Picker			
60-ton Hydraulic crimper			
Plate Compactor (Wacker)			
Insulation Resistance Tester			
Four-Wire Earth Resistance Tester			

FORM 2.1.9.3 ORHVS QUALIFIED SITE SUPERVISOR (ELIGIBILITY CRITERIA)

NB: Attach: Copy of qualification, ORHVS Certification & CV (Failure to fully complete and attach supporting documentation will lead to no point scoring for functionality)

Name & Surname		
ID/Passport Number		
Highest Qualification		
Employer & Contact No.	Project	Project Duration (Year)

Returnable Schedules that will be incorporated into Contract Part T2.2

FORM 2.1.9.4 QUALIFIED ELECTRICIAN – FIRST ELECTRICIAN (CLAIM FOR FUNCTIONALITY POINTS)

NB: Attach: Copy of qualification & CV (Failure to fully complete and attach supporting documentation will lead to no point scoring for functionality)

Name & Surname		
ID/Passport Number		
Highest Qualification		
Employer & Contact No.	Project	Project Duration (Year)

Returnable Schedules that will be incorporated into Contract Part T2.2

FORM 2.1.9.5 QUALIFIED ELECTRICIAN – SECOND ELECTRICIAN (CLAIM FOR FUNCTIONALITY POINTS)

NB: Attach: Copy of qualification & CV (Failure to fully complete and attach supporting documentation will lead to no point scoring for functionality)

Name & Surname		
ID/Passport Number		
Highest Qualification		
Employer & Contact No.	Project	Project Duration (Year)

TAX COMPLIANCE INFORMATION**PART A**

Tax Compliance Status	TCS Pin:		or	CSD No:	
B-BBEE Status Level Verification Certificate [Tick Applicable Box]	☐ Yes ☐ No			B-BBEE Status Level Sworn Affidavit	☐ Yes ☐ No
[A B-BBEE STATUS LEVEL VERIFICATION CERTIFICATE / SWORN AFFIDAVIT (FORM EMES & QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]					
Are You The Accredited Representative In South Africa For The Goods / Services / Works Offered?	☐ Yes ☐ No [If Yes, Enclose Proof]			Are You A Foreign Based Supplier For The Goods / Services / Works Offered?	☐ Yes ☐ No [If Yes, Answer Part 2.]
Signature of Bidder				Date	

PART B

TERMS AND CONDITIONS FOR BIDDING

1. TAX COMPLIANCE REQUIREMENTS		
1.1	BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.	
1.2	BIDDERS ARE REQUIRED TO SUBMIT THEIR UNIQUE PERSONAL IDENTIFICATION NUMBER (PIN) ISSUED BY SARS TO ENABLE THE ORGAN OF STATE TO VIEW THE TAXPAYER'S PROFILE AND TAX STATUS.	
1.3	APPLICATION FOR THE TAX COMPLIANCE STATUS (TCS) CERTIFICATE OR PIN MAY ALSO BE MADE VIA E-FILING. IN ORDER TO USE THIS PROVISION, TAXPAYERS WILL NEED TO REGISTER WITH SARS AS E-FILERS THROUGH THE WEBSITE WWW.SARS.GOV.ZA .	
1.4	FOREIGN SUPPLIERS MUST COMPLETE THE PRE-AWARD QUESTIONNAIRE IN PART B2.	
1.5	BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.	
1.6	IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED; EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.	
1.7	WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.	
2. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS [Tick Applicable Box]		
2.1	Is the entity a resident of the Republic of South Africa (RSA)?	YES NO
2.2	Does the entity have a branch in the RSA?	YES NO
2.3	Does the entity have a permanent establishment in the RSA?	YES NO
2.4	Does the entity have any source of income in the RSA?	YES NO
2.5	Is the entity liable in the RSA for any form of taxation?	YES NO
IF THE ANSWER IS "NO" TO ALL OF THE ABOVE, THEN IT IS NOT A REQUIREMENT TO REGISTER FOR A TAX COMPLIANCE STATUS SYSTEM PIN CODE FROM THE SOUTH AFRICAN REVENUE SERVICE (SARS) AND IF NOT REGISTER AS PER 1.3 ABOVE.		

NB: FAILURE TO PROVIDE ANY OF THE ABOVE PARTICULARS MAY RENDER THE BID INVALID. NO BIDS WILL BE CONSIDERED FROM PERSONS IN THE SERVICE OF THE STATE.

Signature of Bidder:

Capacity Under Which This Bid Is Signed:

Date:

DECLARATION OF INTEREST

1.	No bid will be accepted from persons in the service of the state*.		
2.	Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in the service of the state, it is required that the bidder or their authorised representative declare their position in relation to the evaluating/adjudicating authority.		
3.	In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.		
3.1	Full Name of bidder or his / her representative:		
3.2	Identity number:		
3.3	Position occupied in the Company (director, trustee, shareholder ²):		
3.4	Company Registration Number:		
3.5	Tax Reference Number:		
3.6	VAT Registration Number:		
3.7	The names of all directors / trustees / shareholders / members, their individual identity numbers and state employee numbers (where applicable) must be indicated in paragraph 4 below.		
3.8	Are you presently in the service of the state?*	YES / NO	
3.8.1	If yes, furnish the following particulars: Name of person / director / trustee / shareholder member: Name of state institution at which you or the person connected to the bidder is employed: Position occupied in the state institution: Any other particulars:		
3.9	Have you been in the service of the state for the past twelve months?		YES / NO
3.9.1	If so, furnish particulars.		

Returnable Schedules that will be incorporated into Contract Part T2.2

		
3.10	Do you have any relationship (family, friend, other) with persons in the service of the state and who may be involved with the evaluation and or adjudication of this bid?	YES / NO
3.10.1	If yes, furnish the following particulars: Name of person: Name of state institution at which you or the person connected to the bidder is employed: Position occupied in the state institution: Any other particulars:	
3.11	Are you aware of any relationship (family, friend, other) between the bidder and any person in the service of the state who may be involved with the evaluation and or adjudication of this bid?	YES / NO
3.11.1	If yes, furnish the following particulars: Name of person: Name of state institution at which you or the person connected to the bidder is employed: Position occupied in the state institution: Any other particulars:	
3.12	Are any of the company's directors, managers, principal shareholders or stakeholders in the service of the state?	YES / NO
3.12.1	If yes, furnish the following particulars: Name of person / director / trustee / shareholder / member: Name of state institution at which you or the person connected to the bidder is employed: Position occupied in the state institution:	

Returnable Schedules that will be incorporated into Contract Part T2.2

	Any other particulars:		
3.13	Is any spouse, child or parent of the company's directors, trustees, managers, principle shareholders or stakeholders in the service of the state?	YES / NO	
3.13.1	If yes, furnish the following particulars: Name of person / director / trustee / shareholder / member: Name of state institution at which you or the person connected to the bidder is employed: Position occupied in the state institution: Any other particulars:		
3.14	Do you or any of the directors, trustees, managers, principle shareholders, or stakeholders of this company have any interest in any other related companies or business whether or not they are bidding for this contract?	YES / NO	
3.14.1	If yes, furnish particulars: 		
4. Full details of directors / trustees / members / shareholders:			
THE FOLLOWING INFORMATION IS COMPULSORY TO COMPLETE:			
Full Name	Identity Number	Individual Tax Number for each Director	State Employee Number (where applicable)

Returnable Schedules that will be incorporated into Contract Part T2.2

5.	The contract will be automatically cancelled if there is a conflict of interest which is not disclosed by the bidder.
-----------	--

Protection of Personal Information Act, 2013 (Act no.4 of 2013) (POPIA)

All parties agree that they will comply with Protection of Personal Information Act, 2013 (Act no.4 of 2013) (POPIA) and process all the information and/or personal data in respect of the goods and/or services being rendered in accordance with the said act and only for the purpose of providing the goods and/or services set out in the agreement to provide such goods and/or services.

The contract between the municipality and the service provider must ensure compliance with the Protection of Personal Information Act, 2013 (Act no.4 of 2013) (POPIA), in that the service provider establishes and maintains security measures to safeguard personal information being processed on behalf of the municipality. The service provider must notify the municipality immediately in an event where there are reasonable grounds to believe personal information has been accessed by an unauthorized person.

The contract with a service provider must ensure confidentiality of personal information processed on behalf of the municipality. A supply contract with a service provider must include standard clauses outlining joint responsibility in terms of the protection of personal information.

.....
Signature

.....
Date

.....
Capacity

.....
Name of Bidder

¹MSCM Regulations: "in the service of the state" means to be -

- (a) a member of –
 - (i) any municipal council;
 - (ii) any provincial legislature; or
 - (iii) the National Assembly or the National Council of Provinces;
- (b) a member of the board of directors of any municipal entity;
- (c) an official or any Municipality or municipal entity;
- (d) an employee of any national or provincial department, national or provincial public entity or constitutional institution within the meaning of the Public Finance Management Act, 1999 (Act No. 1 of 1999);
- (e) a member of the accounting authority of any national or provincial entity; or
- (f) an employee of Parliament or a provincial legislature.

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

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

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

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

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

.....
.....

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

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

2.2 If yes, provide particulars.

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

3. Has any contract been awarded to you by an organ of state during the past five years, including particulars of any material non-compliance or dispute concerning the execution of such contract? ***YES / NO**

3.1 If yes, provide particulars.

.....

.....

.....

.....

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

4.1 If yes, furnish particulars.

.....

.....

.....

.....

CERTIFICATION

I, _____ THE _____ UNDERSIGNED _____ (NAME)

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

.....
Signature

.....
Date

Position

.....
Name of Bidder

PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022

This preference form must form part of all tenders invited. It contains general information and serves as a claim form for preference points for specific goals.

NB: BEFORE COMPLETING THIS FORM, TENDERERS MUST STUDY THE GENERAL CONDITIONS, DEFINITIONS AND DIRECTIVES APPLICABLE IN RESPECT OF THE TENDER AND PREFERENTIAL PROCUREMENT REGULATIONS, 2022

1. GENERAL CONDITIONS

1.1 The following preference point systems are applicable to invitations to tender:

- the 80/20 system for requirements with a Rand value of up to R50 000 000 (all applicable taxes included); and
- the 90/10 system for requirements with a Rand value above R50 000 000 (all applicable taxes included).

1.2 To be completed by the organ of state

The applicable preference point system for this tender is the **80/20** preference point system.

- a) The **80/20 preference point system** will be applicable in this tender. The lowest/ highest acceptable tender will be used to determine the accurate system once tenders are received.

1.3 Points for this tender (even in the case of a tender for income-generating contracts) shall be awarded for:

- (a) Price;
(b) BBBEE; and
(c) Specific Goals.

1.4 To be completed by the organ of state:

The maximum points for this tender are allocated as follows:

	POINTS
PRICE	80
BBBEE	10
SPECIFIC GOALS	10
Total points for PRICE and SPECIFIC GOALS	100

1.5 Failure on the part of a tenderer to submit proof or documentation required in terms of this tender to claim points for specific goals with the tender, will be interpreted to mean that preference points for specific goals are not claimed.

Returnable Schedules that will be incorporated into Contract Part T2.2

- 1.6 The organ of state reserves the right to require of a tenderer, either before a tender is adjudicated or at any time subsequently, to substantiate any claim regarding preferences, in any manner required by the organ of state.

2. DEFINITIONS

- (a) “**tender**” means a written offer in the form determined by an organ of state in response to an invitation to provide goods or services through price quotations, competitive tendering process or any other method envisaged in legislation;
- (b) “**price**” means an amount of money tendered for goods or services, and includes all applicable taxes less all unconditional discounts;
- (c) “**rand value**” means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;
- (d) “**tender for income-generating contracts**” means a written offer in the form determined by an organ of state in response to an invitation for the origination of income-generating contracts through any method envisaged in legislation that will result in a legal agreement between the organ of state and a third party that produces revenue for the organ of state, and includes, but is not limited to, leasing and disposal of assets and concession contracts, excluding direct sales and disposal of assets through public auctions; and
- (e) “**the Act**” means the Preferential Procurement Policy Framework Act, 2000 (Act No. 5 of 2000).

3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

3.1. POINTS AWARDED FOR PRICE

3.1.1 THE 80/20 OR 90/10 PREFERENCE POINT SYSTEMS

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

$$\begin{array}{ccc} \mathbf{80/20} & \mathbf{or} & \mathbf{90/10} \\ \mathbf{P_s = 80 \left(1 - \frac{P_t - P_{min}}{P_{min}} \right)} & \mathbf{or} & \mathbf{P_s = 90 \left(1 - \frac{P_t - P_{min}}{P_{min}} \right)} \end{array}$$

Where

P_s = Points scored for price of tender under consideration

P_t = Price of tender under consideration

P_{min} = Price of lowest acceptable tender

3.2. FORMULAE FOR DISPOSAL OR LEASING OF STATE ASSETS AND INCOME GENERATING PROCUREMENT

3.2.1. POINTS AWARDED FOR PRICE

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

$$\begin{array}{ccc} \mathbf{80/20} & \mathbf{or} & \mathbf{90/10} \\ \mathbf{P_s = 80 \left(1 + \frac{P_t - P_{max}}{P_{max}} \right)} & \mathbf{or} & \mathbf{P_s = 90 \left(1 + \frac{P_t - P_{max}}{P_{max}} \right)} \end{array}$$

Where

- Ps = Points scored for price of tender under consideration
 Pt = Price of tender under consideration
 Pmax = Price of highest acceptable tender

4. POINTS AWARDED FOR BBBEE AND SPECIFIC GOALS

- 4.1. In terms of Regulation 4(2); 5(2); 6(2) and 7(2) of the Preferential Procurement Regulations, preference points must be awarded for specific goals stated in the tender. For the purposes of this tender the tenderer will be allocated points based on the goals stated in table 1 below as may be supported by proof/documentation stated in the conditions of this tender:

4.1.1 Points awarded for B-BBEE Level of Contributor

In terms of the Specific Goals as per the George Municipality Preferential Procurement Policy, preference points must be awarded to a tenderer for attaining the B-BBEE status level of contribution in accordance with the table below:

B-BBEE Status Level of Contributor	Number of Points for Preference (80/20)	Number of Points for Preference (90/10)
1	10	5
2	9	4.5
3	7	3
4	6	2.5
5	4	2
6	3	1.5
7	2	1
8	1	0.5
Non-compliant contributor	0	0

Bidder MUST submit a valid BBBEE certificate, failure to attach no points will be awarded for BBBEE points.

4.1.2 Points awarded for Specific Goals

In terms of the Specific Goals as per the George Municipality Preferential Procurement Policy, preference points must be awarded to a Tenderer for Locality in accordance with the table below:

Locality of Tenderer's Office	Number of points (80/20 system)	Number of points (90/10 system)
Within the boundaries of George Municipality	10	5
Within the boundaries of the Garden Route District Municipality	6	3
Within the borders of the	4	2

Returnable Schedules that will be incorporated into Contract Part T2.2

Western Cape		
Outside the borders of the Western Cape	2	1

Bidder's MUST submit proof of address (e. g. municipal account, rental/lease agreement, or affidavit) with the tender document. Failure to attach proof will result in no points awarded for Specific Goals.

George Municipality will reserve the right to use any and all available information at its disposal, including conducting site visits and inspections to verify a bidder's claim of having a local STAFFED / MANNED AND OPERATIONAL office within the George Municipal area.

The principle of substance over legal form, as defined in the Standards of Generally Recognised Accounting Practice (GRAP), will be applied in such assessments. (This means that even though a bidder may present a rental agreement, the claim of having a local staffed and operational office will be assessed in its actual substance and not by only accepting the legal documentation.)

The purpose of the locality points is to promote local economic development within the George Municipal area and any bidder attempting to circumvent the substance of this initiative through any means, including by means of fronting, will be reported to the National Treasury for blacklisting on the Central Supplier Database (CSD).

4.2. In cases where organs of state intend to use Regulation 3(2) of the Regulations, which states that, if it is unclear whether the 80/20 or 90/10 preference point system applies, an organ of state must, in the tender documents, stipulate in the case of—

(a) an invitation for tender for income-generating contracts, that either the 80/20 or 90/10 preference point system will apply and that the highest acceptable tender will be used to determine the applicable preference point system; or

(b) any other invitation for tender, that either the 80/20 or 90/10 preference point system will apply and that the lowest acceptable tender will be used to determine the applicable preference point system,

then the organ of state must indicate the points allocated for specific goals for both the 90/10 and 80/20 preference point system.

5. BID DECLARATION

Tenderers who claim points in respect of BBBEE must complete the following:

B-BBEE STATUS LEVEL OF CONTRIBUTOR CLAIMED IN TERMS OF PARAGRAPHS 4.1 AND 4.1.1

5.1. Contribution to BBBEE: =(maximum of 5 or 10 points)
--

(Points claimed in respect of paragraph 5.1 must be in accordance with the table reflected in paragraph 4.1.1 and **must be substantiated by relevant proof of B-BBEE status level of contributor.**)

**LOCALITY OF TENDERERS OFFICE CLAIMED IN TERMS OF
PARAGRAPHS 4.1 AND 4.1.2**

5.2. **Contribution to specific Goals: =(maximum of 5 or 10 points)**

(Points claimed in respect of paragraph 5.2 must be in accordance with the table reflected in paragraph 4.1.2 and **must be substantiated by relevant proof of address of a company office.**)

DECLARATION WITH REGARD TO COMPANY/FIRM

5.3. Name of
company/firm.....

5.4. Company registration number:
.....

5.5. TYPE OF COMPANY/ FIRM

- ☐ Partnership/Joint Venture / Consortium
- ☐ One-person business/sole propriety
- ☐ Close corporation
- ☐ Public Company
- ☐ Personal Liability Company
- ☐ (Pty) Limited
- ☐ Non-Profit Company
- ☐ State Owned Company

[TICK APPLICABLE BOX]

5.6. I, the undersigned, who is duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the specific goals as advised in the tender, qualifies the company/ firm for the preference(s) shown and I acknowledge that:

- i) The information furnished is true and correct;
- ii) The preference points claimed are in accordance with the General Conditions as indicated in paragraph 1 of this form;
- iii) In the event of a contract being awarded as a result of points claimed as shown in paragraphs 5.1 and 5.2, the contractor may be required to furnish documentary proof to the satisfaction of the organ of state that the claims are correct;
- iv) If the specific goals have been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the organ of state may, in addition to any other remedy it may have –
 - (a) disqualify the person from the tendering process;
 - (b) recover costs, losses or damages it has incurred or suffered as a result of that person's conduct;
 - (c) cancel the contract and claim any damages which it has suffered as a result of having to make less favourable arrangements due to such cancellation;
 - (d) recommend that the tenderer or contractor, its shareholders, and directors, or only the shareholders and

Returnable Schedules that will be incorporated into Contract Part T2.2

- directors who acted on a fraudulent basis, be restricted from obtaining business from any organ of state for a period not exceeding 10 years, after the *audi alteram partem* (hear the other side) rule has been applied; and
- (e) forward the matter for criminal prosecution, if deemed necessary.

	 SIGNATURE(S) OF TENDERER(S)
SURNAME AND NAME:	
DATE:	
ADDRESS:	

Returnable Schedules that will be incorporated into Contract Part T2.2

IF ANY TENDERER DOES NOT HAVE AN EME CERTIFICATE FROM A RATING AGENCY ACCREDITED BY SANAS FOR BEP (BUILD ENVIRONMENT PROFESSIONAL)/CONTRACTOR/SUPPLIER OR A B-BBEE CERTIFICATE FROM A B-BBEE VERIFICATION PROFESSIONAL REGULATOR APPOINTED BY THE MINISTER OF TRADE AND INDUSTRY, THIS AFFIDAVIT FOR BEP/CONTRACTOR/SUPPLIER WILL BE COMPULSORY TO COMPLETE.

MBD 6.1(A)

B-BBEE EXEMPTED AFFIDAVIT FOR EXEMPTED MICRO ENTERPRISES (ISSUED IN TERMS OF THE AMENDED CONSTRUCTION SECTOR CODE)

(Gazette Vol. 630 No. 41287)

Issued in terms of paragraph 3.6.2.4.1 (B)

I, the undersigned,

Full names and surname	
Identity number	

Hereby declare under oath as follows:

1. The contents of this statement are to the best of my knowledge a true reflection of the facts.
2. I am a Member / Director / Owner of the following enterprise and am duly authorized to act on its behalf:

Enterprise Name:			
Trading Name (If Applicable):			
Registration Number:			
Physical Address:			
Type of Entity (CC, (Pty) Ltd, Sole Prop etc.):			
Nature of Construction Business: Indicate the applicable category with a tick.	BEP (Built Environment Professional)	Contractor	Supplier
Definition of "Black People"	As per the Broad-Based Black Economic Empowerment Act 53 of 2003 as Amended by Act No 46 of 2013 "Black People" is a generic term which means Africans, Coloureds, and Indians – who are citizens of the Republic of South Africa by birth or descent; or who became citizens of the Republic of South Africa by naturalization before 27 April 1994; or after 27 April 1994 and who would have been entitled to acquire citizenship by naturalization prior to that date;"		
Definition of "Black Designated Groups"	"Black Designated Groups" means: (a) unemployed black people not attending and not required by law to attend an educational institution and not awaiting admission to an educational institution; (b) Black people who are youth as defined in the National Youth Commission Act of 1996; (c) Black people who are persons with disabilities as defined in the Code of Good Practice on employment of people with disabilities issued under the Employment Equity Act; (d) Black people living in rural and under developed areas; (e) Black military veterans who qualifies to be called a military veteran in terms of the Military Veterans Act 18 of 2011;"		

- 3) I hereby declare under Oath that as per Amended Code Series 100 of the Amended Codes of Good Practice issued under section 9 (1) of B-BBEE Act No 53 of 2003 as Amended by Act No 46 of 2013,

- The Enterprise is _____% Black Owned
- The Enterprise is _____% Black Female Owned
- The Enterprise is _____% Owned by Black Designated Group (provide Black

Returnable Schedules that will be incorporated into Contract Part T2.2

Designated Group Breakdown below as per the definition in the table above)

- Black Youth % _____ %
- Black Disabled % _____ %
- Black Unemployed % _____ %
- Black People living in Rural areas % _____ %
- Black Military Veterans % _____ %

Construction Sector Affidavit

- Based on the Financial Statements/Management Accounts and other information available on the latest financial year-end of _____, the annual Total Revenue was less than the applicable amount confirmed **by ticking the applicable box below.**

BEP	R1.8 million	
Contractor	R3.0 million	
Supplier	R3.0 million	

If the turnover exceeds the applicable amount in the table above then this affidavit is no longer applicable and an EME certificate must be obtained from a rating agency accredited by SANAS or when applicable a B-BBEE Verification Professional Regulator appointed by the Minister of Trade and Industry.

- Please Confirm on the below table the B-BBEE Level Contributor, **by ticking the applicable box below.**

100% Black Owned	Level One (135% B-BBEE procurement recognition level)	
At least 51% Black Owned	Level Two (125% B-BBEE procurement recognition level)	
At least 30% Black Owned	Level Four (100% B-BBEE procurement recognition level)	
Less than 30% Black Owned	Level Five (80% B-BBEE procurement recognition level)	

- I know and understand the contents of this affidavit and I have no objection to take the prescribed oath and consider the oath binding on my conscience and on the Owners of the Enterprise which I represent in this matter.
- The sworn affidavit will be valid for a period of 12 months from the date signed by commissioner.

Deponent Signature:

Date:

COMMISSIONER OF OATHS
SIGNATURE & STAMP

DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES

- 1 This Municipal Bidding Document must form part of all bids invited.
- 2 It serves as a declaration to be used by municipalities and municipal entities in ensuring that when goods and services are being procured, all reasonable steps are taken to combat the abuse of the supply chain management system.
- 3 The bid of any bidder may be rejected if that bidder, or any of its directors have:
 - 3.1 abused the municipality's / municipal entity's supply chain management system or committed any improper conduct in relation to such system;
 - 3.2 been convicted for fraud or corruption during the past five years;
 - 3.3 willfully neglected, reneged on, or failed to comply with any government, municipal or other public sector contract during the past five years; or
 - 3.4 been listed in the Register for Tender Defaulters in terms of section 29 of the Prevention and Combating of Corrupt Activities Act (No 12 of 2004).
4. In order to give effect to the above, the following questionnaire must be completed and submitted with the bid.

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

Returnable Schedules that will be incorporated into Contract Part T2.2

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

CERTIFICATION

I, **THE UNDERSIGNED** (FULL NAME)

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

**I ACCEPT THAT, IN ADDITION TO CANCELLATION OF A CONTRACT,
 ACTION MAY BE TAKEN AGAINST ME SHOULD THIS DECLARATION
 PROVE TO BE FALSE.**

.....

Signature

.....

Position

.....

Date

.....

Name of Bidder

CERTIFICATE OF INDEPENDENT BID DETERMINATION

1. This Municipal Bidding Document (MBD) must form part of all bids¹ invited.
2. Section 4 (1) (b) (iii) of the Competition Act No. 89 of 1998, as amended, prohibits an agreement between, or concerted practice by, firms, or a decision by an association of firms, if it is between parties in a horizontal relationship and if it involves collusive bidding (or bid rigging).² Collusive bidding is a *pe se* prohibition meaning that it cannot be justified under any grounds.
3. Municipal Supply Regulation 38(1) prescribes that a supply chain management policy must provide measures for the combating of abuse of the supply chain management system, and must enable the accounting officer, among others, to:
 - 3.1 take all reasonable steps to prevent such abuse;
 - 3.2 reject the bid of any bidder if that bidder or any of its directors has abused the supply chain management system of the municipality or municipal entity or has committed any improper conduct in relation to such system; and
 - 3.3 cancel a contract awarded to a person if the person committed any corrupt or fraudulent act during the bidding process or the execution of the contract.
4. This MBD serves as a certificate of declaration that would be used by institutions to ensure that, when bids are considered, reasonable steps are taken to prevent any form of bid-rigging.
5. In order to give effect to the above, the attached Certificate of Bid Determination (MBD9) must be completed and submitted with the bid:

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

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

CERTIFICATE OF INDEPENDENT BID DETERMINATION

I, the undersigned, in submitting the accompanying bid:

(Bid Number and Description)

in response to the invitation for the bid made by:

GEORGE MUNICIPALITY

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

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

6. I have read and I understand the contents of this Certificate;
7. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
8. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
9. Each person whose signature appears on the accompanying bid has been authorized by the bidder to determine the terms of, and to sign, the bid, on behalf of the bidder;
10. For the purposes of this Certificate and the accompanying bid, I understand that the word "competitor" shall include any individual or organization, other than the bidder, whether or not affiliated with the bidder, who:
 - 10.1 has been requested to submit a bid in response to this bid invitation;
 - 10.2 could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
 - 10.3 Provides the same goods and services as the bidder and/or is in the same line of business as the bidder.

Returnable Schedules that will be incorporated into Contract Part T2.2

- 11 The bidder has arrived at the accompanying bid independently from, and without consultation, communication, agreement or arrangement with any competitor. However communication between partners in a joint venture or consortium³ will not be construed as collusive bidding.
- 12 In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
 - 12.1 prices;
 - 12.2 geographical area where product or service will be rendered (market allocation);
 - 12.3 methods, factors or formulas used to calculate prices;
 - 12.4 the intention or decision to submit or not to submit, a bid;
 - 12.5 the submission of a bid which does not meet the specifications and conditions of the bid; or bidding with the intention not to win the bid.
13. In addition, there have been no consultations, communications, agreements or arrangements with any competitor regarding the quality, quantity, specifications and conditions or delivery particulars of the products or services to which this bid invitation relates.
14. The terms of the accompanying bid have not been, and will not be, disclosed by the bidder, directly or indirectly, to any competitor, prior to the date and time of the official bid opening or of the awarding of the contract.
15. I am aware that, in addition and without prejudice to any other remedy provided to combat any restrictive practices related to bids and contracts, bids that are suspicious will be reported to the Competition Commission for investigation and possible imposition of administrative penalties in terms of section 59 of the Competition Act No. 89 of 1998 and or may be reported to the National Prosecuting Authority (NPA) for criminal investigation and or may be restricted from conducting business with the public sector for a period not exceeding ten (10) years in terms of the Prevention and Combating of Corrupt Activities Act No. 12 of 2004 or any other applicable legislation.

.....

Signature

Date

.....

Position

Name of Bidder

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

CERTIFICATE FOR MUNICIPAL SERVICES (COMPULSORY TO COMPLETE)

Information required in terms of the Supply Chain Management Regulations,
Regulation 28 (1) (c).

Tender Number: GMT014/24-25

Name of the Bidder:

DETAILS OF THE BIDDER/S: Owner / Proprietor / Director(s) / Partner(s), etc:

Physical Business address of the Bidder	Municipal Account Number(s)

If there is not enough space for all the names, please attach the additional details to the Tender document.

Name of Director / Member / Partner	Identity Number	Physical residential address of Director / Member / Partner	Municipal Account number(s)

I, _____, the undersigned,

(full name in block letters)

certify that the information furnished on this declaration form is correct and that I/we have no undisputed commitments for municipal services towards a municipality or other service provider in respect of which payment is overdue for more than 30 days.

Signature

THUS DONE AND SIGNED for and on behalf of the Bidder / Contractor

at _____ on the _____ day of _____ 202

PLEASE NOTE:

MUNICIPAL ACCOUNTS FOR ALL PROPERTIES OWNED BY BIDDER/S MUST BE ATTACHED TO THE TENDER DOCUMENT!

Returnable Schedules that will be incorporated into Contract Part T2.2

Even if the requested information is not applicable to the Bidder, the table above should be endorsed NOT APPLICABLE with a reason and THIS DECLARATION **MUST STILL BE COMPLETED AND SIGNED.** In the event of leasing, a lease agreement **MUST** be attached to the tender document.

T2.1.11 SCHEDULE OF REFERENCE FOR TENDERER

- The Tenderer must provide one separate and unrelated contactable Referee.
- The Referee must relate to one separate successfully completed project in the last 5 years.
- The reference project must be for underground MV reticulation, underground LV reticulation, underground service connections and streetlighting installations to residential developments. The project must have a minimum project value of R10 million, incl VAT.
- The Tenderer must arrange for the Referee to complete this form and the original and completed form must be submitted with the tender document.
- A Certificate of Practical Completion or Certificate of Completion signed by the Employer's Agent must be attached for the project referenced herein.

Referee and Project Information

Employer name:	
Referee name:	
Referee physical address:	
Referee contact number:	
Referee e-mail address:	
Name of Tenderer evaluated:	
Project Name:	
Project Description:	
Project Completion date:	
Project duration:	
Final Project Cost, incl. VAT:	

COMPLETION OF PROJECT ON TIME	
Completion of project according to initial program submitted by Tenderer?	
Yes	
No	

COMPLETION OF ASSIGNMENTS WITHIN BUDGET	
Did the Tenderer complete the project / work within the allocated Budget?	
Yes	
No	

QUALITY OF END PRODUCT	
Was work executed in accordance with the Specification and did the final product match the expectations that were created during the Project Initiation Stage?	
Exceed initial expectations	
Met expectations	
Slightly below	
Did not meet expectations	

Additional Remarks/Comments:

I, the undersigned, hereby certify that the above information is, to the best of my knowledge, correct and a true reflection.

Signature of Referee

Date

DECLARATION,
I, THE UNDERSIGNED(NAME)
CERTIFY THAT THE INFORMATION FURNISHED ABOVE IS CORRECT. I
ACCEPT THAT THE MUNICIPALITY MAY EXERCISE DUE CONSEQUENCE
MANAGEMENT AGAINST ME SHOULD THIS DECLARATION PROVE TO BE
FALSE.

AUTHORISED SIGNATURE ON BEHALF OF TENDERER:
NAME OF TENDERER:

CAPACITY:

DATE:

T2.1.12 SCHEDULE OF TECHNICAL COMPLIANCE

- The Tenderer must mark whether they comply with the actions as set out on the following schedule. Should you not comply with any of the requirements within the schedule below your bid will be deemed non-responsive. A deviation will only be considered compliant, if the deviation is of the same quality or better than what is required in the schedule. George Municipality reserves the right to exclusively determine the quality and technical acceptability of the proposed deviation.

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
	SECTION A: MV WORKS			
1	Excavations			
1.1	Removal of Tarmac (Cut size as needed)			
1.1.1	Take photographic evidence of area before work commence;			
1.1.2	Expose and identify current infrastructure and services as needed;			
1.1.3	The standard Municipal wayleave procedure shall be applicable to all works;			
1.1.4	The contractor shall apply to all other authorities for wayleaves as applicable. This includes, but are not limited to Telkom, Neotel, Spoornet, Provincial Roads, SANRAL etc.			
1.1.5	Traffic control needs to be done as needed;			
1.1.6	Ensure that the complete area is fully barricaded;			
1.1.7	Tar surface to be minimally damaged – Cut with Grinder to minimize damage;			
1.1.8	Damage to be as far as possible in a straight line for required duct installation;			
1.1.9	Excavations to be done with minimal disturbance of the adjacent road layers;			
1.1.10	No excavations under or near a road to be left open during rain;			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
1.1.11	Only bedding backfilling needed around cables and sleeves – As per drawing			
1.1.12	Danger tape shall be placed at least 300mm above all cables;			
1.1.13	Repairing of the surface will be done by others. Backfilling shall be done according to specifications provide.			
1.2	Concrete Surface			
1.2.1	Take photographic evidence of area before work commence;			
1.2.2	Expose and identify current infrastructure and services as needed;			
1.2.3	The standard Municipal wayleave procedure shall be applicable to all works;			
1.2.4	The contractor shall apply to all other authorities for wayleaves as applicable. This includes, but are not limited to Telkom, Neotel, Spoornet, Provincial Roads, SANRAL etc.			
1.2.5	Traffic control needs to be done as needed;			
1.2.6	Ensure that the complete area is fully barricaded;			
1.2.7	Surface to be minimally damaged – Cut with Grinder to minimize damage;			
1.2.8	Damage to be as far as possible in a straight line for required duct installation;			
1.2.9	Excavations to be done with minimal disturbance of the adjacent road layers;			
1.2.10	No excavations under or near a road to be left open during rain;			
1.2.11	Only bedding backfilling needed around cables and sleeves – 150mm below and above – 300mm total;			
1.2.12	Danger tape shall be placed at least 300mm above all cables;			
1.2.13	All further backfilling including the repairing of the surface to be according to specifications. This should be included in the labour cost!			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
1.3	Brick Paving			
1.3.1	Take photographic evidence of area before work commence;			
1.3.2	Expose and identify current infrastructure and services as needed;			
1.3.3	The standard Municipal wayleave procedure shall be applicable to all works;			
1.3.4	The contractor shall apply to all other authorities for wayleaves as applicable. This includes, but are not limited to Telkom, Neotel, SpoorNet, Provincial Roads, SANRAL etc.			
1.3.5	Traffic control needs to be done as needed;			
1.3.6	Ensure that the complete area is fully barricaded;			
1.3.7	Surface to be minimally removed;			
1.3.8	Removal of pavers to be as far as possible in a straight line for required duct installation;			
1.3.9	Excavations to be done with minimal disturbance of the adjacent ground works;			
1.3.10	No excavations under or near a road to be left open during rain;			
1.3.11	Bedding backfilling needed around cables and sleeves – 150mm below and above – 300mm total;			
1.3.12	Danger tape shall be placed at least 300mm above all cables;			
1.3.13	All trenches to be compacted in 150mm layers;			
1.3.14	Paving to be replaced by contractor to its original state.			
1.4	Type of excavation - Hard			
1.4.1	Take photographic evidence of area before work commence;			
1.4.2	Expose and identify current infrastructure and services as needed;			
1.4.3	The standard Municipal wayleave procedure shall be applicable to all			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
	works;			
1.4.4	The contractor shall apply to all other authorities for wayleaves as applicable. This includes, but are not limited to Telkom, Neotel, Spoornet, Provincial Roads, SANRAL etc.			
1.4.5	Excavations shall be classified as per SANS 1200 D – for the purposes of measurement and payment. The engineer will decide on the classification of the material.			
1.4.6	Hard Rock Excavations: Such excavations generally include materials such as formations of unweathered rock that can only be removed after blasting.			
1.4.7	Protect all existing Municipal infrastructure			
1.5	Type of excavation - Intermediate			
1.5.1	Take photographic evidence of area before work commence;			
1.5.2	Expose and identify current infrastructure and services as needed;			
1.5.3	The standard Municipal wayleave procedure shall be applicable to all works;			
1.5.4	The contractor shall apply to all other authorities for wayleaves as applicable. This includes, but are not limited to Telkom, Neotel, Spoornet, Provincial Roads, SANRAL etc.			
1.5.5	Excavations shall be classified as per SANS 1200 D – for the purposes of measurement and payment. The engineer will decide on the classification of the material.			
1.5.6	Intermediate Excavations: Excavation in material that can be efficiently ripped by a Bulldozer of mass approximately 35t fitted with a single-tine ripper suitable for heavy duty ripping or the use of pneumatic tools.			
1.5.7	Protect all existing Municipal infrastructure			
1.6	Type of excavation -Soft			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
1.6.1	Take photographic evidence of area before work commence;			
1.6.2	Expose and identify current infrastructure and services as needed;			
1.6.3	The standard Municipal wayleave procedure shall be applicable to all works;			
1.6.4	The contractor shall apply to all other authorities for wayleaves as applicable. This includes, but are not limited to Telkom, Neotel, Spoornet, Provincial Roads, SANRAL etc.			
1.6.5	Excavations shall be classified as per SANS 1200 D – for the purposes of measurement and payment. The engineer will decide on the classification of the material.			
1.6.6	Soft Excavations: Excavation in material that can be efficiently removed or loaded, without prior ripping by any plant;			
1.6.7	Protect all existing Municipal infrastructure			
1.7	Compaction of excavations			
1.7.1	Excavations shall be compacted in 150mm layers’;			
1.7.2	The compaction shall not be less than 98% MODAASHTO;			
1.7.3	No compaction shall be done directly above services without the necessary bedding material;			
1.7.4	All compaction on trenches to be at least 98% MODAASHTO;			
1.7.5	Compaction tests shall be as requested by the engineer for at least: • one for every 100 meters normal trench • two tests for road crossings. • One per driveway Note: quantity to be confirmed with engineer.			
	Should the tests fail, no payment will be made to the contractor until this			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
	is corrected, and the costs of the test will be deducted from the payment.			
1.8	Backfilling with backfilling material			
1.8.1	Backfilling material should be approved by the Municipality;			
1.8.2	Excavations shall be backfilled in layers of 150mm and compacted;			
1.8.3	A layer of bedding material shall be placed around services, should the backfilling material not be suitable			
1.9	Import bedding sand			
1.9.1	Backfilling material should be approved by the Municipality;			
1.9.2	Excavations shall be backfilled in layers of 150mm and compacted;			
1.9.3	A layer of bedding material shall be placed around services, should the backfilling material not be suitable;			
1.9.4	A layer of minimum 150mm bedding material shall be placed below all services.			
1.9.5	A layer of minimum 150mm bedding material shall be placed above all services.			
1.10	Danger Tape			
1.10.1	Danger Tape shall be placed above all cable installations; and shall be supplied by the contractor			
1.10.2	Should more than one cable be installed in a trench, there shall be danger tape above each cable:			
1.10.3	The danger tape shall be a minimum of 300mm above the cable and a maximum of 500mm;			
1.10.4	The danger tape shall comply with the material specification.			
1.11	110mm Ducts			
1.11.1	Ducts shall be according to the material tender and be installed as follows:			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
1.11.2	110mm diameter sleeves for all LV cables;			
1.11.3	Ducts shall be installed across all driveways, roads and where identified by the Municipality.			
1.11.4	All Ducts to be installed at a minimum depth of 1m below the final surface;			
1.11.5	All Ducts to be extended to at least 1m at either side of the crossing;			
1.11.6	All Ducts to be sealed to prevent the ingress of dirt;			
1.11.7	All ducts to be bedded in 150mm bedding sand;			
1.11.8	All backfilling to be done in layers of maximum 300mm ensuring that the ducts doesn't bend or damage during compaction;			
1.11.9	A spare duct shall always be installed where the surface is broken up;			
1.11.10	Draw 2.5mm steel wires to be installed in the Ducts;			
1.11.12	All Duct positions to be marked on the as built drawings as well as on the curb or surface with a red stripe cut into the surface and an E.			
1.12	160mm Ducts			
1.12.1	Ducts shall be according to the material tender and be installed as follows:			
1.12.2	160mm diameter sleeves for all MV cables;			
1.12.3	Ducts shall be installed across all driveways, roads and where identified by the Municipality.			
1.12.4	All Ducts to be installed at a minimum depth of 1m below the final surface;			
1.12.5	All Ducts to be extended to at least 1m at either side of the crossing;			
1.12.6	All Ducts to be sealed to prevent the ingress of dirt;			
1.12.7	All ducts to be bedded in 150mm bedding sand;			
1.12.8	All backfilling to be done in layers of maximum 300mm ensuring that the ducts doesn't bend or damage during compaction;			

Returnable Schedules that will be incorporated into Contract **Part T2.2**

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
1.12.9	A spare duct shall always be installed where the surface is broken up;			
1.12.10	Draw 2.5mm steel wires to be installed in the Ducts;			
1.12.11	All Duct positions to be marked on the as built drawings as well as on the curb or surface with a red stripe cut into the surface and an E.			
1.13	Galvanized kicker pipes: 76mm diameter			
1.13.1	Galvanized kicker pipes according to material specification to be 76mm diameter and supplied in a 6m length. The pipe shall be strapped to the pole at 6 equally spaced positions along the length of the pole.			
2	Construction Work: MV Cable Installation			
	The installation of MV cables shall be done according to SANS 10198 and the Manufacturers requirements;			
2.1	MV Trench and related			
2.1.1	All MV trenches shall be such that the MV cable can be installed at a depth of 1m;			
2.1.2	Trenches shall be wide enough to accommodate the installation of more than 1 MV cable separated by a minimum of 300mm when required;			
2.1.3	Electrical services shall not be closer than 500mm from any other service – 1m preferred;			
2.1.4	Depending of the type of soil, bedding sand may be required:			
2.1.5	Bedding sand to be placed 150mm below the MV cables;			
2.1.6	Bedding sand to be placed 150mm above the MV cables;			
2.1.7	Danger tape shall be placed at least 300mm above all MV cables;			
2.1.8	Bedding material shall be imported as necessary – to be approved by the Engineer			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
2.1.9	All cable routes and positions must be confirmed on site by the Municipality prior to trenching;			
2.1.10	The Contractor shall not commence with the backfilling of trenches without prior notification to the Municipality for cable inspection. Should the Contractor fail to give a timeous notification, the trenches shall be re-opened at the Contractor's cost.			
2.1.11	Cable Route Markers shall be placed at:			
2.1.11.1	Above every 50 metres along a straight installation;			
2.1.11.2	Above every change in direction of the cable route;			
2.1.11.3	Above all cable joints.			
2.1.12	The Contractor shall be responsible for the preservation of all land survey, erf or other pegs, benchmarks and beacons;			
2.1.13	The contractor shall do test excavations to determine the position of possible other services;			
2.1.14	The contractor shall always prevent damage to existing services;			
2.1.15	Photographs shall be taken before excavations and again after to proof that the surface was repaired as received;			
2.1.16	Electrical cables to be installed with a minimum spacing of 300mm;			
2.1.17	Electrical services to be installed at least 500mm from other services – 1m preferred;			
2.1.18	Cable routes shall be updated on an engineering drawing and handed to the Municipality indicating the route, size, type as well as joint positions.			
2.1.19	The Details of the MV cable to be installed shall be as per the BOQ.			
2.2	MV Cable Joints			
2.2.1	Heat shrink and compound joints acceptable.			
2.2.2	All equipment used shall be according to the material specification.			

Returnable Schedules that will be incorporated into Contract **Part T2.2**

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
2.2.3	All equipment to be installed as per manufacturer specifications.			
2.2.4	The excavation for the joint hole shall be claimed under civil works – if not done in-house by the Municipality.			
2.2.5	The contractor shall ensure that the backfilling under the joint is sufficiently compacted to eliminate any stress on the joint during backfilling;			
2.2.6	A concrete cable route marker shall be installed on the repaired surface to identify the joint position.			
2.2.7	All joint positions to be clearly identified on an as built drawing.			
2.2.8	All Joint to be done by a suitable qualified person, need to have the relevant training and experience- Must be accredited by Engineer.			
2.3	MV Cable Termination (Indoor & Outdoor)			
2.3.1	All equipment used shall be according to the material specification.			
2.3.2	All equipment to be installed as per manufacturer specifications.			
2.3.3	All Terminations to be done by a suitable qualified person, need to have the relevant training and experience- Must be accredited by Engineer.			
3	Construction Work: Equipment Plinths			
3.1	Miniature Substation Plinths			
3.1.1	. Excavate up to 1000 mm below natural ground level and cast a level foundation slab of 150 mm thick, according to the sizes from the Supplier			
3.1.2	The concrete shall use 38 mm stone for a strength of 21 MPa at 30 days.			
3.1.3	Brick built onto this slab a perimeter wall which is wider than the base of the mini-substation.			
3.1.4	The plinth shall form a figure 8 to separate the low and high voltage			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
	sections of the substation. All walls to be interlocked into outer walls.			
3.1.5	Provide an opening of 500 mm wide x 500 mm high for cable entry to the front and sides of the plinth.			
3.1.6	The perimeter wall shall be built with face brick.			
3.1.7	A two-layer gasket of Malthoid shall be placed between the substation plinth and the base.			
3.1.8	The plinth shall be completely level and constructed to the manufacturer of the substation's prescription;			
3.1.9	The base shall be built up to approximately 150mm above natural ground level at the lowest point for sloped areas.;			
3.1.10	Groundworks around the minisub shall be such that it will promote the flow of water away from the substation.			
3.2	RMU Plinths			
3.2.1	Groundworks around the RMU shall be such that it will promote the flow of water away from the RMU.			
3.2.2	Cast a level foundation slab of approximately 300 mm thick, according to the sizes from the Supplier – price according to the typical detail of the Eskom specification for 3 Way RMU.			
3.2.3	The concrete shall use 38 mm stone for a strength of 25 MPa at 30 days.			
3.2.4	Provide an opening of 1000 mm x 500 mm for cable entry to the plinth.			
3.2.5	A two-layer gasket of Malthoid shall be placed between the Plinth and the RMU.			
3.2.6	The plinth shall be completely level and constructed to the manufacturer of the RMU prescription;			
3.2.7	The plinth shall be approximately 150mm above natural ground level at the lowest point for sloped areas.;			
3.3	Transformer (TRF): Plinth			

Returnable Schedules that will be incorporated into Contract **Part T2.2**

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
3.3.1	Groundworks around the TRF shall be such that it will promote the flow of water away from the TRF.			
3.3.2	Cast a level foundation slab of approximately 300 mm thick, according to the sizes from the Supplier – price according to the Eskom specification.			
3.3.3	Cast a level foundation slab of approximately 300 mm thick, according to the sizes from the Supplier.			
3.3.4	The concrete shall use 38 mm stone for a strength of 25 MPa at 30 days.			
3.3.5	A two-layer gasket of Malthoid shall be placed between the Plinth and the TRF.			
3.3.6	The plinth shall be completely level and constructed to the manufacturer of the TRF prescription;			
3.3.7	The plinth shall be approximately 150mm above natural ground level at the lowest point for sloped areas.;			
4	Construction Work: Equipment Installation			
	The price shall include all delivery cost as well as installation on the plinth or pole;			
4.1	Transformer: Installation			
4.1.1	11/0.42 kV Ground Mounted			
4.1.1.1	Danger signs to be made from non-corrosive, non-valuable metal, with engraved letters and must indicate Danger in 3 of the western cape's official languages.			
4.1.1.2	Transformers to be installed on the approved transformer plinth			
4.1.1.3	The earthing of the TRF shall comply with the typical detail of the Eskom standard D-DT-0855;			
4.1.1.4	MV Cable armouring and sheath to be bonded to Earth Bar			
4.1.1.5	The TRF steel work shall be bonded to the Earth			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
4.1.1.6	The LV Neutral shall be earthed through a surge arrestor			
4.1.1.7	LV Cable armouring to be bonded to earth			
4.1.1.8	Transformer Neutral to be earthed			
4.1.1.9	Transformer tank to be earthed			
4.1.1.10	An Equipotential Earth electrode shall be installed as per drawing			
4.1.1.11	The minimum diameter of the Cu Earth Lead to be 64mm ²			
4.1.1.12	Earthing shall be installed at a minimum depth of 600mm;			
4.1.1.13	Earthing shall be done with insulated steel wire up to a depth of 600mm where it can be connected to a copper earth spike using a bi-metal connector;			
4.1.1.14	All installations shall be tested to ensure that the reading is approved before the system will be handed over.			
4.1.1.15	The LV earth to be insulated up to 1m from the transformer position underground;			
4.1.1.16	The MV Earth shall also be insulated up to 5m from the transformer position underground.			
4.1.1.17	1 x Earth Spikes shall be installed on the 4 corners of the equipotential electrode.			
4.1.1.18	A minimum of 5 meters separation shall be maintained between the MV and LV earth electrodes at all transformer installations.			
4.1.1.19	No Readings above 1 Ohm shall be acceptable. All works other than the works prescribed above shall be paid for elsewhere.			
4.1.1.20	LV Surge arrestors to comply with D-DT-3088 (attached).			
4.1.2	11/0.42 kV Pole Mounted incl. 1 or 2 pole Cradle			
4.1.2.1	The transformers shall be as per the material specification;			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
4.1.2.2	Single Pole transformer installations shall be done according to typical detail of the Eskom Specification D-DT-1860 (attached);			
4.1.2.3	Double Pole transformer installations shall be done according to typical detail of the Eskom Specification D-DT-1861 (attached);			
4.1.2.4	The pole, cut-out fuse and surge arrester shall be priced elsewhere.			
4.1.2.5	Anti-Climbing to D-DT-3036: Galvanised metal spikes / not barb wire;			
4.1.2.6	Danger signs to be made from non-corrosive, non-valuable metal, with engraved letters and must indicate Danger in 3 of the western cape's official languages.			
4.1.2.7	Earthing shall be done as per typical detail of the Eskom D-DT-1860, D-DT-0855 & SCSASAAL9;			
4.1.2.8	Earthing shall be installed at a minimum depth of 600mm;			
4.1.2.9	Earthing shall be done with insulated conductor up to a depth of 600mm where it can be connected to a copper earth spike using a bi-metal connector;			
4.1.2.10	All installations shall be tested to ensure that the reading is approved before the system will be handed over.			
4.1.2.11	The LV earth to be insulated up to 1m from the transformer position underground;			
4.1.2.12	The MV Earth shall also be insulated up to 5m from the transformer position underground.			
4.1.2.13	2 x Earth Spikes shall be installed on top of each other at the end of each earth MV & LV.			
4.1.2.15	A minimum of 5 meters separation shall be maintained between the MV and LV earth electrodes at all transformer installations.			
4.1.2.16	No Readings above 1 Ohm shall be acceptable. All works other than the works prescribed above shall be paid for elsewhere.			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
4.2	Installation of Miniature Substations			
4.2.1	The earthing of the substation shall comply with the typical detail of the Eskom standard D-DT-0855;			
4.2.2	MV Cable armouring and sheath to be bonded to Earth Bar			
4.2.3	The Minisub steel work shall be bonded to the Earth			
4.2.4	The LV Neutral shall be earthed through a surge arrestor			
4.2.5	LV Cable armouring to be bonded to earth			
4.2.6	Insulated gland plate to be bonded to earth			
4.2.7	Transformer Neutral to be earthed			
4.2.8	Transformer tank to be earthed			
4.2.9	An Equipotential Earth electrode shall be installed 500mm around the substation and bonded to the main earth Bar;			
4.2.10	The minimum diameter of the Cu Earth Lead to be 64mm ²			
4.2.11	Earthing shall be installed at a minimum depth of 600mm;			
4.2.12	Earthing shall be done with insulated conductor up to a depth of 600mm where it can be connected to a copper earth spike using a bi-metal connector;			
4.2.13	All installations shall be tested to ensure that the reading is approved before the system will be handed over.			
4.2.14	The LV earth to be insulated up to 1m from the transformer position underground;			
4.2.15	The MV Earth shall also be insulated up to 5m from the transformer position underground.			
4.2.16	1 x Earth Spikes shall be installed on the 4 corners of the equipotential electrode.			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
4.2.17	A minimum of 5 meters separation shall be maintained between the MV and LV earth electrodes at all transformer installations.			
4.2.18	No Readings above 1 Ohm shall be acceptable. All works other than the works prescribed above shall be paid for elsewhere.			
4.2.19	LV Surge arrestors to comply with D-DT-3088 (attached).			
4.3	Installation of RMU / Switchgear			
4.3.1	The earthing of the RMU shall comply with the typical detail of the Eskom standard D-DT-0855;			
4.3.2	MV Cable armouring and sheath to be bonded to Earth Bar			
4.3.3	The RMU steel work shall be bonded to the Earth			
4.3.4	An Equipotential Earth electrode shall be installed 500mm around the substation and bonded to the main earth Bar;			
4.3.5	The minimum diameter of the Cu Earth Lead to be 64mm ²			
4.3.6	Earthing shall be installed at a minimum depth of 600mm;			
4.3.7	Earthing shall be done with insulated steel wire up to a depth of 600mm where it can be connected to a copper earth spike using a bi-metal connector;			
4.3.8	All installations shall be tested to ensure that the reading is approved before the system will be handed over.			
4.3.9	The MV Earth shall also be insulated up to 5m from the transformer position underground.			
4.3.10	1 x Earth Spikes shall be installed on the 4 corners of the equipotential electrode.			
4.3.11	No Readings above 1 Ohm shall be acceptable. All works other than the works prescribed above shall be paid for elsewhere.			
5	Construction Work: Equipment Installation			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
	MV Overhead lines and related Equipment			
5.1	Pole Holes			
5.1.1	Traffic control needs to be done as needed;			
5.1.2	Ensure that the complete area is fully barricaded;			
5.1.3	Excavation should be kept to a minimum in order not to unnecessarily disturb the in-situ material;			
5.1.4	The backfilled material should be compacted in 150mm layers to 98% MODAASHTO;			
5.1.5	Pole holes shall be such that poles can be planted at a minimum depth of 600mm + 10% of the pole length. I.e.:			
5.1.5.1	9m Poles – 1500 mm			
5.1.5.2	11m Poles – 1800 mm			
5.1.6	Construction Works Installation of Insulators 11kV			
5.1.6.1	Long Rod Insulator			
5.1.6.2	Line Post Insulator			
5.2	Installation of Wooden Poles			
	Poles shall be planted at depth indicated on D-DT- 0332.			
5.2.1	Dressing of 11m Wooden Poles with A-frame, Strain and Terminal Structures			
5.2.1.1	The installation shall be done according to typical detail of the Eskom specification D-WC-6022, Set 1, sheet 2 (attached);			
5.2.1.2	The installation shall be rated for operation on 22kV system;			
5.2.1.3	No Anchor should be included in the price – shall be priced elsewhere.			
5.2.1.4	Price should include for a complete assembly.			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
5.2.2	Dressing of 11m Wooden Poles with A-frame, Intermediate Structures			
5.2.2.1	The installation shall be done according to typical detail of the Eskom specification D-WC-6022, Set 1, sheet 1 (attached);			
5.2.2.2	The installation shall be rated for operation on 22kV system;			
5.2.2.3	Wrap locks according to Eskom D-DT-0256;			
5.2.3	Dressing of 11m Wooden Poles with Strain Cross Arm			
5.2.3.1	The installation shall be done according to typical detail of the Eskom specification D-DT-1808 (attached);			
5.2.3.2	The installation shall be rated for operation on 22kV system;			
5.2.3.3	No Anchor should be included in the price – shall be priced elsewhere.			
5.2.3.4	Price should include all nuts and bolts required for a complete assembly.			
5.3	Installation of Conductors			
5.3.1	The conductor shall be installed at the tension prescribed by the manufacturer;			
5.3.2	The tension shall be confirmed by measurements and noted on the record drawing;			
5.3.3	The conductor shall not be dragged along the ground during installation, but shall be installed directly from the rolls onto the poles;			
5.3.4	The conductor shall be installed as far as possible in full lengths to minimize the amount of mid-span joints;			
5.3.5	The installations shall adhere to the minimum clearances as set out by the OHS Act.			
5.4	OH, Line Route Details			
5.4.1	The overhead line route shall be surveyed by a registered land surveyor;			
5.4.2	The route shall be provided in soft copy to the Municipality in CAD, SHP or			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
	GIS format;			
5.4.3	This as-built drawings shall include the structure drawings of each pole position as well as the tension of the line and GPS positioning;			
5.4.4	The overhead line design shall be done by a registered consulting engineer;			
5.4.5	Bush clearing shall be kept to a minimum to not damage any vegetation if it is not required.			
5.5	Stays			
5.5.1	Normal Stay Installation			
5.5.1.1	The installation shall be done according to typical detail of the Eskom specification D-DT-0350 & 1165 (attached);			
5.1.1.2	Excavations shall be claimed elsewhere.			
5.5.2	Flying Stay Installation			
5.5.2.1	The installation shall be done according to typical detail of the Eskom specification D-DT-1168 (attached);			
5.5.2.2	Price should include all nuts and bolts required for a complete assembly.			
5.5.2.3	Excavations shall be claimed elsewhere;			
5.5.2.4	Assume a road width of 16m for determining stay wire length.			
5.6	Surge arrestors			
	Three surge arresters complete with mounting and earthing.			
5.6.1	The Surge Arrestors shall be installed as per typical detail of the Eskom D-DT-1842;			
5.7	Drop Out Fuses			
	Three drop out fuse-links complete with mounting and earthing.			
5.7.1	The fuses shall be installed as per typical detail of the Eskom D-DT-1850;			

Returnable Schedules that will be incorporated into Contract **Part T2.2**

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
5.7.2	The cross arm shall be 1700mm and therefore will influence the spacing as indicated on the specification – the spacing shall be proportionally adjusted;			
5.8	Load Break Switch			
	The load break switch shall be installed as per Eskom D-DT-1857;			
	SECTION B: GENERAL LABOUR WORKS			
1.1	Switching			
1.1.1	Determine whether other customers are affected by the work;			
1.1.2	Arrange necessary shutdowns and give notice to all affected customers.			
1.1.3	No work shall be done without the prior knowledge of the Municipal's Electrical Manager or his authorised representative;			
1.1.4	No work shall be done on or near live installations in accordance with the OHS Act;			
1.1.5	Switching shall be arranged in advance with the Municipality:			
1.1.6	Only authorised Municipal electrical staff shall do switching on the system;			
1.1.7	Switching shall be arranged with enough lead time for the Municipality to give notice to its customers;			
1.1.8	The system shall be earthed before any work commence – by the Municipality;			
1.1.9	The contractor shall ensure that the power is switched off and the earthing is installed before working on the system;			
1.1.10	Confirm with tests;			
1.1.11	The contractor shall remain responsible for his own working earth before commencement of works in accordance with the OHS Act;			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
1.1.12	Switching points to be locked and switch-on shall only be done once the contractor hands over a completed and tested installation as applicable.			
1.2	Hourly Rates: Normal Hours			
1.2.1	Hourly rates should be approved by the client before approved to commence			
1.2.2	These hours relate to instructions by the customer's authorised representative that is not included elsewhere in the BOQ			
1.2.3	This section relates to work during normal working hours			
1.2.4	Normal Working Hours (Monday to Saturday 07:00 – 17:00)			
1.3	Hourly Rates: After Normal Hours			
1.3.1	Hourly rates should be approved by the client before approved to commence			
1.3.2	These hours relate to instructions by the customer's authorised representative that is not included elsewhere in the BOQ			
1.3.3	This section relates to work after normal working hours			
1.3.4	After Hours (Monday to Saturday 17:00 – 07:00)			
1.4	Hourly Rates: Sundays and Public Holidays			
1.4.1	Hourly rates should be approved by the client before approved to commence			
1.4.2	These hours relate to instructions by the customer's authorised representative that is not included elsewhere in the BOQ			
1.4.3	This section relates to work on Sundays and Public Holidays			
1.5	Transport			
1.5.1	The transport rates shall include all qualified operators, running costs and fuel requirements to use the machine for the works identified by the Municipality.			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
1.5.2	All transport shall only be paid from the Main Municipal Building in Voortrekker Street up to the project works. All costs relating to transport for projects shall be included in the BOQ items as needed.			
1.5.3	The transport in this section relates to instructions by the customer's authorised representative that is not included elsewhere in the BOQ			
1.6	Traffic Control			
1.6.1	A Rate per day should be priced. Should only a portion of the day be required, a pro-rata payment will be done with a minimum of half a day in order to cover setup fees.			
1.6.2	Traffic accommodation as required by legislation shall be the contractor's responsibility as and when needed.			
1.6.3	All signage shall comply with the requirements of SARTSM – Vol 3: Signals at Roadworks.			
1.6.4	All workers shall where the required PPE			
1.7	Testing			
	All testing instruments to have a valid calibration certificate no older than 12 months.			
1.7.1	Voltage Test			
1.7.1.1	The Voltage test shall be done on Low voltage only;			
1.7.1.2	All voltages between phases and phases to neutral shall be recorded on a certificate;			
1.7.2	Oil sample test (test method in brackets):			
1.7.2.1	The test shall be done by a SANS 17025 accredited laboratory;			
1.7.2.2	The test may include the following:			
1.7.2.2.1	Water content (IEC 814);			
1.7.2.2.2	Dielectric Strength (IEC 156);			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
1.7.2.2.3	Acidity (ASTM D974);			
1.7.2.2.4	Interfacial Tension (ASTM D971);			
1.7.2.2.5	IFT-NN relationship;			
1.7.2.2.6	Dissipation Factor (IEC 247);			
1.7.2.2.7	PCB test (ASTM D4059-Gas chromatography/Electron Capture);			
1.7.2.2.8	Degree of Polymerization (Furaldehyde Analysis);			
1.7.2.2.9	Transformer oil gas analysis (DGA - IEC 567);			
1.7.2.2.10	Corrosive Sulphur test;			
1.7.3	Earthing Test			
1.7.3.1	The earth reading shall be recorded on a certificate;			
1.7.3.2	Only the wire & earth peg method shall be acceptable			
1.7.4	Pressure Test			
1.7.4.1	The leakage current between phases and phases to neutral shall be recorded on a certificate;			
1.7.4.2	Test shall be done on 11kV PILC cables			
1.7.5	Partial Discharge Test			
1.7.5.1	Partial discharge tests may be done on the following assets:			
1.7.5.1.1	Cables and terminations;			
1.7.5.1.2	Power transformers & bushings			
1.7.5.1.3	Switchgear.			
1.7.5.2	A PD test report shall be submitted for each asset tested indicating problem areas to be addressed.			
1.8	As Built Information			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
1.8.1	The as built information shall be complete, showing the position and details of newly installed equipment. This shall include the position of joints and sleeves. These drawings shall be handed to the Municipality upon completion of any construction work and the price shall be included in the labour component.			
1.8.2	The as built can be in CAD format or a hand sketch if the information is complete;			
1.8.3	Operation manuals			
1.8.4	All test certificates and manuals of the various manufacturers/suppliers as well as tests on site must be provided to the Engineer before equipment/material will be accepted and or switched on.			
1.9	Specialist Subcontractor			
	Should specialist services or a sub-contractor be required because of any work to be done this section shall be used for the works.			
1.9.1	Protection Settings Engineer: Specialist			
1.9.1.1	Hourly rate for the specialist services that are required from time to time for amongst others the following services: Switchgear Protection settings (Calculate & configure) Fault investigations Protection equipment testing The works may include any of the above mentioned.			
1.9.2	Maintenance on 11kV Switchgear specialist			
1.9.2.1	Hourly rate for the specialist services that are required from time to time for amongst others the following services:			
1.9.2.1.1	Servicing of MV switchgear			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
1.9.3	Land Surveyor: Specialist			
1.9.3.1	Hourly rate for the specialist services that are required from time to time for amongst others the following services:			
1.9.3.1.1	Land surveyor rate per hour for site Survey / indicating of various positions or plotting site surveys on a GIS system.			
1.9.4	Cable Fault location: Specialist			
1.9.4.1	Emergency response within maximum 3 hours			
1.9.4.2	Fault location on MV cables of cables with lengths of up to 5000m			
1.9.4.3	Identification of faults and reporting on repair options			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
	SECTION A: LV WORKS			
1	LV Underground			
1.1	LV Trench			
1.1.1	All LV trenches shall be such that the LV cable can be installed at a depth of 600mm;			
1.1.2	Trenches shall be wide enough to accommodate the installation of more than 1 LV cable separated by a minimum of 300mm when required;			
1.1.3	Electrical services shall not be closer than 500mm from any other service – 1m preferred;			
1.1.4	Depending on the type of soil, bedding sand may be required:			
1.1.5	Bedding sand to be placed 150mm below the cables;			
1.1.6	Bedding sand to be placed 150mm above the cables;			
1.1.7	Danger tape shall be placed at least 300mm above all cables;			
1.1.8	All trenches to be compacted in 150mm layers;			
1.1.9	All compaction on trenches to be at least 98% MODAASHTO;			
1.1.10	The Municipality reserves the right to do spot checks on the compaction before any payment is made;			
1.1.11	Should the tests fail, no payment will be made to the contractor until this is corrected, and the costs of the test will be deducted from the payment.			
1.2	Construction Work: LV Cable Installation			
	The installation of LV cables shall be done according to the Manufacturers requirements;			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
1.2.1	All cable routes and positions must be confirmed on site by the Municipality prior to trenching;			
1.2.2	The Contractor shall not commence with the backfilling of trenches without prior notification to the Municipality for cable inspection. Should the Contractor fail to give a timeous notification, the trenches shall be re-opened at the Contractor's cost.			
1.2.3	The Contractor shall be responsible for the preservation of all land survey, erf or other pegs, benchmarks and beacons;			
1.2.4	The contractor shall do test excavations to determine the position of possible other services;			
1.2.5	The contractor shall always prevent damage to existing services;			
1.2.6	Photographs shall be taken before excavations and again after to proof that the surface was repaired as received;			
1.2.7	Electrical cables to be installed with a minimum spacing of 300mm;			
1.2.8	Electrical services to be installed at least 500mm from other services – 1m preferred.			
1.3	Earth Conductors			
1.3.1	Bare copper as per material specification and BOQ;			
1.3.2	Installation shall be as specified.			
1.4	Kiosks – Install Distribution Kiosks			
1.4.1	Switch off the installation and ensure that it is safe for work;			
1.4.2	Place kiosk base over the existing cables ensuring not to damage any existing services;			
1.4.3	Install the required equipment into the new kiosk:			
1.4.4	Spacing such that the connection of the cables is not obstructed;			
1.4.5	All equipment to be fully labelled with destination and size – engraved			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
	labels only;			
1.4.6	Cable Termination of 4 core Cu/Al feeder cables:			
1.4.7	Connect the feeder cables to the busbars ensuring that all nuts are tight to prevent hot spots;			
1.4.8	Only correctly sized k-clamps shall be acceptable;			
1.4.9	Shall make use of suitably rated break-out boots – 400V or higher;			
1.4.10	Heat shrink insulation to be optimally used – minimize the use of electrical tape;			
1.4.11	All cables to be labelled using cable ties and prefabricated letters;			
1.4.12	No stickers to be used.			
1.4.13	The base of the kiosk shall be filled with sand.			
1.4.14	All kiosks to be fully labelled;			
1.4.15	All kiosks to be locked with Municipal locks.			
1.5	Pole Box (Overhead Line Installation) - Install			
1.5.1	Switch off the installation and ensure that it is safe for work;			
1.5.2	Mount bundle box on pole ensuring not to damage any existing services;			
1.5.3	Install the required equipment into the new box:			
1.5.4	Spacing such that the connection of the cables is not obstructed;			
1.5.5	All equipment to be fully labelled with destination and size – engraved labels only;			
1.6	Cable Termination of 4 core Cu/Al feeder cables /ABC			
1.6.1	Connect the feeder cables to the CB terminals ensuring that all nuts are tight to prevent hot spots;			
1.6.2	Only correctly sized glands shall be acceptable as applicable;			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
1.6.3	Shall make use of suitably rated break-out boots – 400V or higher;			
1.6.4	Lugs shall be as per material specification;			
1.6.5	Heat shrink insulation to be optimally used – minimize the use of electrical tape;			
1.6.6	All cables to be labelled using cable ties and prefabricated letters;			
1.6.7	No stickers to be used.			
1.6.8	The pole box shall be as per material specification;			
1.6.9	Installation according to the requirements of the manufacturer;			
1.6.10	All boxes to be fully labelled.			
2	ERECTION AND MAINTENANCE OF LV OVERHEAD LINES			
	Overhead lines: LV- Rate per meter for LV line to be built according to the specs in the BOQ. This section is not itemised regarding the amount of strain poles and intermediate poles and the price will be based on an average cost for the line per meter.			
2.1	Installation of Wooden Poles			
2.1.1	Poles shall be planted at depth indicated on D-DT- 0332 – 1.8m.			
2.2	Dressing of Wooden Poles			
2.2.1	Dressing of 9m pole with Strain/terminal structure: Bare Conductor			
2.2.2	The installation shall be done as per Eskom specification D-DT-0921			
2.2.3	No service connection should be included in the price;			
2.2.4	Should include all mounting requirements;			
2.2.5	Stays to be priced elsewhere			
2.3	Dressing of 9m pole with Strain/terminal structure: ABC Conductor			
2.3.1	The installation shall be done as per Eskom specification D-DT-1121			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
2.3.2	No service connection should be included in the price;			
2.3.3	Should include all mounting requirements.			
2.3.4	Stays to be priced elsewhere			
2.4	Dressing of 9m pole with Intermediate structure: Bare Conductor			
2.4.1	The installation shall be done as per Eskom specification D-DT-0920			
2.4.2	No service connection should be included in the price;			
2.4.3	Should include all insulators, termination of conductor and mounting requirements.			
2.4.4	Stays to be priced elsewhere			
2.5	Dressing of 9m pole with Intermediate structure: ABC Conductor			
2.5.1	The installation shall be done as per Eskom specification D-DT-1100			
2.5.2	No service connection should be included in the price;			
2.5.3	Should include all insulators, termination of conductor and mounting requirements.			
2.5.4	Stays to be priced elsewhere			
3	Construction Work: T-Offs			
3.1	ABC T-Off at ABC Strain			
3.1.1	The installation shall be done as per Eskom specification D-DT-1142			
3.1.2	No service connection should be included in the price;			
3.1.3	Should include all installation requirements.			
3.1.4	Stays to be priced elsewhere			
3.2	ABC T-Off at ABC Suspension			
3.2.1	The installation shall be done as per Eskom specification D-DT-1140			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
3.2.2	No service connection should be included in the price;			
3.2.3	Should include all installation requirements.			
3.2.4	Stays to be priced elsewhere			
3.3	Bare Conductor T-Off at Intermediate structure			
3.3.1	The installation shall be done as per Eskom specification D-DT-0925			
3.3.2	No service connection should be included in the price;			
3.3.3	Should include all installation requirements			
3.3.4	Stays to be priced elsewhere			
3.4	Bare Conductor T-Off at Strain Structure			
3.4.1	The installation shall be done as per Eskom specification D-DT-0927			
3.4.2	No service connection should be included in the price;			
3.4.3	Should include all installation requirements			
3.4.4	Stays to be priced elsewhere			
4	Construction Work: OH Line Route Details			
4.1	The overhead line route shall be surveyed by a registered land surveyor; Use rates in Section B. Do not include this in the rates in section A.			
4.2	The route shall be provided in soft copy to the Municipality in CAD, SHP or GIS format;			
4.3	This as-built drawings shall include the structure drawings of each pole position as well as the tension of the line and GPS positioning;			
4.4	The overhead line design shall be done by a registered consulting engineer;			
4.5	Bush clearing shall be kept to a minimum to not damage any vegetation if it is not required.			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
5	Stay Installation			
5.1	Normal stay			
5.1.1	The installation shall be done according to Eskom specification D-DT-0350& 1165 (attached);			
5.1.2	Excavations shall be claimed elsewhere.			
5.2	Flying Stay Installation			
5.2.1	The installation shall be done according to Eskom specification D-DT-1168 (attached);			
5.2.2	Excavations shall be claimed elsewhere;			
5.2.3	Assume a road width of 16m for determining stay wire length.			
5.3	Strut Poles			
5.3.1	The installation shall be done according to Eskom specification D-DT-0342 (attached);			
5.3.2	Anti-Climbing to D-DT-3036: Galvanized metal spikes / not barb wire			
5.3.3	Price should include all nuts and bolts required for a complete assembly.			
5.3.4	Excavations shall be claimed elsewhere.			
6	Connections			
6..1	Install PPM and Ready board inside a residential unit			
6.1.	All work to comply with SANS 10142-1			
6.1.3	No private property shall be damaged during installation.			
6.1.4	Photos of the current installation shall be taken before any work is done for record purposes			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
	SECTION B: GENERAL LABOUR WORKS			
1.1	Switching			
1.1.1	Determine whether other customers are influenced by the work;			
1.1.2	Arrange necessary shutdowns and give notice to all influenced customers.			
1.1.3	No work shall be done without the prior knowledge of the Municipal's Electrical Manager or his authorised representative;			
1.1.4	No work shall be done on or near live installations in accordance with the OHS Act;			
1.1.5	Switching shall be arranged in advance with the Municipality:			
1.1.6	Only authorised Municipal electrical staff shall do switching on the system;			
1.1.7	Switching shall be arranged with enough lead time for the Municipality to give notice to its customers;			
1.1.8	The system shall be earthed before any work commence – by the Municipality;			
1.1.9	The contractor shall ensure that the power is switched off and the earthing is installed before working on the system;			
1.1.10	Confirm with tests;			
1.1.11	The contractor shall remain responsible for his own working earth before commencement of works in accordance with the OHS Act;			
1.1.12	Switching points to be locked and switch-on shall only be done once the contractor hands over a completed and tested installation as applicable.			
1.2	Hourly Rates: Normal Hours			
1.2.1	Hourly rates should be approved by the client before approved to commence			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
1.2.2	These hours relate to instructions by the customer's authorised representative that is not included elsewhere in the BOQ			
1.2.3	This section relates to work during normal working hours			
1.2.4	Normal Working Hours (Monday to Saturday 07:00 – 17:00)			
1.3	Hourly Rates: After Normal Hours			
1.31	Hourly rates should be approved by the client before approved to commence			
13.2	These hours relate to instructions by the customer's authorised representative that is not included elsewhere in the BOQ			
1.3.3	This section relates to work after normal working hours			
1.3.4	After Hours (Monday to Saturday 17:00 – 07:00)			
1.4	Hourly Rates: Sundays and Public Holidays			
1.4.	Hourly rates should be approved by the client before approved to commence			
1.4.2	These hours relate to instructions by the customer's authorised representative that is not included elsewhere in the BOQ			
1.4.3	This section relates to work on Sundays and Public Holidays			
1.5	Transport			
1.5.1	The transport rates shall include all qualified operators, running costs and fuel requirements to use the machine for the works identified by the Municipality.			
1.5.2	All transport shall only be paid from the Main Municipal Building in Voortrekker Street up to the project works. All costs relating to transport for projects shall be included in the BOQ items as needed.			
1.5.3	The transport in this section relates to instructions by the customer's authorised representative that is not included elsewhere in the BOQ			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
1.6	Traffic Control			
1.6.1	A Rate per day should be priced. Should only a portion of the day be required, a pro-rata payment will be done with a minimum of half a day to cover setup fees.			
1.6.2	Traffic accommodation as required by legislation shall be the contractor's responsibility as and when needed.			
1.6.3	All signage shall comply with the requirements of SARTSM – Vol 3: Signals at Roadworks.			
1.6.4	All workers shall wear the required PPE			
1.7	Testing			
	All testing instruments to have a valid calibration certificate no older than 12 months.			
1.7.1	Voltage Test			
1.7.1.1	The Voltage test shall be done on Low voltage only;			
1.7.1.2	All voltages between phases and phases to neutral shall be recorded on a certificate;			
1.7.2	Earthing Test			
1.7.2.1	The earth reading shall be recorded on a certificate;			
1.7.2.2	Only the wire & earth peg method shall be acceptable			
1.7.3	Megger Test			
1.7.3.1	The leakage current between phases and phases to neutral shall be recorded on a certificate;			
1.7.3.2	Test shall be done on 400kV LV cables			
1.8	As Built Information			
1.8.1	The as built information shall be complete, showing the position and details of newly installed equipment. This shall include the position of			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
	joints and sleeves. These drawings shall be handed to the Municipality upon completion of any construction work and the price shall be included in the labour component.			
1.8.2	The as built can be in CAD format or a hand sketch if the information is complete;			
1.8.3	Operation manuals			
1.8.4	All test certificates and manuals of the various manufacturers/suppliers as well as tests on site must be provided to the Engineer before equipment/material will be accepted and or switched on.			
1.9	Specialist Subcontractor			
	Should specialist services or a sub-contractor be required because of any work to be done this section shall be used for the works.			
1.9.1	Land Surveyor: Specialist			
1.9.1.1	Hourly rate for the specialist services that are required from time to time for amongst others the following services:			
1.9.1.2	Land surveyor rate per hour for site Survey / indicating of various positions or plotting site surveys on a GIS system.			
1.9.2	Cable Fault location: Specialist			
1.9.2.1	Emergency response within maximum 3 hours			
1.9.2.2	Fault location on LV cables of cables with lengths of up to 1000m			
1.9.2.3	Identification of faults and reporting on repair options			

Returnable Schedules that will be incorporated into Contract **Part T2.2**

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	

	SECTION A: STREET LIGHTING INSTALLATION & MAINTENANCE			
	All pricing in this section shall include all cost in order to complete the line item identified such as mounting requirements, wiring, labour as well as the use of Cherry-picker truck etc. as required. The works in the general section shall only be applicable for work which is not mentioned and is an extension to the works.			
1	LV Underground Cable: Installation			
1.1	LV Trench			
1.1.1	All LV trenches shall be such that the LV cable can be installed at a depth of 600mm;			
1.1.2	Trenches shall be wide enough to accommodate the installation of more than 1 LV cable separated by a minimum of 300mm when required;			
1.1.3	Electrical services shall not be closer than 500mm from any other service – 1m preferred;			
1.1.4	Depending of the type of soil, bedding sand may be required:			
1.1.5	Bedding sand to be placed 150mm below the cables;			
1.1.6	Bedding sand to be placed 150mm above the cables;			
1.1.7	Danger tape shall be placed at least 300mm above all cables;			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
1.1.8	All trenches to be compacted in 150mm layers;			
1.1.9	All compaction on trenches to be at least 98% MODAASHTO;			
1.1.10	The Municipality reserves the right to do spot checks on the compaction before any payment is made;			
1.1.11	Should the tests fail, no payment will be made to the contractor until this is corrected and the costs of the test will be deducted from the payment.			
1.2	Construction Work: LV Cable Installation			
1.2.1	The installation of LV cables shall be done according to the Manufacturers requirements;			
1.2.2	All cables to comply with the Material specification			
1.2.3	All cable routes and positions must be confirmed on site by the Municipality prior to trenching;			
1.2.4	The Contractor shall not commence with the backfilling of trenches without prior notification to the Municipality for cable inspection. Should the Contractor fail to give a timeous notification, the trenches shall be re-opened at the Contractor's cost.			
1.2.5	The Contractor shall be responsible for the preservation of all land survey, erf or other pegs, benchmarks and beacons;			
1.2.6	The contractor shall do test excavations to determine the position of possible other services;			
1.2.7	The contractor shall always prevent damage to existing services;			
1.2.8	Photographs shall be taken before excavations and again after to proof that the surface was repaired as received;			
1.2.9	Electrical cables to be installed with a minimum spacing of 300mm;			
1.2.10	Electrical services to be installed at least 500mm from other services – 1m preferred.			
1.3	Earth Conductors			

Returnable Schedules that will be incorporated into Contract **Part T2.2**

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
1.3.1	Bare copper as per material specification and BOQ;			
1.3.2	Installation shall be continuous with all cables.			
2	Construction Work: Installation of Street Light Poles			
2.1	Streetlight poles shall be installed to Eskom specs D-DT-0020 / 1 / 2			
2.2	Pole shorter than 11m to be planted at a minimum depth of 1.6m			
2.3	11m Poles to be planted at a minimum of 2m depth.			
2.4	Construction Work: Installation of outreach arms			
2.4.1	The outreach arms shall be as per the material specification;			
2.4.2	The price shall include all mounting requirements;			
2.4.3	The outreach arms shall be manufactured to fit to the specific pole as required			
2.4.4	The outreach arms for existing poles shall be investigated on site as the need arise			
2.5	Construction Work: Installation of Street Lights			
2.5.1	All lights to be tested to confirm that it works before leaving the site;			
2.6	Construction Work: Wiring of Street Lights			
2.6.1	Only the main supply to the luminaire shall be done on site;			
2.6.2	The wiring shall be done with 2.5mm House wire as per material specification;			
2.6.3	The colours shall be red for the phase and black for the neutral;			
2.6.4	Each pole shall be connected to the earth which is installed with the feeder cable;			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
2.6.5	The earthing shall be tested under the testing section;			
2.6.6	A 5A single phase circuit breaker of minimum 2.5kA shall be installed in each pole.			
2.6.7	The Luminaire and its casing shall be earthed and checked for earth continuity to the main earth.			
2.7	Installation of Streetlight control equipment			
	Photocell and contactors shall be supplied by contractor			
2.7.1	The photocell shall be manufactured by a company with a reputable reputation and record – we will not accept any unknown brands – photocell's fail at an alarming rate in WM area.			
2.7.2	Only AC3 rated contactors shall be accepted.			
	SECTION B: GENERAL LABOUR WORKS			
1.1	Switching			
1.1.1	Determine whether other customers are influenced by the work;			
1.1.2	Arrange necessary shutdowns and give notice to all influenced customers.			
1.1.3	No work shall be done without the prior knowledge of the Municipal's Electrical Manager or his authorised representative;			
1.1.4	No work shall be done on or near live installations in accordance with the OHS Act;			
1.1.5	Switching shall be arranged in advance with the Municipality:			
1.1.6	Only authorised Municipal electrical staff shall do switching on the system;			
1.1.7	Switching shall be arranged with enough lead time for the Municipality to give notice to its customers;			
1.1.8	The system shall be earthed before any work commence – by the			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
	Municipality;			
1.1.9	The contractor shall ensure that the power is switched off and the earthing is installed before working on the system;			
1.1.10	Confirm with tests;			
1.1.11	The contractor shall remain responsible for his own working earth before commencement of works in accordance with the OHS Act;			
1.1.12	Switching points to be locked and switch-on shall only be done once the contractor hands over a completed and tested installation as applicable.			
1.2	Hourly Rates: Normal Hours			
1.2.1	Hourly rates should be approved by the client before approved to commence			
1.2.2	These hours relate to instructions by the customer's authorised representative that is not included elsewhere in the BOQ			
1.2.3	This section relates to work during normal working hours			
1.2.4	Normal Working Hours (Monday to Saturday 07:00 – 17:00)			
1.3	Hourly Rates: After Normal Hours			
1.31	Hourly rates should be approved by the client before approved to commence			
13.2	These hours relate to instructions by the customer's authorised representative that is not included elsewhere in the BOQ			
1.3.3	This section relates to work after normal working hours			
1.3.4	After Hours (Monday to Saturday 17:00 – 07:00)			
1.4	Hourly Rates: Sundays and Public Holidays			
1.4.	Hourly rates should be approved by the client before approved to commence			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
1.4.2	These hours relate to instructions by the customer's authorised representative that is not included elsewhere in the BOQ			
1.4.3	This section relates to work on Sundays and Public Holidays			
1.5	Transport			
1.5.1	The transport rates shall include all qualified operators, running costs and fuel requirements to use the machine for the works identified by the Municipality.			
1.5.2	All transport shall only be paid from the Main Municipal Building in Voortrekker Street up to the project works. All costs relating to transport for projects shall be included in the BOQ items as needed.			
1.5.3	The transport in this section relates to instructions by the customer's authorised representative that is not included elsewhere in the BOQ			
1.6	Traffic Control			
1.6.1	A Rate per day should be priced. Should only a portion of the day be required, a pro-rata payment will be done with a minimum of half a day in order to cover setup fees.			
1.6.2	Traffic accommodation as required by legislation shall be the contractor's responsibility as and when needed.			
1.6.3	All signage shall comply with the requirements of SARTSM – Vol 3: Signals at Roadworks.			
1.6.4	All workers shall where the required PPE			
1.7	Testing			
	All testing instruments to have a valid calibration certificate no older than 12 months.			
1.7.1	Voltage Test			
1.7.1.1	The Voltage test shall be done on Low voltage only;			
1.7.1.2	All voltages between phases and phases to neutral shall be recorded on a			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
	certificate;			
1.7.2	Earthing Test			
1.7.2.1	The earth reading shall be recorded on a certificate;			
1.7.2.2	Only the wire & earth peg method shall be acceptable			
1.7.3	Megger Test			
1.7.3.1	The leakage current between phases and phases to neutral shall be recorded on a certificate;			
1.7.3.2	Test shall be done on 400kV LV cables			
1.8	As Built Information			
1.8.1	The as built information shall be complete, showing the position and details of newly installed equipment. This shall include the position of joints and sleeves. These drawings shall be handed to the Municipality upon completion of any construction work and the price shall be included in the labour component.			
1.8.2	The as built can be in CAD format or a hand sketch if the information is complete;			
1.8.3	Operation manuals			
1.8.4	All test certificates and manuals of the various manufacturers/suppliers as well as tests on site must be provided to the Engineer before equipment/material will be accepted and or switched on.			
1.9	Specialist Subcontractor			
	Should specialist services or a sub-contractor be required because of any work to be done this section shall be used for the works.			
1.9.1	Land Surveyor: Specialist			
1.9.1.1	Hourly rate for the specialist services that are required from time to time for amongst others the following services:			

Returnable Schedules that will be incorporated into Contract Part T2.2

ITEM NR	DESCRIPTION	COMPLY		Details of deviations. If not sufficient space, attached annexure of deviations
		YES	NO	
1.9.1.2	Land surveyor rate per hour for site Survey / indicating of various positions or plotting site surveys on a GIS system.			
1.9.2	Cable Fault location: Specialist			
1.9.2.1	Emergency response within maximum 3 hours			
1.9.2.2	Fault location on LV cables of cables with lengths of up to 1000m			
1.9.2.3	Identification of faults and reporting on repair options			

The Bidder hereby confirms that the information given above is true and correct:

.....

(Name in Print)

.....

(Signature)

GEORGE MUNICIPALITY

DIRECTORATE: ELECTRICAL ENGINEERING SERVICES

TENDER NUMBER: GMT014/24-25

**TENDER FOR TENDER FOR THE APPOINTMENT OF CONTRACTORS
FOR THE EXECUTION OF CAPITAL PROJECTS, AS AND WHEN
REQUIRED FROM DATE OF APPOINTMENT UNTIL 30 JUNE 2029**

**Other Documents Required For Tender
Evaluation Purposes (Part T2.2)**

- | | |
|------------|---|
| Form 2.2.1 | Certificate of Tenderer's Attendance at the Compulsory Information Session / Site Meeting |
| Form 2.2.2 | Written Proof of Tenderers registration at the Construction Industry Development Board (CIDB) |

**FORM 2.2.1 CERTIFICATE OF TENDERER'S ATTENDANCE AT THE
COMPULSORY CLARIFICATION MEETING**

This is to certify that I, ,
representative of (Tenderer)

.....
of (address)

.....
Telephone number

Fax number

attended Clarification Meeting on **Monday , 27 July 2026 at 11:30** in the company of

(George Municipality / Employer's Representative)

PLEASE NOTE:

Tenderers are requested to submit the minutes received at above-mentioned compulsory information session/meeting with their Tender documents. (Non-submission of this information may lead to rejection of this Tender)

TENDERER 'S REPRESENTATIVE:

GEORGE MUNICIPALITY / EMPLOYER'S REPRESENTATIVE:

**FORM 2.2.2 PROOF OF REGISTRATION AT THE CONSTRUCTION INDUSTRY
DEVELOPMENT BOARD (CIDB)**

The Tenderer is to affix to this page:

- Written proof of Tenderers registration at the CIDB.

Returnable Schedules that will be incorporated into Contract Part T2.3

GEORGE MUNICIPALITY

DIRECTORATE: ELECTRICAL ENGINEERING SERVICES

TENDER NUMBER: GMT014/24-25

**TENDER FOR TENDER FOR THE APPOINTMENT OF CONTRACTORS
FOR THE EXECUTION OF CAPITAL PROJECTS, AS AND WHEN
REQUIRED FROM DATE OF APPOINTMENT UNTIL 30 JUNE 2029**

**Returnable Schedules that will be
Incorporated in the Contract (Part T2.3)**

Form 2.3.1

Record of Addenda to Tender Documents

Returnable Schedules that will be incorporated into Contract Part T2.3

FORM 2.3.1 RECORD OF ADDENDA TO TENDER DOCUMENTS

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

	Date	Title or Details
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Attach additional pages if more space is required.

Signed: Date:

Name: Position:

SIGNED ON BEHALF OF TENDERER:

Returnable Schedules that will be incorporated into Contract Part T2.3

1. Infrastructure and resources available

Evaluation of the following in terms of the size, nature and complexity of goods and/or services required:

- Physical facilities.
- Infrastructure and resources available for the contract owned by the Tenderer.
- Infrastructure and resources the Tenderer intends renting, should the contract be awarded to him.

2. Size of enterprise, and current workload

Evaluation of the Tenderer's position in terms of:

- Previous and expected current annual turnover
- Current contractual obligations
- Capacity to execute the contract

3. Staffing profile

Evaluation of the Tenderer's position in terms of:

- Staff available for this contract being Tendered for
- Qualifications and experience of key staff to be utilized on this contract.

4. Previous experience

Evaluation of the Tenderer's position in terms of his previous experience. Emphasis will be placed on the following:

- Experience in the relevant technical field
- Experience of contracts of similar size
- Some or all of the references will be contacted to obtain their input.

5. Financial ability to execute the contract

Evaluation of the Tenderer's financial ability to execute the contract. Emphasis will be placed on the following:

- Professional indemnity
- Contact the Tenderer's bank manager to assess the Tenderer's financial ability to execute the contract and the Tenderer hereby grants his consent for this purpose.

If the Tender does **not** meet the requirements contained in the George Municipality Procurement Policy, and the mentioned framework, it will be rejected by the Council, and may not subsequently be made acceptable by correction or withdrawal of the non-conforming deviation or reservation.

6. Penalties

The George Municipality will if upon investigation it is found that a preference in terms of the Act and these regulations has been obtained on a fraudulent basis, or any specified goals are not attained in the performance of the contract, on discretion of the Departmental Head, one or more of the following penalties will be imposed:

- Cancel the contract and recover all losses or damages incurred or sustained from the Tenderer.
- Impose a financial penalty of twice the theoretical financial preference associated with the claim, which was made in the Tender.
- Restrict the Tenderer, its shareholders and directors on obtaining any business from the George Municipality for a period of 5 years.

Returnable Schedules that will be incorporated into Contract Part T2.3

Compliance with Employment Equity Act 55 of 1998

Attach a valid certificate from the Department of Labour, or a declaration (Refer to Equity Ownership Table) by the designated EMPLOYER, that the EMPLOYER complies with the relevant chapters of the Employment Equity Act.

A failure to comply with the above is sufficient ground for rejection of any offer to conclude an agreement or for cancellation of the agreement.

Definitions in terms of the last-mentioned Act.

“designated EMPLOYER means-

- a) an EMPLOYER who employs 50 or more employees;
- b) an EMPLOYER who employs fewer than 50 employees, but has a total annual turnover that is equal to or above the applicable annual turnover of a small business in terms of Schedule 4 to this Act.”

“Schedule 4”

TURNOVER THRESHOLD APPLICABLE TO DESIGNATED EMPLOYERS

Sector or sub sector in accordance with the Standard Industrial Classification	Total annual turnover
Agriculture	R 2,00 m
Mining and Quarrying	R 7,50 m
Manufacturing	R 10,00 m
Electricity, Gas and Water	R 10,00 m
Construction	R 5,00 m
Retail and Motor Trade and Repair Services	R 15,00 m
Wholesale Trade, Commercial Agents and Allied Services	R 25,00 m
Catering, Accommodation and other Trade	R 5,00 m
Transport, Storage and Communications	R 10,00 m
Finance and Business Services	R 10,00 m
Community, Social and Personal Services	R 5,00 m

GEORGE MUNICIPALITY

DIRECTORATE: ELECTRICAL ENGINEERING SERVICES

**TENDER NUMBER: GMT014/24-25- TENDER FOR THE APPOINTMENT OF
CONTRACTORS FOR THE EXECUTION OF CAPITAL PROJECTS, AS AND
WHEN REQUIRED FROM DATE OF APPOINTMENT UNTIL 30 JUNE 2029**

Technical Schedules (Part T2.4)

TECHNICAL A-B SCHEDULES:

Schedule A: Purchaser's specific requirements

Schedule B: Particulars of equipment to be supplied (to be completed by tenderer)

GEORGE MUNICIPALITY

DIRECTORATE: ELECTRICAL ENGINEERING SERVICES

TENDER NUMBER: GMT014/24-25

**TENDER FOR TENDER FOR APPOINTMENT OF CONTRACTORS FOR
THE EXECUTION OF CAPITAL PROJECTS, AS AND WHEN REQUIRED
M FROM DATE OF APPOINTMENT UNTIL 30 JUNE 2029**

The Contract (Part C)

Part C1	Agreement and Contract Data
Part C2	Pricing Data
Part C3	Scope of Works

GEORGE MUNICIPALITY

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DIRECTORATE: ELECTRICAL ENGINEERING SERVICES

TENDER NUMBER: GMT014/24-25

TENDER FOR TENDER FOR APPOINTMENT OF CONTRACTORS FOR
THE EXECUTION OF CAPITAL PROJECTS, AS AND WHEN REQUIRED
M FROM DATE OF APPOINTMENT UNTIL 30 JUNE 2029

Agreement And Contract Data (Part C1)

Part C1.1	Form of Offer and Acceptance
Part C1.2	Contract Data
Part C1.3	Objections and Complainants Form
Part C1.4	Form of Professional Indemnity Insurance
Part C1.5	Occupational health and safety

GEORGE MUNICIPALITY**DIRECTORATE: ELECTRICAL ENGINEERING SERVICES****TENDER NUMBER: GMT014/24-25****TENDER FOR TENDER FOR APPOINTMENT OF CONTRACTORS FOR
THE EXECUTION OF CAPITAL PROJECTS, AS AND WHEN REQUIRED
M FROM DATE OF APPOINTMENT UNTIL 30 JUNE 2029****Form of Offer and Acceptance (Part C1.1)****(AGREEMENT) OFFER**

The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract in respect of the following works:

George Municipality: Tender No. GMT014/24-25: Tender for tender for appointment of contractors for the execution of capital projects, as and when required m from date of appointment until 30 June 2029

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

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

**THE OFFERED TOTAL OF THE PRICES INCLUSIVE OF ALL APPLICABLE TAXES
IS:**

Category EP2:

.....

.....rand (in words); R (in figures),

Category EP3:

.....

.....rand (in words); R (in figures),

Category EP4:

.....

.....rand (in words); R (in figures),

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

For the Tenderer:**Signature:****Name:****Capacity:****Name and address of organisation:**
.....
.....
.....
.....**Signature of Witness:****Name of Witness:****Date:**

ACCEPTANCE

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

The terms of the contract, are contained in:

Part C1 – Agreements and Contract Data, (which includes this Agreement)

Part C2 – Pricing Data

Part C3 – Scope of Work

Part C4 – Site Information

and drawings and documents or parts thereof, which may be incorporated by reference into Parts C1 to C4 above.

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

The Tenderer shall within two weeks after receiving a completed copy of this Agreement, contact the Employer's representative (whose details are given in the Contract Data) to arrange the delivery of any bonds, guarantees, proof of insurance and any other documentation to be provided in terms of the Conditions of Contract identified in the Contract Data. Failure to fulfil any of these obligations in accordance with those terms shall constitute a repudiation of this Agreement.

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

For the Employer:

Signature:

Name:

Capacity:

Name and address of organisation:
.....
.....
.....
.....

Signature of Witness:

Name of Witness:

Date:

SCHEDULE OF DEVIATIONS**Notes:**

1. The extent of deviations from the tender documents issued by the Employer prior to the tender closing date is limited to those permitted in terms of the Conditions of Tender.
2. A Tenderer's covering letter shall not be included in the final contract document. Should any matter in such letter, which constitutes a deviation as aforesaid, become the subject of Agreements reached during the process of offer and acceptance, the outcome of such Agreement shall be recorded here.
3. Any other matter arising from the process of offer and acceptance either as a confirmation, clarification or change to the tender documents and which it is agreed by the Parties becomes an obligation of the contract shall also be recorded here.
4. Any change or addition to the tender documents arising from the above Agreements and recorded here, shall also be incorporated into the final draft of the Contract.

(i) Subject:

.....

Details:

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

(ii) Subject:

.....

Details:

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

(iii) Subject:

.....

Details:

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

(iv) Subject:

.....
Details:

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

By the duly authorised representatives signing this Schedule of Deviations, the Employer and the Tenderer agree to and accept the foregoing Schedule of Deviations as the only deviations from and amendments to the documents listed in the Tender Data and addenda thereto as listed in the Tender Schedules, as well as any confirmation, clarification or change to the terms of the offer agreed by the Tenderer and the Employer during this process of offer and acceptance.

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

For the Tenderer:

Signature:

Name:

Capacity:

Name and address of organisation:

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

Signature of Witness:

Name of Witness:

Date:

For the Employer:

Signature:

Name:

Capacity:

Name and address of organisation:
.....
.....
.....
.....

Signature of Witness:

Name of Witness:

Date:

CONFIRMATION OF RECEIPT

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

the (day)

of (month)

20 (year)

at (place)

For the Contractor:

Signature:

Name:

Capacity:

Name and address of organisation:
.....
.....
.....
.....

Signature of Witness:

Name of Witness:

GEORGE MUNICIPALITY

DIRECTORATE: ELECTRICAL ENGINEERING SERVICES

TENDER NUMBER: GMT14/25-26

**TENDER FOR TENDER FOR APPOINTMENT OF CONTRACTORS FOR
THE EXECUTION OF CAPITAL PROJECTS, AS AND WHEN REQUIRED
M FROM DATE OF APPOINTMENT UNTIL 30 JUNE 2029**

Contract Data (Part C1.2)

C.1.2 CONTRACT DATA

PART 1: DATA PROVIDED BY THE EMPLOYER

CONDITIONS OF CONTRACT

The General Conditions of Contract for Construction Works, Fourth Edition (2025), published by the South African Institution of Civil Engineering, Private Bag X200, Halfway House, 1685, is applicable to this Contract and is obtainable from www.saice.org.za.

Tenderers must read the abovementioned General Conditions of Contract in order to understand the implications of the Data provided by the Employer, as well as the Data which has to be completed by the Tenderer.

CONTRACT SPECIFIC DATA

The following contract-specific data, referring to the General Conditions of Contract for Construction Works, Fourth Edition (2025), are applicable to this Contract:

PART 1: DATA PROVIDED BY THE EMPLOYER

The following contract specific data are applicable to this Contract:

Clause			
1.1.1.13	The Defects Liability Period is 12 months measured from the date of the Certificate of Completion		
1.1.1.14	The time for achieving Practical Completion includes the days referred to under Clause 5.3.2 and the non-working days but excludes the special non-working days (Clauses 5.1.1 and 5.8.1).		
1.1.1.15	The name of the Employer is George Municipality.		
1.1.1.16	The Authorised and Designated representative of the Employer is: Rasmus Estherhuysen (Project Manager)		
1.1.1.26	The Pricing Strategy is a Re-measurement Contract.		
1.2.1.2	The Employer's address for receipt of communications is: <table border="1"> <tr> <td> <u>Physical address:</u> George Municipality York Street George, 6530 </td><td> <u>Postal address:</u> George Municipality PO Box 19 George, 6530 </td></tr> </table> Telephone: (044) 801 9248 E-mail: rgestherhuysen@george.gov.za	<u>Physical address:</u> George Municipality York Street George, 6530	<u>Postal address:</u> George Municipality PO Box 19 George, 6530
<u>Physical address:</u> George Municipality York Street George, 6530	<u>Postal address:</u> George Municipality PO Box 19 George, 6530		
	The Project is for the Tender for appointment of contractors for the execution of capital projects, as and when required m from date of appointment until 30 June 2029.		
4.4.2	The Service Provider is required to obtain the Employer's prior approval in writing before taking any of the following actions: Appointing Sub-Contractors for the performance of any part of the Services.		
4.4.3	It is the responsibility of the Contractor to select competent and capable Sub-Contractor/s that meet the requirements of the tender. The Contractor is responsible for all due diligence on their Sub-Contractor/s, and will be held liable for their performance		
4.4.4	The Sub-Contractor/s proposed by the Contractor in the Schedule of Sub-Contractors (Part T2.2.7) shall not be substituted without the prior consultation and approval of the Employer.		
5.1.1 and 5.8.1	The non-working days are Sundays, with the exception of work which must be undertaken during scheduled outages planned for Sundays. The special non-working days are: The public holidays. The year-end break commencing on about 16 December and ending on about the first Monday of the subsequent year, or the days on which the Contractor grants the majority of his permanent workforce leave.		
5.3.1	The documentation required before commencement with Works execution are: Health and Safety Plan (refer to Clause 4.3). Initial programme (refer to Clause 5.6). Insurance (refer to Clause 8.6). Occupational Health and Safety Agreement (refer to Part C1.4).		

	Letter of Good Standing from the Compensation Commissioner. Works permit from the Department of Labour.
5.3.2	The time to submit the documentation required before commencement with Works execution is 14 days.
5.4.2	The access and possession of the Site shall not be exclusive to the Contractor but as set out in the Site Information.
5.12.2.2	A delay caused by inclement weather conditions will be regarded as a delay only if, in the opinion of the Employer's Agent, all progress on an item or items of work on the critical path of the working programme of the Contractor has been brought to a halt. Delays on working days only (based on a five-day working week) will be taken into account for the extension of time, but the Contractor shall make provision in his programme of work for an expected delay of 2 (Two) working days per month caused by normal rainy weather, for which he will not receive any extension of time. Extension of time during working days will be granted to the degree to which actual delays, as defined above, exceed the number of 2 (Two) working days. It shall be further noted that where the critical path is not affected, no extension of time for abnormal climatic conditions or for any other reason will be entertained. Abnormal climatic conditions are conditions that occur less frequently than once in ten years.
5.13.1	The penalty for failing to complete the Works is R2 000.00 per day with a maximum of 5% of the order amount.
5.14.1	The requirements for achieving Practical Completion are that the Works must be in a state of readiness, fit for the intended purpose and occupation without danger or undue inconvenience to the Employer. The MV electrical network marked-up "As-Built" drawings and operational and maintenance manuals, test certificates, commissioning reports, etc. must be submitted to the satisfaction of the Supply Authority, before the Certificate of Practical Completion will be issued.
5.14.3.2	The Contractor's obligation to insure those works certified as practically complete, shall cease when the Certificate of Completion is issued.
5.14.6	The work and/or rectification of certain defects and/or the clearing of the Site that may be completed by a later date than the date of the Certificate of Completion shall be the following: None.
5.16.3	The latent defects liability period is 5 years.
6.5.1.2.3	The percentage allowance on the net cost of materials actually used in the completed Works is 10%, unless specifically tendered otherwise in the pricing schedules. The percentage allowance on the gross remuneration of the workmen and foremen actually engaged is 10%, unless specifically tendered otherwise in the pricing schedules.
6.2.1	The Contractor shall select one security in PART 2 of which the percentages shall be as follows: Fixed Performance Guarantee being 10% of the Contract Sum, or Variable Performance Guarantee being 10% of the Contract Sum for the first period and being 5% of the Contract Sum for the second period.
6.8.2	The Value of the certificates issued shall be adjusted in accordance with the Contract Price Adjustment Schedule with the following values: The value of "x" is 0.1 (Fixed portion). The values of the coefficients are:

	a = 0.2 (Labour) b = 0 (Contractor's equipment) c = 0.8 (Material) d = 0 (Fuel) The indices for "L", "P", "M" and "F" are the following as published by the Steel and Engineering Industries Federation of South Africa (SEIFSA): "L" is the "Labour Index" and shall be Table C.3 for "All Hourly Paid Employees". "P" is the "Contractor's Equipment Index" and shall not be applicable. "M" is the "Material Index" and shall be Table G.1 for "Electrical Engineering". "F" is the "Fuel Index" and shall not be applicable. The base month is the month and year prior to the closing of the tender.
6.8.3	Price adjustments for variations in the costs of special materials are not allowed.
6.10.1.5	The percentage advance on materials not yet built into the Permanent Works is 80%. The percentage advance on Plant not yet supplied to Site is 0%. Documentary evidence of ownership and an indemnity against claims in respect of the plant and or materials shall be provided, and items shall be clearly marked and identified as being the property of the Employer. A Certificate of Ownership of Plant / Materials as per Part C1.5 shall be submitted to the Employer's Agent together with the claim for payment.
6.10.3	Retention of 5% will be withheld on progress payments, and will be paid out by final completion. A guarantee in lieu of retention is not permitted.
6.10.6.2	Where the Prescribed Rate of Interest Act does not apply, the interest rate on late payments shall be Nil %.
6.11	Failing agreement, between the Contractor and the Employer's Agent, both the Preliminary and General Fixed Charge and Time Related Items shall be adjusted on a pro-rata basis.
8.6.1.1.2	The value of Plant and material supplied by the Employer to be included in the insurance sum is approximately R1 500 000 per project/order.
8.6.1.1.3	The amount to cover professional fees for repairing damage and loss to be included in the insurance sum is 5% of the contract sum.
8.6.1.3	The limit of indemnity for liability insurance is R10 million. This shall include public liability and contractor's risk.
10.3.2	Amicable settlement in terms of Clause 10.4 shall be contemplated for all disputes prior to referring any dispute to adjudication or arbitration.
10.5.3	The number of Adjudication Board Members to be appointed is one.
10.7.1	The determination of disputes shall be by arbitration.

11.	Additional clauses to the General Conditions of Contract:
11.1	Acts or omissions by Mandatories: In terms of Section 37(2) of the Occupational Health and Safety Act of 1993 (Act 85 of 1993), the Contractor hereby agrees that the Employer is relieved of any and all of its liabilities in terms of Section 37(1) of this Act in respect of any acts or omissions of the Contractor and his employees to the extent permitted by this Act, and that this contract comprises the written agreement between the Employer and the Contractor contemplated in Section 37(2).
11.2	Maintenance of Mandatory Registrations: The Contractor shall ensure that his registration with the Construction Industry Development Board (CIDB) and as a supplier on the Western Cape Supplier Database (WCSD) and Central Supplier Database (National Treasury) and the Department of Labour are maintained until the Completion of the whole of the works.
11.3	Local Labour: The Contractor and Sub-Contractors shall make use of 100% local unskilled labourers from the local area. All trenching and backfilling for cables and excavation and backfilling for poles shall be undertaken by hand. Arrangements must be made in advance with ward Councilor and Municipality's EPWP division. The Contractor shall report monthly on the standard INEP EPWP reporting template providing details of the employees in the working areas for the preceding month, which includes the details for any Sub-Contractors and their employees.
11.4	The penalty for negligence or non-performance of the Contractor in respect of Health and Safety (OHS) regulations and specification is R2 500-00 per incident

PART 2: DATA PROVIDED BY THE SERVICE PROVIDER

The Tenderer shall provide the following information:

Clause	Data						
1.1.1.9	The name of the Contractor is:						
1.2.1.2	The address of the Contractor is: Physical address: Postal address: E-mail address:						
1.1.1.14/ 5.5.1	The Contractor hereby confirms that he will comply with the practical completion times stipulated under the Data Provided by the EmployerYes / No?. Should the Contractor not comply with these dates, the tender may be regarded as non-responsive.						
6.2.1	The security to be provided by the Contractor shall be one of the following below to be selected by the Contractor. The percentages shall be as the Employer has stated under Clause 6.2.1 in PART 1: <table border="1"> <thead> <tr> <th>Type of security</th><th>Contractor's Selection (Indicate "Yes" or "No")</th></tr> </thead> <tbody> <tr> <td>Fixed Performance Guarantee</td><td>.....</td></tr> <tr> <td>Variable Performance Guarantee</td><td>.....</td></tr> </tbody> </table>	Type of security	Contractor's Selection (Indicate "Yes" or "No")	Fixed Performance Guarantee		Variable Performance Guarantee	
Type of security	Contractor's Selection (Indicate "Yes" or "No")						
Fixed Performance Guarantee							
Variable Performance Guarantee							

GEORGE MUNICIPALITY

DIRECTORATE: ELECTRICAL ENGINEERING SERVICES

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**TENDER FOR TENDER FOR APPOINTMENT OF CONTRACTORS FOR
THE EXECUTION OF CAPITAL PROJECTS, AS AND WHEN REQUIRED
M FROM DATE OF APPOINTMENT UNTIL 30 JUNE 2029**

Objections and Complainants Form (Part C1.3)

(Section 4, item 50 of the George Municipality's Supply Chain Management Policy)

(1) Details of Objector/Complainant

Name: _____

Address: (postal and street): _____

Tel: _____ Fax: _____

Contact person: _____

Reference number of Tender : _____

Other Party's Details (If any)

Name: _____

Address: (postal and street): _____

Tel: _____ Fax: _____

Contact person: _____

Reference number of Tender: _____

Description of Issue[s] in Dispute

List of Documents Attached

Determination Sought in Respect of Objection or Complaint

Form submitted by:

Name:

Signature:

Position:

Date:

Place:

GEORGE MUNICIPALITY

DIRECTORATE: ELECTRICAL ENGINEERING SERVICES

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**TENDER FOR TENDER FOR APPOINTMENT OF CONTRACTORS FOR
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Public liability insurance

(Part C1.4)

The Tenderer must affix proof of Insurance to this page.

GEORGE MUNICIPALITY

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**TENDER FOR TENDER FOR APPOINTMENT OF CONTRACTORS FOR THE
EXECUTION OF CAPITAL PROJECTS, AS AND WHEN REQUIRED M FROM
DATE OF APPOINTMENT UNTIL 30 JUNE 2029**

**OCCUPATIONAL HEALTH AND SAFETY
AGREEMENT**

(Part C1.4)

AGREEMENT MADE AND ENTERED INTO BETWEEN

.....(Employer)

and.....(Contractor / Mandatary)

IN TERMS OF SECTION 37(2) OF THE OCCUPATIONAL HEALTH AND SAFETY
ACT, ACT No. 85 OF 1993 AS AMENDED.

I,

.....representing

the Contractor / Mandatary as an employer in its own right, do hereby undertake to
ensure, as far as is reasonably practicable, that all work will be performed, and
all equipment, machinery or plant used in such a manner as to comply with the
provisions of the Occupational Health and Safety Act (OHSA) and the
Regulations promulgated there under.

I furthermore confirm that we are registered with the Compensation Commissioner
and that all registration and assessment monies due to the Compensation
Commissioner have been fully paid or that we are insured with an approved
licensed compensation insurer.

COID ACT Registration Number:

OR Compensation Insurer: Policy No.:

I undertake to appoint, where required, suitable competent persons, in writing, in terms of the requirements of OHSA and the Regulations and to charge him/them with the duty of ensuring that the provisions of OHSA and Regulations as well as the Employer's Special Conditions of Contract, Way Leave, Lock-Out and Work Permit Procedures are adhered to as far as reasonably practicable.

I further undertake to ensure that any subcontractors employed by me will enter into an occupational health and safety agreement separately, and that such subcontractors comply with the conditions set.

I hereby declare that I have read and understand the Occupational Health and Safety Conditions and undertake to comply therewith at all times.

I hereby also undertake to comply with the Occupational Health and Safety Specification and Plan.

Signed aton the.....day
of.....20....

Witness

Contractor / Mandatory

Signed at on the.....day
of.....20

Witness

Employer

GEORGE MUNICIPALITY

DIRECTORATE: ELECTRICAL ENGINEERING SERVICES

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**TENDER FOR TENDER FOR APPOINTMENT OF CONTRACTORS FOR
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Pricing Data (Part C 2)

C2.1 Pricing Instructions

C2.2 Schedule of Activities

GEORGE MUNICIPALITY**DIRECTORATE: ELECTRICAL ENGINEERING SERVICES****TENDER NUMBER: GMT014/24-25****TENDER FOR TENDER FOR APPOINTMENT OF CONTRACTORS FOR
THE EXECUTION OF CAPITAL PROJECTS, AS AND WHEN REQUIRED
M FROM DATE OF APPOINTMENT UNTIL 30 JUNE 2029****Pricing Instructions (Part C2.1)****C2.1 PRICING INSTRUCTIONS**

- 1.0 The Bills of Quantities form part of and must be read in conjunction with the Specification. The Price Summary is to reflect the total price carried forward from the Bills of Quantities which need to be submitted with the tender documents.
- 2.0 The tender price must be based on the Bills of Quantities. The priced Bills of Quantities shall be submitted with the tender documents.
- 3.0 The completed Bills of Quantities shall detail the unit rate and total amount for material and labour respectively for each Item. Tenderers are advised to check their Item extensions and total additions since no claim for arithmetical errors will be considered.

“Material Rate” shall include the supply and delivery of all items of material and equipment (plant) to the site including all incidentals necessary for the completion of each Item, plus the profit thereon. Rates shall be exclusive of VAT.

“Labour Rate” shall include the cost of all labour, both skilled and unskilled, including supervision and profit required to complete the installation of all material covered by each Item. Rates shall be exclusive of VAT.

- 4.0 No alteration, erasure or addition is to be made in the text of the Bills of Quantities. Should any erasure or addition be made it will not be recognised but the original wording of the Bills of Quantities will be adhered to.
- 5.0 The quantities in the Bills are not to be considered as limiting or extending the amount of work to be done and materials to be supplied.
- 6.0 The Engineer will check the completed Bills of Quantities for arithmetical errors, omissions and discrepancies in accordance with the Standard Conditions of Tender.
- 7.0 Only major Items have been scheduled but the Tenderer shall nevertheless include for all things he considers necessary whether specified in detail or not to complete the work to specification and in a satisfactory and workmanlike manner, in order to provide a complete and working system. No extra price will be

considered for the provision of materials which should have been allowed in order to provide the completed works unless detailed by the Contractor in the space provided elsewhere in the Specification.

- 8.0 Where alternative prices for equipment of different manufacture are offered, the lowest alternative price for equipment to specification must be included, against the relevant Item in the Bills of Quantities. The remaining alternative prices must be furnished separately.

Where such equipment is found not to comply with the Specification, the Contractor will be required to provide equipment which does comply, without adjustment to the price in the Bills of Quantities.

- 9.0 All items in the Bills of Quantities are deemed to include supply, delivery, installation and commissioning where appropriate, unless specifically stated otherwise. The unit rate must include for all things necessary, whether specified in detail or not, including all components, small installation materials, allowance for off-cuts, wastage etc., erection and fixings to complete the item to Specification in a satisfactory and workmanlike manner, in order to provide a complete and working system.
- 10.0 In certain instances prices are requested for Items which may be required during the progress of the work, but which are not included in the known quantities of material / labour required. These Items are indicated by the designation "R/O" (rate only) in the "Quantity" column and the price is to be noted in the "Rate" columns only and must not be carried forward.
- 11.0 Where no rates are filled-in by the Tenderer, or the rate is indicated as Nil, it will be assumed that there is no charge for the particular item and that the cost thereof has been included in the other rates provided.
- 12.0 The Bills of Quantities shall not be used for ordering purposes. The Contractor shall check and measure the lengths of cables / conductors on site before ordering any of these materials.
- 13.0 The quantities and rates included for Daywork shall form part of the tender price, but Tenderers shall note that this item must be regarded as provisional and will only be payable to the Contractor if and when a written instruction to this effect has been issued.
- 14.0 Expenditure in connection with Provisional and Prime Cost Sums and under the Contingency Allowance (if any) shall be solely at the discretion and on the written instruction of the Engineer.
- 15.0 An Excel spreadsheet version of the Bill can be made available to Tenderers on request. The Engineer or the Employer does not take responsibility for any arithmetical or other errors that may occur due to the use of the spreadsheet. The original wording and quantities of the Bills included in the tender document will be adhered. The priced printed version of the Bill may be submitted; however, each page must be initialled by the Tenderer. The Price Summary must be completed by hand and signed in black ink.

- 16.0 Tenderers must note that wherever this document refers to any trademark, name, patent, design, type, specific origin or producer, such reference shall be deemed to be accompanied by the words 'or approved equivalent'

GEORGE MUNICIPALITY**DIRECTORATE: ELECTRICAL ENGINEERING SERVICES****TENDER NUMBER: GMT014/24-25**

**TENDER FOR TENDER FOR APPOINTMENT OF CONTRACTORS FOR
THE EXECUTION OF CAPITAL PROJECTS, AS AND WHEN REQUIRED
M FROM DATE OF APPOINTMENT UNTIL 30 JUNE 2029**

Pricing Schedule (C2.2)

Indicate for which category you will be bidding for:

Category	Tender for Category? YES	Tender for Category? NO
Category 2 EP		
Category 3 EP		
Category 4 EP		

CATEGORY EP2 MV WORKS | SECTION A

All materials shall be supplied by the contractor, unless stated that the municipality will free issue materials. The rates must include transportation of materials to site, as well as all other overhead and P&G costs. The rates should also make provision for all OHS act requirements and other contractual requirements. The rates should also include for all labour and machinery and vehicles needed to complete the work. All material shall comply to the George Municipality's material specification. **Where the Municipality free issue the material the contractor shall insert the Rand value of the handling fee in the material rate column. Should no value be inserted no handling fee shall be paid. (Handling fee shall include all overhead cost to use the materials on the project covering the risk of handling from collection to installation.)**

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,1	Excavation					
1,1,1	Removal and repair of Tarmac (Cut size as needed)	m ²	1			
1,1,2	Removal and repair of Concrete (Cut size as needed) Rate to include material	m ³	1			
1,1,3	Removal and repair of Brick Paving	m ²	1			
1,1,4	Removal of Soil - Hard Excavation	m ³	1			
1,1,5	Removal of Soil - Intermediate Excavation	m ³	1			
1,1,6	Removal of Soil - Soft Excavation	m ³	1			
1,1,7	Compacting of excavation	m ³	1			
1,1,8	Backfilling with backfilling material	m ³	1			
1,1,9	Import bedding sand	m ³	1			
1,1,10	Supply and Install Danger Tape above Cables	m	1			
1,1,11	Installation of 110mm diameter Ducts	m	1			
1,1,12	Installation of 160mm diameter Ducts	m	1			
1,1,13	Supply and Install Galvanized kicker pipes according to material specification to be 76mm diameter and supplied in a 6m length- price to include strapping as specified	m	1			

1,2	MV Underground Cables Cu and Al					
	Installation of MV Cables, in trenches and through ducts. Cables to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,2,1	70/3C to 95/3C	m	1			
1,2,2	150/3C to 185/3C	m	1			
1,2,3	240/3C to 300/3C	m	1			

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,3	Installation of Earth Conductors, in trenches and through ducts. Conductors to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,31	70mm Bare Copper Conductor - Earth Wire	m	1			
1,4	JOINTS					
1,4,1	Jointing of 11kV cables by suitably qualified personnel - Cable Joints 11kV (heat shrink) - PILC Cu cables. Joints to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,4,1,1	35mm ² - 70mm ²	each	1			
1,4,1,2	50mm ² - 95mm ²	each	1			
1,4,1,3	95mm ² - 185mm ²	each	1			
1,4,1,4	185mm ² - 300mm ²	each	1			
1,4,2	Jointing of 11kV cables by suitably qualified personnel - Cable Joints 11kV (heat shrink) - PILC Al Cables. Joints to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,4,2,1	35mm ² - 70mm ²	each	1			
1,4,2,2	50mm ² - 95mm ²	each	1			
1,4,2,3	95mm ² - 185mm ²	each	1			
1,4,2,4	185mm ² - 300mm ²	each	1			
1,4,5	Jointing of 11kV cables by suitably qualified personnel - Cable Joints 11kV (heat shrink) - Transition Joints. Joints to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,4,5,1	35mm ² - 70mm ²	each	1			

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1,4,5,2	50mm ² - 95mm ²	each	1			
1,4,5,3	95mm ² - 185mm ²	each	1			
1,4,5,4	185mm ² - 300mm ²	each	1			

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,5	TERMINATIONS					
1,5,1	Termination of 11kV cables by suitably qualified personnel - Indoor 11kV Cable HeatShrink Termination - PILC Cu Cables. Terminations to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,5,1,1	25mm ² - 70mm ²	each	1			
1,5,1,2	50mm ² - 120mm ²	each	1			
1,5,1,3	95mm ² - 185mm ²	each	1			
1,5,1,4	185mm ² - 300mm ²	each	1			
1,5,2	Termination of 11kV cables by suitably qualified personnel - Indoor 11kV Cable Heat Shrink Termination - PILC AI Cables. Terminations to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,5,2,1	35mm ² - 70mm ²	each	1			
1,5,2,2	50mm ² - 95mm ²	each	1			
1,5,2,3	95mm ² - 185mm ²	each	1			
1,5,2,4	185mm ² - 300mm ²	each	1			
1,5,3	Termination of 11kV cables by suitably qualified personnel - outdoor 11kV Cable Heat Shrink Termination - PILC Cu Cables. Terminations to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,5,3,1	25mm ² - 70mm ²	each	1			
1,5,3,2	50mm ² - 120mm ²	each	1			
1,5,3,3	95mm ² - 185mm ²	each	1			
1,5,3,4	185mm ² - 300mm ²	each	1			

1,5,4	Termination of 11kV cables by suitably qualified personnel - outdoor 11kV Cable Heat Shrink Termination-PILC Al Cables. Terminations to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,5,4,1	25mm ² - 70mm ²	each	1			
1,5,4,2	50mm ² - 120mm ²	each	1			
1,5,5,3	95mm ² - 185mm ²	each	1			
1,5,5,4	185mm ² - 300mm ²	each	1			
NO	DESCRIPTION, please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,6	Equipment: Plinths					
1,6,1	Miniature Substation Plinth - Supply and Install (All plinths according to drawings, material to be supplied by contractor and included in rate)	each	1			
1,6,2	RMU Plinth - Supply and Install (All plinths according to drawings, material to be supplied by contractor and included in rate)	each	1			
1,6,3	Transformer Plinth - Supply and Install (500kVA Ground Mounted Transformer, material to be supplied by contractor and included in rate)	each	1			
1,7	Equipment: Transformers. The secondary voltage of all transformers to be 420 V. Transformers supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,7,1	Installation of TRF - 200kVA to 500kVA 11/0.42kV Ground Mounted	each	1			
1,7,1	Installation of TRF - 630kVA to 1000kVA 11/0.42kV Ground Mounted	each	1			
1,8	Installation of TRF - Pole Mounted incl. 1 or 2 pole Cradle as below: Transformers supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,8,1	- 16kVA 11/0.42kV Pole Mounted incl. Single Pole Transformer installation - include Cradle and mounting requirements. Poles to be claimed elsewhere	each	1			
1,8,2	- 25kVA 11/0.42kV Pole Mounted incl. Single Pole Transformer installation - include Cradle and mounting requirements. Poles to be claimed elsewhere	each	1			

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1,8,3	- 50kVA 11/0.42kV Pole Mounted incl. Single Pole Transformer installation - include Cradle and mounting requirements. Poles to be claimed elsewhere	each	1			
1,8,4	- 100kVA 11/0.42kV Pole Mounted incl. Double Pole Transformer installation- include Cradle and mounting requirements. Poles to be claimed elsewhere	each	1			
1,8,5	- 200kVA 11/0.42kV Pole Mounted incl. Double Pole Transformer installation- include Cradle and mounting requirements. Poles to be claimed elsewhere	each	1			
NO	DESCRIPTION, please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,9	Equipment: Miniature Substations. The secondary voltage of all transformers to be 420 V. Mini Substations supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,9,1	Installation of miniature substation - with 3-way SF6 RMU with 2 x isolators for ring feed and local transformer Breaker with protection relay	each	1			
1,10	Equipment: Ring Main Units / Switchgear. RMU's supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,10,1	Installation of RMU (2 x Isolator, 1 x 630A Feeder Breaker) for outdoor use in coastal spec weatherproof canopy	each	1			
1,11	MV Overhead Lines (A-frame / staggered vertical / & supports)					
1,11,1	All-inclusive construction for Fir, Hazel or Pine conductor, vertical staggered Overhead Line - i.e. Conductor length will be 3 x 3000m = 9000m +10% for other factors, such as sag etc. for tender purposes. Stays and supporting structures can be claimed below. Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)	m	1			

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1,11,2	All-inclusive construction for Oak, Mulberry or Sycamore conductor, vertical staggered Overhead Line - i.e. Conductor length will be 3 x 3000m = 9000m +10% for other factors, such as sag etc. for tender purposes. Stays and supporting structures can be claimed below. Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)	m	1			
1,11,3	End shackle pole with three strain insulators (Long Rod Silicon)	each	1			
1,11,4	Strain pole with six strain insulators	each	1			
1,11,5	Intermediate pole with three intermediate insulators (Silicon Line Post)	each	1			
1,11,6	Stay Complete	each	1			
1,11,7	Flying Stay Complete	each	1			
1,11,8	Strut Complete	each	1			
NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,11,9	Three surge arresters complete with mounting and earthing.	each	1			
1,11,10	Three drop out fuse-links complete with mounting and earthing.	each	1			
1,11,11	Installation of Load-break switch including all mounting requirements. Load break to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)	each	1			
1,11,12	Install 65A fuse Links in Drop-out fuse cartridges (set of 3)	sets	1			
1,11,13	Install wooden transmission poles		1			
1,11,13,1	9m	each	1			
1,11,13,2	11m	each	1			
1,11,14	Install bare conductor onto a newly built line or existing poles where the conductor needs to be replaced. Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,11,14,1	Fir, Hazel or Pine	m	1			
1,11,14,2	Oak, Mulberry or Sycamore	m	1			
	TOTAL PRICE FOR CATEGORY EP2 MV SECTION A, Excl. VAT					

CATEGORY EP2 LV WORKS | SECTION A

All materials shall be supplied by the contractor, unless stated that the municipality will free issue materials. The rates must include transportation of materials to site, as well as all other overhead and P&G costs. The rates should also make provision for all OHS act requirements and other contractual requirements. The rates should also include for all labour and machinery and vehicles needed to complete the work. All material shall comply to the George Municipality's material specification. **Where the Municipality free issue the material the contractor shall insert the Rand value of the handling fee in the material rate column. Should no value be inserted no handling fee shall be paid. (Handling fee shall include all overhead cost to use the materials on the project covering the risk of handling from collection to installation.)**

	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,1	Excavation					
1,1,1	Removal and repair of Tarmac (Cut size as needed)	m ²	1			
1,1,2	Removal and repair of Concrete (Cut size as needed) Rate to include material	m ²	1			
1,1,3	Removal and repair of Brick Paving	m ²	1			
1,1,4	Removal of Soil - Hard Excavation	m ³	1			
1,1,5	Removal of Soil - Intermediate Excavation	m ³	1			
1,1,6	Removal of Soil - Soft Excavation	m ³	1			
1,1,7	Compacting of excavation	m ³	1			
1,1,8	Backfilling with backfilling material	m ³	1			
1,1,9	Import bedding sand	m ³	1			
1,1,10	Supply and Install Danger Tape above Cables	m	1			
1,1,11	Installation of 110mm diameter Ducts	m	1			

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1,1,12	Installation of 160mm diameter Ducts	m	1			
1,1,13	Supply and Install Galvanized kicker pipes according to material specification – price to include strapping as specified					
1,1,13,1	76mm diameter and supplied in a 6m length	each	1			
1,1,13,2	35mm diameter and supplied in a 6m length	each	1			
1,1,13,3	25mm diameter and supplied in a 6m length	each	1			

NO	DESCRIPTION, please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.	UNIT	QTY	MATERIAL	ABOUR	TOTAL PRICE
1,2	LV Underground Cables					
	Installation of LV Cables, in trenches and through ducts -price on cut-lengths. Cables to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,2,1	16mm 2 core cable – SWAPVC Cu and 16mm 4 core cable – SWAPVC Cu	m	1			
1,2,2	25mm to 50mm 4 core cable – SWAPVC Cu	m	1			
1,2,3	70mm to 120mm 4 core cable – SWAPVC Cu	m	1			
1,2,4	150mm to 185mm 4 core cable – SWAPVC Cu	m	1			
1,2,5	240mm to 300mm 4 core cable – SWAPVC Cu	m	1			
1,2,6	25mm to 50mm 4 core cable – SWAPVC Al	m	1			
1,2,7	70mm to 120mm 4 core cable – SWAPVC Al	m	1			
1,2,8	150mm to 185mm 4 core cable – SWAPVC Al	m	1			
1,2,9	240mm to 300mm 4 core cable – SWAPVC Al	m	1			
1,3	Installation of Earth Conductors, in trenches and through ducts. Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,3,1	32mm Bare Copper Conductor - Earth Wire	m	1			
1,3,2	64mm Bare Copper Conductor - Earth Wire	m	1			
1,4	Termination of LV cables by suitably qualified personnel					
1,4,1	16mm 2 core cable – SWAPVC Cu and 16mm 4 core	each	1			

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	cable – SWAPVC Cu					
1,4,2	25mm to 50mm 4 core cable – SWAPVC Cu	each	1			
1,4,3	70mm to 120mm 4 core cable – SWAPVC Cu	each	1			
1,4,4	150mm to 185mm 4 core cable – SWAPVC Cu	each	1			
1,4,5	240mm to 300mm 4 core cable – SWAPVC Cu	each	1			
1,4,6	25mm to 50mm 4 core cable – SWAPVC Al	each	1			
1,4,7	70mm to 120mm 4 core cable – SWAPVC Al	each	1			
1,4,8	150mm to 185mm 4 core cable – SWAPVC Al	each	1			
1,4,9	240mm to 300mm 4 core cable – SWAPVC Al	each	1			

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	ABOUR	TOTAL PRICE
1,5,1	Jointing of LV cables - Cu Cables					
1,5,1,1	Install Duracast or similar approved joint – 10mm to 16mm	each	1			
1,5,1,2	Install Duracast or similar approved joint – 16mm to 35mm	each	1			
1,5,1,3	Install Duracast or similar approved joint – 35mm to 50mm	each	1			
1,5,1,4	Install Duracast or similar approved joint – 50mm to 95mm	each	1			
1,5,1,5	Install Duracast or similar approved joint – 95mm to 150mm	each	1			
1,5,1,6	Install Duracast or similar approved joint – 150mm to 300mm	each	1			
1,5,2	Jointing of LV cables - Al Cables					
1,5,2,1	Install Duracast or similar approved joint – 35mm to 50mm	each	1			
1,5,2,2	Install Duracast or similar approved joint – 50mm to 95mm	each	1			
1,5,2,3	Install Duracast or similar approved joint – 95mm to 150mm	each	1			
1,5,2,4	Install Duracast or similar approved joint – 150mm to 300mm	each	1			
1,6	Equipment: Distribution Kiosk					
	Installation of distribution kiosk complete with minimum Three phase Busbars					

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1,6,1	6 way - including base minimum 300A rated Three phase Busbars	each	1			
1,6,2	9 way - including base minimum 500A rated Three phase Busbars	each	1			
1,6,3	12 way - including base minimum 500A rated Three phase Busbars	each	1			
1,7	Installation of distribution budle box complete - Wired for 3 -phase with minimum 150A rated busbars					
1,7,1	SP1 Bundle Box	each	1			
1,7,2	AP1 Bundle Box	each	1			
1,7,3	AP2 Bundle Box	each	1			
NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	ABOUR	TOTAL PRICE
1,8	Install equipment in kiosk / distribution box including wiring:					
1,8,1	125 to 200A feeder breakers	each	1			
1,8,2	225A to 275A feeder breakers	each	1			
1,8,3	300A to 450A feeder breakers	each	1			
1,8,4	60A single phase circuit breakers	each	1			
1,8,5	80A single phase circuit breakers	each	1			
1,8,6	60A three phase circuit breakers	each	1			
1,8,7	80A three phase circuit breakers	each	1			
1,8,8	100A three phase circuit breakers	each	1			
1,8,9	Streetlight control (20A/5A CB, 60A contactor & photo cel)	sum	1			
1,8,10	Street light Metering units - metering units supplied by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)	each	1			
1,9	Overhead Lines (as per the specifications of the individual poles and support below)					
1,9,1	All-inclusive cost for 16mm to 64mm Cu conductor LV Overhead Line. Excluding supporting structures to be claimed below. Total conductor length for this section will be 500m x 5conductors x10% (sag and other factors) Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)	m	1			

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1,9,2	All-inclusive cost for 35mm to 50mm ABC LV Overhead Line. Excluding supporting structures to be claimed below. Total conductor length for this section will be 1000m ABC x10% (sag and other factors) Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)	m	1			
1,9,3	All-inclusive cost for 70mm to 95mm ABC LV Overhead Line. Excluding supporting structures to be claimed below. Total conductor length for this section will be 1000m ABC x10% (sag and other factors) Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)	m	1			

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	ABOUR	TOTAL PRICE
1,10	Individual Poles and support					
1,10,1	9m Intermediate Pole with 5 x Insulators: Bare	Each	1			
1,10,2	9m Strain/terminal Pole with 5 x Insulators: Bare Conductor - end pole	Each	1			
1,10,3	9m Strain Pole with 10 x Insulators: Bare Conductor	Each	1			
1,10,4	9m Strain/terminal Pole with strain clamps: ABC Conductor	Each	1			
1,10,5	9m Intermediate Pole with suspension clamps: ABC Conductor	Each	1			
1,10,6	Stay Complete	Each	1			
1,10,7	Strut Complete	Each	1			
1,10,8	Flying Stay	Each	1			
1,10,9	Installation of wooden distribution poles					
1,10,9,1	9m	Each	1			
1,10,9,2	11m	Each	1			
1,11	Installation of Consumer Supply Cable					
1,11,1	10mm2 Airdac	m	1			
1,11,2	16mm2 Airdac	m	1			
1,12	Installation of prepaid meter base and Ready board in the house					
1,12,1	Install Ready Board	each	1			
1,12,2	Install conventional meter Single phase (20 - 100 A)	each	1			
1,12,3	Install conventional meter Three phase (20 - 100 A)	each	1			
1,12,4	Install Prepayment meter (standalone)	each	1			

1,12,5	Install Prepayment meter (PLC split) Single phase	each	1			
1,12,6	Install Prepayment meter (PLC split) Three phase	each	1			
1,13	Termination of LV cables by suitably qualified personnel at Pole box or residential unit					
1,13,1	10mm2 Airdac	each	1			
1,13,2	16mm2 Airdac	each	1			
1,14	Install bare conductor onto a newly built line or existing poles where the conductor needs to be replaced					
1,14,1	16mm Cu	m	1			
1,14,2	32mm Cu	m	1			
1,14,3	64mm Cu	m	1			
	TOTAL PRICE FOR CATEGORY EP2 LV SECTION A, Excl. VAT					

CATEGORY EP2: STREETLIGHT WORKS | SECTION A

All materials shall be supplied by the contractor, unless stated that the municipality will free issue materials. The rates must include transportation of materials to site, as well as all other overhead and P&G costs. The rates should also make provision for all OHS act requirements and other contractual requirements. The rates should also include for all labour and machinery and vehicles needed to complete the work. All material shall comply to the George Municipality's material specification. **Where the Municipality free issue the material the contractor shall insert the Rand value of the handling fee in the material rate column. Should no value be inserted no handling fee shall be paid. (Handling fee shall include all overhead cost to use the materials on the project covering the risk of handling from collection to installation.)**

	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,1	Excavation					
1,1,1	Removal of Tarmac (Cut size as needed)	m ³	1			
1,1,2	Removal of Concrete (Cut size as needed)	m ³	1			
1,1,3	Removal of Brick Paving	m ²	1			
1,1,4	Removal of Soil - Hard Excavation	m ³	1			
1,1,5	Removal of Soil - Intermediate Excavation	m ³	1			

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1,1,6	Removal of Soil - Soft Excavation	m ³	1			
1,1,7	Compacting of excavation	m ³	1			
1,1,8	Backfilling with backfilling material	m ³	1			
1,1,9	Import bedding sand	m ³	1			
1,1,10	Supply and Install Danger Tape above Cables	m	1			
1,1,11	Installation of 110mm diameter Ducts	m	1			
1,1,12	Installation of 160mm diameter Ducts	m	1			
1,1,13	Supply and Install Galvanized kicker pipes according to material specification					
1,1,13,1	76mm diameter and supplied in a 6m length	each	1			
1,1,13,2	35mm diameter and supplied in a 6m length	each	1			
1,1,13,3	25mm diameter and supplied in a 6m length	each	1			
NO	DESCRIPTION, please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.	UNIT	QTY	MATERIAL	ABOUR	TOTAL PRICE
1,2	LV Streetlight Cables					
	Installation of LV Cables, in trenches and through ducts. Cables to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,2,1	10mm 2 core / 4 core cable – SWAPVC Cu	m	1			
1,2,2	16mm 2 core / 4 core cable – SWAPVC Cu	m	1			
1,3	Installation of Earth Conductors, in trenches and through ducts. Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,3,1	16mm Bare Copper Conductor - Earth Wire	m	1			
1,4	Termination of LV cables by suitably qualified personnel					
1,4,1	10mm 2 core / 4 core cable – SWAPVC Cu	each	20			
1,4,2	16mm 2 core / 4 core cable – SWAPVC Cu	each	20			
1,5	Jointing of Cu cables, irrespective type and size					
1,5,1	Supply Duracast or similar approved joint – 10mm to 16mm	each	10			

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1,6	Installation of Streetlight Poles and outreach arms incl Wiring of Streetlight and pole (2.5mm red and black) Poles supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,6,1	9m Streetlight Pole	each	85			
1,6,2	11m Streetlight Pole	each	40			
1,6,3	7.2m Streetlight Pole	each	20			
1,6,4	9m wooden distribution Pole	each	20			
1,6,5	11m wooden distribution Pole	each	20			
1,6,6	Single Outreach Arm, on new or existing pole	each	85			
1,6,7	Double Outreach Arm, on new or existing pole	each	85			

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	ABOUR	TOTAL PRICE
1,7	Installation of Streetlights including wiring and connection to the main LV feeder. Streetlight fittings supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,7,1	Streetlight Fitting: LED Less than 45W- minimum 4 000 Lumen - Colour Temp = 4000K	each	1			
1,7,2	Streetlight Fitting: LED Less than 180W - minimum 16 500 Lumen - Colour Temp = 4000K	each	1			
1,7,3	Flood lights: LED - Less than 480W - minimum 48 000 Lumen - Colour Temp = 4000K	each	1			
1,7,4	Flood lights: LED - Less than 210W - minimum 17 500 Lumen - Colour Temp = 4000K	each	1			
1,7,5	LED Post-Top - Less than 45W - minimum 3000 Lumen - Colour Temp = 4000K	each	1			
1,8	Assembling and installation of Streetlight Control in distribution kiosk or pole box including all wiring required					
1,8,1	3 phase 60A contactor as per material specification	each	1			
1,8,2	1 x Photocell as per material specification	each	1			
1,8,3	Wiring and accessories required	each	1			
1,8,4	single phase metering unit - meter supplied by the Municipality	each	1			
1,8,5	60A three phase circuit breakers as per material specification	each	1			
1,8,6	60A single phase circuit breakers as per material specification	each	1			
1,8,7	20A single phase circuit breakers as per material specification	each	1			
1,9	Equipment: Distribution Kiosk or pole box					
	Installation of distribution kiosk complete with minimum rated 300A Busbars					
1,9,1	4 Way - including base	each	1			
	Installation of distribution pole box complete with minimum rated 150A Busbars					
1,9,2	AP1 Bundle Box	each	1			

Pricing Instructions

Part C2.1

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,10	LV Overhead Lines (ABC & Supports) Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,10,1	All-inclusive cost for 25mm ABC LV Overhead Line. Supports such as struts, stays to be claimed below. Allow for sag and other factors in bid price	m	1			
1,10,2	9m Strain Pole with strain clamps: 25/2 ABC Conductor - 2 x strain insulator clamps	Each	1			
1,10,3	9m Intermediate Pole with suspension clamps: 25/2 ABC Conductor	Each	1			
1,10,4	Stay Complete	Each	1			
1,10,5	Strut Complete	Each	1			
1,11	Remove Luminaire & Pole					
1,11,1	Remove Streetlight from Pole (up to height of 11m) and transport to Munic Depot	each	1			
1,11,2	Removal of steel, concrete, fibreglass or wooden poles by excavation and reinstatement of surface area and delivery to the Municipal depot	each	1			
1,11,3	Disconnect the LV streetlight cable (assume 10/2 Cu for bid purposes) and join to ensure continuity of supply	each	1			
1,11,4	Disconnect the LV streetlight cable (assume 10/2 Cu for bid purposes) and make safe if this is end of feeder.	each	1			
1,12	Replacement of Street lights. Streetlight fittings supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,12,1	Streetlight Fitting: LED Less than 45W	each	1			
1,12,2	Streetlight Fitting: LED Less than 180W	each	1			
1,12,3	Flood lights: LED - Less than 480W	each	1			
1,12,4	Flood lights: LED - Less than 210W	each	1			

Pricing Instructions

Part C2.1

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	OTAL PRICE
1,12,5	LED Post-Top - Less than 45W	each	1			
1,13	Locating of faults via testing and inspection	R/hr	1			
	TOTAL PRICE FOR CATEGORY EP2 STREET LIGHTS SECTION A, Excl. VAT					

CATEGORY EP2 SECTION B: HOURLY LABOUR AND SPECIALST SECTION

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,1	Switching					
1,1,1	Arrange for switching	sum	1			
1,1,2	Ensure that installation is safe for work	sum	1			
1,1,3	Earth as necessary	sum	1			
1,1,4	Notice to affected customers- per shut-down for say 30 customers per notice	sum	1			
1,2	Normal Working Hours					
1,2,1	Skilled Labor (Supervisor)	h	1			
1,2,2	Skilled Labor (Electrician)	h	1			
1,2,3	Semi-Skilled (Apprentice Electrician)	h	1			
1,2,4	Un-skilled (Laborer)	h	1			
1,3	After Working Hours					
1,3,1	Skilled Labor (Supervisor)	h	1			
1,3,2	Skilled Labor (Electrician)	h	1			
1,3,3	Semi-Skilled (Apprentice Electrician)	h	1			
1,3,4	Un-skilled (Laborer)	h	1			
1,4	Sundays and Public Holidays					
1,4,1	Skilled Labor (Supervisor)	h	1			
1,4,2	Skilled Labor (Electrician)	h	1			
1,4,3	Semi-Skilled (Apprentice Electrician)	h	1			
1,4,4	Un-skilled (Laborer)	h	1			
1,5	Transport					
1,5,1	LDV	km	1			
1,5,2	10 Ton Truck	h	1			
1,5,3	Cherry Picker	h	1			
1,5,4	Compactor	h	1			

Pricing Instructions
Part C2.1

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,5,5	Excavator	h	1			
1,5,6	Traffic Control per day	R/day	1			
1,6	Testing or settings Required					
1,6,1	Voltage test	each	1			
1,6,2	Earthing Test	each	1			
1,6,3	As built drawing of the works completed	h	1			
1,6,4	Wayleave applications	h	1			
1,6,5	11kV MV Cable Pressure test	each	1			
1,6,6	Compaction test	each	1			
1,6,7	1000V Megger test	each	1			
1,7	Specialist sub-contractor					
1,7,1	Protection Settings Engineer: Specialist team as specified	R/hr	1			
1,7,2	Land Surveyor: Specialist	R/hr	1			
1,7,3	MV Cable Fault Location (Cable lengths up to 5000m)	R/day	1			
1,7,4	LV Cable Fault Location (Cable lengths up to 1000m)	R/day	1			
1,8	Material	Unit		Estimated Material Value		
1,8,1	Material Not in BOQ - 3 quotations for material to be obtained - indicate percentage markup on material to be supplied - maximum 15%. Do not include the estimated material value in the total for Section B	%		Not to be completed		
1.9	Preliminary and General costs. Only for Uniondale and Haarlem	R/day				
1.10	Preliminary and General costs. Only for George, Wilderness, Pacaltsdorp, Herold's Bay,	R/day				
	TOTAL PRICE FOR CATEGORY EP2 SECTION B, Excl. VAT					

TOTAL PRICE FOR CATEGORY EP2 MV SECTION A, EXCL. VAT	
TOTAL PRICE FOR CATEGORY EP2 LV SECTION A, EXCL. VAT	
TOTAL PRICE FOR CATEGORY EP2 S LIGHTS SECTION A, EXCL. VAT	
TOTAL PRICE FOR CATEGORY EP2 S LIGHTS SECTION B, EXCL. VAT	
TOTAL TAXES EXCLEDED	
TAXES 1 – 15% VAT APPLICABLE ON TOTAL	
TAXES 2 – OTHER TAXES APPLICABLE ON TOTAL – IF APPLICABLE (BIDDER TO DEFINE)	
ALL APPLICABLE TAXES (TAXES 1 + TAXES 2)	
TOTAL FOR CATEGORY EP2, INCLUDING ALL APPLICABLE TAXES	

CATEGORY EP3 MV WORKS | SECTION A

All materials shall be supplied by the contractor, unless stated that the municipality will free issue materials. The rates must include transportation of materials to site, as well as all other overhead and P&G costs. The rates should also make provision for all OHS act requirements and other contractual requirements. The rates should also include for all labour and machinery and vehicles needed to complete the work. All material shall comply to the George Municipality's material specification. **Where the Municipality free issue the material the contractor shall insert the Rand value of the handling fee in the material rate column. Should no value be inserted no handling fee shall be paid. (Handling fee shall include all overhead cost to use the materials on the project covering the risk of handling from collection to installation.)**

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,1	Excavation					
1,1,1	Removal and repair of Tarmac (Cut size as needed)	m ²	1			
1,1,2	Removal and repair of Concrete (Cut size as needed) Rate to include material	m ³	1			
1,1,3	Removal and repair of Brick Paving	m ²	1			
1,1,4	Removal of Soil - Hard Excavation	m ³	1			
1,1,5	Removal of Soil - Intermediate Excavation	m ³	1			
1,1,6	Removal of Soil - Soft Excavation	m ³	1			
1,1,7	Compacting of excavation	m ³	1			
1,1,8	Backfilling with backfilling material	m ³	1			
1,1,9	Import bedding sand	m ³	1			
1,1,10	Supply and Install Danger Tape above Cables	m	1			
1,1,11	Installation of 110mm diameter Ducts	m	1			
1,1,12	Installation of 160mm diameter Ducts	m	1			
1,1,13	Supply and Install Galvanized kicker pipes according to material specification to be 76mm diameter and supplied in a 6m length- price to include strapping as specified	m	1			
1,2	MV Underground Cables Cu and Al					
	Installation of MV Cables, in trenches and through ducts. Cables to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,2,1	70/3C to 95/3C	m	1			
1,2,2	150/3C to 185/3C	m	1			
1,2,3	240/3C to 300/3C	m	1			

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,3	Installation of Earth Conductors, in trenches and through ducts. Conductors to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,31	70mm Bare Copper Conductor - Earth Wire	m	1			
1,4	JOINTS					
1,4,1	Jointing of 11kV cables by suitably qualified personnel - Cable Joints 11kV (heat shrink) - PILC Cu cables. Joints to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,4,1,1	35mm ² - 70mm ²	each	1			
1,4,1,2	50mm ² - 95mm ²	each	1			
1,4,1,3	95mm ² - 185mm ²	each	1			
1,4,1,4	185mm ² - 300mm ²	each	1			
1,4,2	Jointing of 11kV cables by suitably qualified personnel - Cable Joints 11kV (heat shrink) - PILC Al Cables. Joints to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,4,2,1	35mm ² - 70mm ²	each	1			
1,4,2,2	50mm ² - 95mm ²	each	1			
1,4,2,3	95mm ² - 185mm ²	each	1			
1,4,2,4	185mm ² - 300mm ²	each	1			
1,4,5	Jointing of 11kV cables by suitably qualified personnel - Cable Joints 11kV (heat shrink) - Transition Joints. Joints to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,4,5,1	35mm ² - 70mm ²	each	1			
1,4,5,2	50mm ² - 95mm ²	each	1			
1,4,5,3	95mm ² - 185mm ²	each	1			
1,4,5,4	185mm ² - 300mm ²	each	1			

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,5	TERMINATIONS					
1,5,1	Termination of 11kV cables by suitably qualified personnel - Indoor 11kV Cable HeatShrink Termination - PILC Cu Cables. Terminations to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,5,1,1	25mm ² - 70mm ²	each	1			
1,5,1,2	50mm ² - 120mm ²	each	1			
1,5,1,3	95mm ² - 185mm ²	each	1			
1,5,1,4	185mm ² - 300mm ²	each	1			
1,5,2	Termination of 11kV cables by suitably qualified personnel - Indoor 11kV Cable Heat Shrink Termination - PILC Al Cables. Terminations to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,5,2,1	35mm ² - 70mm ²	each	1			
1,5,2,2	50mm ² - 95mm ²	each	1			
1,5,2,3	95mm ² - 185mm ²	each	1			
1,5,2,4	185mm ² - 300mm ²	each	1			
1,5,3	Termination of 11kV cables by suitably qualified personnel - outdoor 11kV Cable Heat Shrink Termination - PILC Cu Cables. Terminations to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,5,3,1	25mm ² - 70mm ²	each	1			
1,5,3,2	50mm ² - 120mm ²	each	1			
1,5,3,3	95mm ² - 185mm ²	each	1			
1,5,3,4	185mm ² - 300mm ²	each	1			
1,5,4	Termination of 11kV cables by suitably qualified personnel - outdoor 11kV Cable Heat Shrink Termination-PILC Al Cables. Terminations to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,5,4,1	25mm ² - 70mm ²	each	1			
1,5,4,2	50mm ² - 120mm ²	each	1			
1,5,5,3	95mm ² - 185mm ²	each	1			
1,5,5,4	185mm ² - 300mm ²	each	1			

Pricing Instructions

Part C2.1

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,6	Equipment: Plinths					
1,6,1	Miniature Substation Plinth - Supply and Install (All plinths according to drawings, material to be supplied by contractor and included in rate)	each	1			
1,6,2	RMU Plinth - Supply and Install (All plinths according to drawings, material to be supplied by contractor and included in rate)	each	1			
1,6,3	Transformer Plinth - Supply and Install (500kVA Ground Mounted Transformer, material to be supplied by contractor and included in rate)	each	1			
1,7	Equipment: Transformers. The secondary voltage of all transformers to be 420 V. Transformers supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,7,1	Installation of TRF - 200kVA to 500kVA 11/0.42kV Ground Mounted	each	1			
1,7,1	Installation of TRF - 630kVA to 1000kVA 11/0.42kV Ground Mounted	each	1			
1,8	Installation of TRF - Pole Mounted incl. 1 or 2 pole Cradle as below: Transformers supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,8,1	- 16kVA 11/0.42kV Pole Mounted incl. Single Pole Transformer installation - include Cradle and mounting requirements. Poles to be claimed elsewhere	each	1			
1,8,2	- 25kVA 11/0.42kV Pole Mounted incl. Single Pole Transformer installation - include Cradle and mounting requirements. Poles to be claimed elsewhere	each	1			
1,8,3	- 50kVA 11/0.42kV Pole Mounted incl. Single Pole Transformer installation - include Cradle and mounting requirements. Poles to be claimed elsewhere	each	1			
1,8,4	- 100kVA 11/0.42kV Pole Mounted incl. Double Pole Transformer installation- include Cradle and mounting requirements. Poles to be claimed elsewhere	each	1			
1,8,5	- 200kVA 11/0.42kV Pole Mounted incl. Double Pole Transformer installation- include Cradle and mounting requirements. Poles to be claimed elsewhere	each	1			

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,9	Equipment: Miniature Substations. The secondary voltage of all transformers to be 420 V. Mini Substations supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,9,1	Installation of miniature substation - with 3-way SF6 RMU with 2 x isolators for ring feed and local transformer Breaker with protection relay	each	1			
1,10	Equipment: Ring Main Units / Switchgear. RMU's supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,10,1	Installation of RMU (2 x Isolator, 1 x 630A Feeder Breaker) for outdoor use in coastal spec weatherproof canopy	each	1			
1,11	MV Overhead Lines (A-frame / staggered vertical / & supports)					
1,11,1	All-inclusive construction for Fir, Hazel or Pine conductor, vertical staggered Overhead Line - i.e. Conductor length will be 3 x 3000m = 9000m +10% for other factors, such as sag etc. for tender purposes. Stays and supporting structures can be claimed below. Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)	m	1			
1,11,2	All-inclusive construction for Oak, Mulberry or Sycamore conductor, vertical staggered Overhead Line - i.e. Conductor length will be 3 x 3000m = 9000m +10% for other factors, such as sag etc. for tender purposes. Stays and supporting structures can be claimed below. Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)	m	1			
1,11,3	End shackle pole with three strain insulators (Long Rod Silicon)	each	1			
1,11,4	Strain pole with six strain insulators	each	1			
1,11,5	Intermediate pole with three intermediate insulators (Silicon Line Post)	each	1			
1,11,6	Stay Complete	each	1			
1,11,7	Flying Stay Complete	each	1			
1,11,8	Strut Complete	each	1			

Pricing Instructions

Part C2.1

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,11,9	Three surge arresters complete with mounting and earthing.	each	1			
1,11,10	Three drop out fuse-links complete with mounting and earthing.	each	1			
1,11,11	Installation of Load-break switch including all mounting requirements. Load break to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)	each	1			
1,11,12	Install 65A fuse Links in Drop-out fuse cartridges (set of 3)	sets	1			
1,11,13	Install wooden transmission poles		1			
1,11,13,1	9m	each	1			
1,11,13,2	11m	each	1			
1,11,14	Install bare conductor onto a newly built line or existing poles where the conductor needs to be replaced. Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,11,14,1	Fir, Hazel or Pine	m	1			
1,11,14,2	Oak, Mulberry or Sycamore	m	1			
	TOTAL PRICE FOR CATEGORY EP3 MV SECTION A, Excl. VAT					

CATEGORY EP3 LV WORKS | SECTION A

All materials shall be supplied by the contractor, unless stated that the municipality will free issue materials. The rates must include transportation of materials to site, as well as all other overhead and P&G costs. The rates should also make provision for all OHS act requirements and other contractual requirements. The rates should also include for all labour and machinery and vehicles needed to complete the work. All material shall comply to the George Municipality's material specification. **Where the Municipality free issue the material the contractor shall insert the Rand value of the handling fee in the material rate column. Should no value be inserted no handling fee shall be paid. (Handling fee shall include all overhead cost to use the materials on the project covering the risk of handling from collection to installation.)**

	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,1	Excavation					
1,1,1	Removal and repair of Tarmac (Cut size as needed)	m ²	1			
1,1,2	Removal and repair of Concrete (Cut size as needed) Rate to include material	m ²	1			
1,1,3	Removal and repair of Brick Paving	m ²	1			
1,1,4	Removal of Soil - Hard Excavation	m ³	1			
1,1,5	Removal of Soil - Intermediate Excavation	m ³	1			
1,1,6	Removal of Soil - Soft Excavation	m ³	1			
1,1,7	Compacting of excavation	m ³	1			
1,1,8	Backfilling with backfilling material	m ³	1			
1,1,9	Import bedding sand	m ³	1			
1,1,10	Supply and Install Danger Tape above Cables	m	1			
1,1,11	Installation of 110mm diameter Ducts	m	1			
1,1,12	Installation of 160mm diameter Ducts	m	1			
1,1,13	Supply and Install Galvanized kicker pipes according to material specification – price to include strapping as specified					
1,1,13,1	76mm diameter and supplied in a 6m length	each	1			
1,1,13,2	35mm diameter and supplied in a 6m length	each	1			
1,1,13,3	25mm diameter and supplied in a 6m length	each	1			

Pricing Instructions

Part C2.1

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	ABOUR	TOTAL PRICE
1,2	LV Underground Cables					
	Installation of LV Cables, in trenches and through ducts -price on cut-lengths. Cables to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,2,1	16mm 2 core cable – SWAPVC Cu and 16mm 4 core cable – SWAPVC Cu	m	1			
1,2,2	25mm to 50mm 4 core cable – SWAPVC Cu	m	1			
1,2,3	70mm to120mm 4 core cable – SWAPVC Cu	m	1			
1,2,4	150mm to 185mm 4 core cable – SWAPVC Cu	m	1			
1,2,5	240mm to 300mm 4 core cable – SWAPVC Cu	m	1			
1,2,6	25mm to 50mm 4 core cable – SWAPVC AI	m	1			
1,2,7	70mm to120mm 4 core cable – SWAPVC AI	m	1			
1,2,8	150mm to 185mm 4 core cable – SWAPVC AI	m	1			
1,2,9	240mm to 300mm 4 core cable – SWAPVC AI	m	1			
1,3	Installation of Earth Conductors, in trenches and through ducts. Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,3,1	32mm Bare Copper Conductor - Earth Wire	m	1			
1,3,2	64mm Bare Copper Conductor - Earth Wire	m	1			
1,4	Termination of LV cables by suitably qualified personnel					
1,4,1	16mm 2 core cable – SWAPVC Cu and 16mm 4 core cable – SWAPVC Cu	each	1			
1,4,2	25mm to 50mm 4 core cable – SWAPVC Cu	each	1			
1,4,3	70mm to120mm 4 core cable – SWAPVC Cu	each	1			
1,4,4	150mm to 185mm 4 core cable – SWAPVC Cu	each	1			
1,4,5	240mm to 300mm 4 core cable – SWAPVC Cu	each	1			
1,4,6	25mm to 50mm 4 core cable – SWAPVC AI	each	1			
1,4,7	70mm to120mm 4 core cable – SWAPVC AI	each	1			
1,4,8	150mm to 185mm 4 core cable – SWAPVC AI	each	1			
1,4,9	240mm to 300mm 4 core cable – SWAPVC AI	each	1			

Pricing Instructions

Part C2.1

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	ABOUR	TOTAL PRICE
1,5,1	Jointing of LV cables - Cu Cables					
1,5,1,1	Install Duracast or similar approved joint – 10mm to 16mm	each	1			
1,5,1,2	Install Duracast or similar approved joint – 16mm to 35mm	each	1			
1,5,1,3	Install Duracast or similar approved joint – 35mm to 50mm	each	1			
1,5,1,4	Install Duracast or similar approved joint – 50mm to 95mm	each	1			
1,5,1,5	Install Duracast or similar approved joint – 95mm to 150mm	each	1			
1,5,1,6	Install Duracast or similar approved joint – 150mm to 300mm	each	1			
1,5,2	Jointing of LV cables - Al Cables					
1,5,2,1	Install Duracast or similar approved joint – 35mm to 50mm	each	1			
1,5,2,2	Install Duracast or similar approved joint – 50mm to 95mm	each	1			
1,5,2,3	Install Duracast or similar approved joint – 95mm to 150mm	each	1			
1,5,2,4	Install Duracast or similar approved joint – 150mm to 300mm	each	1			
1,6	Equipment: Distribution Kiosk					
	Installation of distribution kiosk complete with minimum Three phase Busbars					
1,6,1	6 way - including base minimum 300A rated Three phase Busbars	each	1			
1,6,2	9 way - including base minimum 500A rated Three phase Busbars	each	1			
1,6,3	12 way - including base minimum 500A rated Three phase Busbars	each	1			
1,7	Installation of distribution budle box complete - Wired for 3 -phase with minimum 150A rated busbars					
1,7,1	SP1 Bundle Box	each	1			
1,7,2	AP1 Bundle Box	each	1			
1,7,3	AP2 Bundle Box	each	1			

Pricing Instructions

Part C2.1

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	ABOUR	TOTAL PRICE
1,8	Install equipment in kiosk / distribution box including wiring:					
1,8,1	125 to 200A feeder breakers	each	1			
1,8,2	225A to 275A feeder breakers	each	1			
1,8,3	300A to 450A feeder breakers	each	1			
1,8,4	60A single phase circuit breakers	each	1			
1,8,5	80A single phase circuit breakers	each	1			
1,8,6	60A three phase circuit breakers	each	1			
1,8,7	80A three phase circuit breakers	each	1			
1,8,8	100A three phase circuit breakers	each	1			
1,8,9	Streetlight control (20A/5A CB, 60A contactor & photo cel)	sum	1			
1,8,10	Street light Metering units - metering units supplied by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)	each	1			
1,9	Overhead Lines (as per the specifications of the individual poles and support below)					
1,9,1	All-inclusive cost for 16mm to 64mm Cu conductor LV Overhead Line. Excluding supporting structures to be claimed below. Total conductor length for this section will be 500m x 5conductors x10% (sag and other factors) Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)	m	1			
1,9,2	All-inclusive cost for 35mm to 50mm ABC LV Overhead Line. Excluding supporting structures to be claimed below. Total conductor length for this section will be 1000m ABC x10% (sag and other factors) Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)	m	1			
1,9,3	All-inclusive cost for 70mm to 95mm ABC LV Overhead Line. Excluding supporting structures to be claimed below. Total conductor length for this section will be 1000m ABC x10% (sag and other factors) Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)	m	1			

Pricing Instructions

Part C2.1

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	ABOUR	TOTAL PRICE
1,10	Individual Poles and support					
1,10,1	9m Intermediate Pole with 5 x Insulators: Bare	Each	1			
1,10,2	9m Strain/terminal Pole with 5 x Insulators: Bare Conductor - end pole	Each	1			
1,10,3	9m Strain Pole with 10 x Insulators: Bare Conductor	Each	1			
1,10,4	9m Strain/terminal Pole with strain clamps: ABC Conductor	Each	1			
1,10,5	9m Intermediate Pole with suspension clamps: ABC Conductor	Each	1			
1,10,6	Stay Complete	Each	1			
1,10,7	Strut Complete	Each	1			
1,10,8	Flying Stay	Each	1			
1,10,9	Installation of wooden distribution poles					
1,10,9,1	9m	Each	1			
1,10,9,2	11m	Each	1			
1,11	Installation of Consumer Supply Cable					
1,11,1	10mm2 Airdac	m	1			
1,11,2	16mm2 Airdac	m	1			
1,12	Installation of prepaid meter base and Ready board in the house					
1,12,1	Install Ready Board	each	1			
1,12,2	Install conventional meter Single phase (20 - 100 A)	each	1			
1,12,3	Install conventional meter Three phase (20 - 100 A)	each	1			
1,12,4	Install Prepayment meter (standalone)	each	1			
1,12,5	Install Prepayment meter (PLC split) Single phase	each	1			
1,12,6	Install Prepayment meter (PLC split) Three phase	each	1			
1,13	Termination of LV cables by suitably qualified personnel at Pole box or residential unit					
1,13,1	10mm2 Airdac	each	1			
1,13,2	16mm2 Airdac	each	1			
1,14	Install bare conductor onto a newly built line or existing poles where the conductor needs to be replaced					
1,14,1	16mm Cu	m	1			
1,14,2	32mm Cu	m	1			
1,14,3	64mm Cu	m	1			
	TOTAL PRICE FOR CATEGORY EP2 LV SECTION A, Excl. VAT					

CATEGORY EP3: STREETLIGHT WORKS | SECTION A

All materials shall be supplied by the contractor, unless stated that the municipality will free issue materials. The rates must include transportation of materials to site, as well as all other overhead and P&G costs. The rates should also make provision for all OHS act requirements and other contractual requirements. The rates should also include for all labour and machinery and vehicles needed to complete the work. All material shall comply to the George Municipality's material specification. **Where the Municipality free issue the material the contractor shall insert the Rand value of the handling fee in the material rate column. Should no value be inserted no handling fee shall be paid. (Handling fee shall include all overhead cost to use the materials on the project covering the risk of handling from collection to installation.)**

	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,1	Excavation					
1,1,1	Removal of Tarmac (Cut size as needed)	m ³	1			
1,1,2	Removal of Concrete (Cut size as needed)	m ³	1			
1,1,3	Removal of Brick Paving	m ²	1			
1,1,4	Removal of Soil - Hard Excavation	m ³	1			
1,1,5	Removal of Soil - Intermediate Excavation	m ³	1			
1,1,6	Removal of Soil - Soft Excavation	m ³	1			
1,1,7	Compacting of excavation	m ³	1			
1,1,8	Backfilling with backfilling material	m ³	1			
1,1,9	Import bedding sand	m ³	1			
1,1,10	Supply and Install Danger Tape above Cables	m	1			
1,1,11	Installation of 110mm diameter Ducts	m	1			
1,1,12	Installation of 160mm diameter Ducts	m	1			
1,1,13	Supply and Install Galvanized kicker pipes according to material specification					
1,1,13,1	76mm diameter and supplied in a 6m length	each	1			
1,1,13,2	35mm diameter and supplied in a 6m length	each	1			
1,1,13,3	25mm diameter and supplied in a 6m length	each	1			

Pricing Instructions

Part C2.1

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	ABOUR	TOTAL PRICE
1,2	LV Streetlight Cables					
	Installation of LV Cables, in trenches and through ducts. Cables to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,2,1	10mm 2 core / 4 core cable – SWAPVC Cu	m	1			
1,2,2	16mm 2 core / 4 core cable – SWAPVC Cu	m	1			
1,3	Installation of Earth Conductors, in trenches and through ducts. Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,3,1	16mm Bare Copper Conductor - Earth Wire	m	1			
1,4	Termination of LV cables by suitably qualified personnel					
1,4,1	10mm 2 core / 4 core cable – SWAPVC Cu	each	1			
1,4,2	16mm 2 core / 4 core cable – SWAPVC Cu	each	1			
1,5	Jointing of Cu cables, irrespective type and size					
1,5,1	Supply Duracast or similar approved joint – 10mm to 16mm	each	1			
1,6	Installation of Streetlight Poles and outreach arms incl Wiring of Streetlight and pole (2.5mm red and black) Poles supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,6,1	9m Streetlight Pole	each	1			
1,6,2	11m Streetlight Pole	each	1			
1,6,3	7.2m Streetlight Pole	each	1			
1,6,4	9m wooden distribution Pole	each	1			
1,6,5	11m wooden distribution Pole	each	1			
1,6,6	Single Outreach Arm, on new or existing pole	each	1			
1,6,7	Double Outreach Arm, on new or existing pole	each	1			

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	ABOUR	TOTAL PRICE
1,7	Installation of Streetlights including wiring and connection to the main LV feeder. Streetlight fittings supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,7,1	Streetlight Fitting: LED Less than 45W- minimum 4 000 Lumen - Colour Temp = 4000K	each	1			
1,7,2	Streetlight Fitting: LED Less than 180W - minimum 16 500 Lumen - Colour Temp = 4000K	each	1			
1,7,3	Flood lights: LED - Less than 480W - minimum 48 000 Lumen - Colour Temp = 4000K	each	1			
1,7,4	Flood lights: LED - Less than 210W - minimum 17 500 Lumen - Colour Temp = 4000K	each	1			
1,7,5	LED Post-Top - Less than 45W - minimum 3000 Lumen - Colour Temp = 4000K	each	1			
1,8	Assembling and installation of Streetlight Control in distribution kiosk or pole box including all wiring required					
1,8,1	3 phase 60A contactor as per material specification	each	1			
1,8,2	1 x Photocell as per material specification	each	1			
1,8,3	Wiring and accessories required	each	1			
1,8,4	single phase metering unit - meter supplied by the Municipality	each	1			
1,8,5	60A three phase circuit breakers as per material specification	each	1			
1,8,6	60A single phase circuit breakers as per material specification	each	1			
1,8,7	20A single phase circuit breakers as per material specification	each	1			
1,9	Equipment: Distribution Kiosk or pole box					
	Installation of distribution kiosk complete with minimum rated 300A Busbars					
1,9,1	4 Way - including base	each	1			
	Installation of distribution pole box complete with minimum rated 150A Busbars					
1,9,2	AP1 Bundle Box	each	1			

Pricing Instructions

Part C2.1

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,10	LV Overhead Lines (ABC & Supports) Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,10,1	All-inclusive cost for 25mm ABC LV Overhead Line. Supports such as struts, stays to be claimed below. Allow for sag and other factors in bid price	m	1			
1,10,2	9m Strain Pole with strain clamps: 25/2 ABC Conductor - 2 x strain insulator clamps	Each	1			
1,10,3	9m Intermediate Pole with suspension clamps: 25/2 ABC Conductor	Each	1			
1,10,4	Stay Complete	Each	1			
1,10,5	Strut Complete	Each	1			
1,11	Remove Luminaire & Pole					
1,11,1	Remove Streetlight from Pole (up to height of 11m) and transport to Munic Depot	each	1			
1,11,2	Removal of steel, concrete, fibreglass or wooden poles by excavation and reinstatement of surface area and delivery to the Municipal depot	each	1			
1,11,3	Disconnect the LV streetlight cable (assume 10/2 Cu for bid purposes) and join to ensure continuity of supply	each	1			
1,11,4	Disconnect the LV streetlight cable (assume 10/2 Cu for bid purposes) and make safe if this is end of feeder.	each	1			
1,12	Replacement of Street lights. Streetlight fittings supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,12,1	Streetlight Fitting: LED Less than 45W	each	1			
1,12,2	Streetlight Fitting: LED Less than 180W	each	1			
1,12,3	Flood lights: LED - Less than 480W	each	1			
1,12,4	Flood lights: LED - Less than 210W	each	1			

Pricing Instructions

Part C2.1

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	OTAL PRICE
1,12,5	LED Post-Top - Less than 45W	each	1			
1,13	Locating of faults via testing and inspection	R/hr	1			
	TOTAL PRICE FOR CATEGORY EP3 STREET LIGHTS SECTION A, Excl. VAT					

CATEGORY EP3 SECTION B: HOURLY LABOUR AND SPECIALST SECTION

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,1	Switching					
1,1,1	Arrange for switching	sum	1			
1,1,2	Ensure that installation is safe for work	sum	1			
1,1,3	Earth as necessary	sum	1			
1,1,4	Notice to affected customers- per shut-down for say 30 customers per notice	sum	1			
1,2	Normal Working Hours					
1,2,1	Skilled Labor (Supervisor)	h	1			
1,2,2	Skilled Labor (Electrician)	h	1			
1,2,3	Semi-Skilled (Apprentice Electrician)	h	1			
1,2,4	Un-skilled (Laborer)	h	1			
1,3	After Working Hours					
1,3,1	Skilled Labor (Supervisor)	h	1			
1,3,2	Skilled Labor (Electrician)	h	1			
1,3,3	Semi-Skilled (Apprentice Electrician)	h	1			
1,3,4	Un-skilled (Laborer)	h	1			
1,4	Sundays and Public Holidays					
1,4,1	Skilled Labor (Supervisor)	h	1			
1,4,2	Skilled Labor (Electrician)	h	1			
1,4,3	Semi-Skilled (Apprentice Electrician)	h	1			
1,4,4	Un-skilled (Laborer)	h	1			
1,5	Transport					
1,5,1	LDV	km	1			
1,5,2	10 Ton Truck	h	1			
1,5,3	Cherry Picker	h	1			
1,5,4	Compactor	h	1			

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,5,5	Excavator	h	1			
1,5,6	Traffic Control per day	R/day	1			
1,6	Testing or settings Required					
1,6,1	Voltage test	each	1			
1,6,2	Earthing Test	each	1			
1,6,3	As built drawing of the works completed	h	1			
1,6,4	Wayleave applications	h	1			
1,6,5	11kV MV Cable Pressure test	each	1			
1,6,6	Compaction test	each	1			
1,6,7	1000V Megger test	each	1			
1,7	Specialist sub-contractor					
1,7,1	Protection Settings Engineer: Specialist team as specified	R/hr	1			
1,7,2	Land Surveyor: Specialist	R/hr	1			
1,7,3	MV Cable Fault Location (Cable lengths up to 5000m)	R/day	1			
1,7,4	LV Cable Fault Location (Cable lengths up to 1000m)	R/day	1			
1,8	Material	Unit		Estimated Material Value		
1,8,1	Material Not in BOQ - 3 quotations for material to be obtained - indicate percentage markup on material to be supplied - maximum 15%. Do not include the estimated material value in the total for Section B	%		Not to be completed		
1.9	Preliminary and General costs. Only for Uniondale and Haarlem	R/day				
1.10	Preliminary and General costs. Only for George, Wilderness, Pacaltsdorp, Herold's Bay,	R/day				
	TOTAL PRICE FOR CATEGORY EP3 SECTION B, Excl. VAT					

TOTAL PRICE FOR CATEGORY EP3 MV SECTION A, Excl. VAT	
TOTAL PRICE FOR CATEGORY EP3 LV SECTION A, Excl. VAT	
TOTAL PRICE FOR CATEGORY EP3 S LIGHTS SECTION A, Excl. VAT	
TOTAL PRICE FOR CATEGORY EP3 S LIGHTS SECTION B, Excl. VAT	
TOTAL TAXES EXCLEDED	
TAXES 1 – 15% VAT APPLICABLE ON TOTAL	
TAXES 2 – OTHER TAXES APPLICABLE ON TOTAL – IF APPLICABLE (BIDDER TO DEFINE)	
ALL APPLICABLE TAXES (TAXES 1 + TAXES 2)	
TOTAL FOR CATEGORY EP3, INCLUDING ALL APPLICABLE TAXES	

CATEGORY EP4 MV WORKS | SECTION A

All materials shall be supplied by the contractor, unless stated that the municipality will free issue materials. The rates must include transportation of materials to site, as well as all other overhead and P&G costs. The rates should also make provision for all OHS act requirements and other contractual requirements. The rates should also include for all labour and machinery and vehicles needed to complete the work. All material shall comply to the George Municipality's material specification. **Where the Municipality free issue the material the contractor shall insert the Rand value of the handling fee in the material rate column. Should no value be inserted no handling fee shall be paid. (Handling fee shall include all overhead cost to use the materials on the project covering the risk of handling from collection to installation.)**

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,1	Excavation					
1,1,1	Removal and repair of Tarmac (Cut size as needed)	m ²	1			
1,1,2	Removal and repair of Concrete (Cut size as needed) Rate to include material	m ³	1			
1,1,3	Removal and repair of Brick Paving	m ²	1			
1,1,4	Removal of Soil - Hard Excavation	m ³	1			
1,1,5	Removal of Soil - Intermediate Excavation	m ³	1			
1,1,6	Removal of Soil - Soft Excavation	m ³	1			
1,1,7	Compacting of excavation	m ³	1			
1,1,8	Backfilling with backfilling material	m ³	1			
1,1,9	Import bedding sand	m ³	1			
1,1,10	Supply and Install Danger Tape above Cables	m	1			
1,1,11	Installation of 110mm diameter Ducts	m	1			
1,1,12	Installation of 160mm diameter Ducts	m	1			
1,1,13	Supply and Install Galvanized kicker pipes according to material specification to be 76mm diameter and supplied in a 6m length- price to include strapping as specified	m	1			
1,2	MV Underground Cables Cu and Al					
	Installation of MV Cables, in trenches and through ducts. Cables to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,2,1	70/3C to 95/3C	m	1			
1,2,2	150/3C to 185/3C	m	1			
1,2,3	240/3C to 300/3C	m	1			

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,3	Installation of Earth Conductors, in trenches and through ducts. Conductors to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,31	70mm Bare Copper Conductor - Earth Wire	m	1			
1,4	JOINTS					
1,4,1	Jointing of 11kV cables by suitably qualified personnel - Cable Joints 11kV (heat shrink) - PILC Cu cables. Joints to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,4,1,1	35mm ² - 70mm ²	each	1			
1,4,1,2	50mm ² - 95mm ²	each	1			
1,4,1,3	95mm ² - 185mm ²	each	1			
1,4,1,4	185mm ² - 300mm ²	each	1			
1,4,2	Jointing of 11kV cables by suitably qualified personnel - Cable Joints 11kV (heat shrink) - PILC Al Cables. Joints to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,4,2,1	35mm ² - 70mm ²	each	1			
1,4,2,2	50mm ² - 95mm ²	each	1			
1,4,2,3	95mm ² - 185mm ²	each	1			
1,4,2,4	185mm ² - 300mm ²	each	1			
1,4,5	Jointing of 11kV cables by suitably qualified personnel - Cable Joints 11kV (heat shrink) - Transition Joints. Joints to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,4,5,1	35mm ² - 70mm ²	each	1			
1,4,5,2	50mm ² - 95mm ²	each	1			
1,4,5,3	95mm ² - 185mm ²	each	1			
1,4,5,4	185mm ² - 300mm ²	each	1			

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,5	TERMINATIONS					
1,5,1	Termination of 11kV cables by suitably qualified personnel - Indoor 11kV Cable HeatShrink Termination - PILC Cu Cables. Terminations to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,5,1,1	25mm ² - 70mm ²	each	1			
1,5,1,2	50mm ² - 120mm ²	each	1			
1,5,1,3	95mm ² - 185mm ²	each	1			
1,5,1,4	185mm ² - 300mm ²	each	1			
1,5,2	Termination of 11kV cables by suitably qualified personnel - Indoor 11kV Cable Heat Shrink Termination - PILC Al Cables. Terminations to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,5,2,1	35mm ² - 70mm ²	each	1			
1,5,2,2	50mm ² - 95mm ²	each	1			
1,5,2,3	95mm ² - 185mm ²	each	1			
1,5,2,4	185mm ² - 300mm ²	each	1			
1,5,3	Termination of 11kV cables by suitably qualified personnel - outdoor 11kV Cable Heat Shrink Termination - PILC Cu Cables. Terminations to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,5,3,1	25mm ² - 70mm ²	each	1			
1,5,3,2	50mm ² - 120mm ²	each	1			
1,5,3,3	95mm ² - 185mm ²	each	1			
1,5,3,4	185mm ² - 300mm ²	each	1			
1,5,4	Termination of 11kV cables by suitably qualified personnel - outdoor 11kV Cable Heat Shrink Termination-PILC Al Cables. Terminations to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,5,4,1	25mm ² - 70mm ²	each	1			
1,5,4,2	50mm ² - 120mm ²	each	1			
1,5,5,3	95mm ² - 185mm ²	each	1			
1,5,5,4	185mm ² - 300mm ²	each	2			

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,6	Equipment: Plinths					
1,6,1	Miniature Substation Plinth - Supply and Install (All plinths according to drawings, material to be supplied by contractor and included in rate)	each	1			
1,6,2	RMU Plinth - Supply and Install (All plinths according to drawings, material to be supplied by contractor and included in rate)	each	1			
1,6,3	Transformer Plinth - Supply and Install (500kVA Ground Mounted Transformer, material to be supplied by contractor and included in rate)	each	1			
1,7	Equipment: Transformers. The secondary voltage of all transformers to be 420 V. Transformers supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,7,1	Installation of TRF - 200kVA to 500kVA 11/0.42kV Ground Mounted	each	1			
1,7,1	Installation of TRF - 630kVA to 1000kVA 11/0.42kV Ground Mounted	each	1			
1,8	Installation of TRF - Pole Mounted incl. 1 or 2 pole Cradle as below: Transformers supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,8,1	- 16kVA 11/0.42kV Pole Mounted incl. Single Pole Transformer installation - include Cradle and mounting requirements. Poles to be claimed elsewhere	each	1			
1,8,2	- 25kVA 11/0.42kV Pole Mounted incl. Single Pole Transformer installation - include Cradle and mounting requirements. Poles to be claimed elsewhere	each	1			
1,8,3	- 50kVA 11/0.42kV Pole Mounted incl. Single Pole Transformer installation - include Cradle and mounting requirements. Poles to be claimed elsewhere	each	1			
1,8,4	- 100kVA 11/0.42kV Pole Mounted incl. Double Pole Transformer installation- include Cradle and mounting requirements. Poles to be claimed elsewhere	each	1			
1,8,5	- 200kVA 11/0.42kV Pole Mounted incl. Double Pole Transformer installation- include Cradle and mounting requirements. Poles to be claimed elsewhere	each	1			

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,9	Equipment: Miniature Substations. The secondary voltage of all transformers to be 420 V. Mini Substations supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,9,1	Installation of miniature substation - with 3-way SF6 RMU with 2 x isolators for ring feed and local transformer Breaker with protection relay	each	1			
1,10	Equipment: Ring Main Units / Switchgear. RMU's supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,10,1	Installation of RMU (2 x Isolator, 1 x 630A Feeder Breaker) for outdoor use in coastal spec weatherproof canopy	each	1			
1,11	MV Overhead Lines (A-frame / staggered vertical / & supports)					
1,11,1	All-inclusive construction for Fir, Hazel or Pine conductor, vertical staggered Overhead Line - i.e. Conductor length will be 3 x 3000m = 9000m +10% for other factors, such as sag etc. for tender purposes. Stays and supporting structures can be claimed below. Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)	m	1			
1,11,2	All-inclusive construction for Oak, Mulberry or Sycamore conductor, vertical staggered Overhead Line - i.e. Conductor length will be 3 x 3000m = 9000m +10% for other factors, such as sag etc. for tender purposes. Stays and supporting structures can be claimed below. Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)	m	1			
1,11,3	End shackle pole with three strain insulators (Long Rod Silicon)	each	1			
1,11,4	Strain pole with six strain insulators	each	1			
1,11,5	Intermediate pole with three intermediate insulators (Silicon Line Post)	each	1			
1,11,6	Stay Complete	each	1			
1,11,7	Flying Stay Complete	each	1			
1,11,8	Strut Complete	each	1			

Pricing Instructions

Part C2.1

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,11,9	Three surge arresters complete with mounting and earthing.	each	1			
1,11,10	Three drop out fuse-links complete with mounting and earthing.	each	1			
1,11,11	Installation of Load-break switch including all mounting requirements. Load break to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)	each	1			
1,11,12	Install 65A fuse Links in Drop-out fuse cartridges (set of 3)	sets	1			
1,11,13	Install wooden transmission poles		1			
1,11,13,1	9m	each	1			
1,11,13,2	11m	each	1			
1,11,14	Install bare conductor onto a newly built line or existing poles where the conductor needs to be replaced. Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,11,14,1	Fir, Hazel or Pine	m	1			
1,11,14,2	Oak, Mulberry or Sycamore	m	1			
	TOTAL PRICE FOR CATEGORY EP4 MV SECTION A, Excl. VAT					

CATEGORY EP4 LV WORKS | SECTION A

All materials shall be supplied by the contractor, unless stated that the municipality will free issue materials. The rates must include transportation of materials to site, as well as all other overhead and P&G costs. The rates should also make provision for all OHS act requirements and other contractual requirements. The rates should also include for all labour and machinery and vehicles needed to complete the work. All material shall comply to the George Municipality's material specification. **Where the Municipality free issue the material the contractor shall insert the Rand value of the handling fee in the material rate column. Should no value be inserted no handling fee shall be paid. (Handling fee shall include all overhead cost to use the materials on the project covering the risk of handling from collection to installation.)**

	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,1	Excavation					
1,1,1	Removal and repair of Tarmac (Cut size as needed)	m ²	1			
1,1,2	Removal and repair of Concrete (Cut size as needed) Rate to include material	m ²	1			
1,1,3	Removal and repair of Brick Paving	m ²	1			
1,1,4	Removal of Soil - Hard Excavation	m ³	1			
1,1,5	Removal of Soil - Intermediate Excavation	m ³	1			
1,1,6	Removal of Soil - Soft Excavation	m ³	1			
1,1,7	Compacting of excavation	m ³	1			
1,1,8	Backfilling with backfilling material	m ³	1			
1,1,9	Import bedding sand	m ³	1			
1,1,10	Supply and Install Danger Tape above Cables	m	1			
1,1,11	Installation of 110mm diameter Ducts	m	1			
1,1,12	Installation of 160mm diameter Ducts	m	1			
1,1,13	Supply and Install Galvanized kicker pipes according to material specification – price to include strapping as specified					
1,1,13,1	76mm diameter and supplied in a 6m length	each	1			
1,1,13,2	35mm diameter and supplied in a 6m length	each	1			
1,1,13,3	25mm diameter and supplied in a 6m length	each	1			

Pricing Instructions

Part C2.1

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	ABOUR	TOTAL PRICE
1,2	LV Underground Cables					
	Installation of LV Cables, in trenches and through ducts -price on cut-lengths. Cables to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,2,1	16mm 2 core cable – SWAPVC Cu and 16mm 4 core cable – SWAPVC Cu	m	1			
1,2,2	25mm to 50mm 4 core cable – SWAPVC Cu	m	1			
1,2,3	70mm to120mm 4 core cable – SWAPVC Cu	m	1			
1,2,4	150mm to 185mm 4 core cable – SWAPVC Cu	m	1			
1,2,5	240mm to 300mm 4 core cable – SWAPVC Cu	m	1			
1,2,6	25mm to 50mm 4 core cable – SWAPVC AI	m	1			
1,2,7	70mm to120mm 4 core cable – SWAPVC AI	m	1			
1,2,8	150mm to 185mm 4 core cable – SWAPVC AI	m	1			
1,2,9	240mm to 300mm 4 core cable – SWAPVC AI	m	1			
1,3	Installation of Earth Conductors, in trenches and through ducts. Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,3,1	32mm Bare Copper Conductor - Earth Wire	m	1			
1,3,2	64mm Bare Copper Conductor - Earth Wire	m	1			
1,4	Termination of LV cables by suitably qualified personnel					
1,4,1	16mm 2 core cable – SWAPVC Cu and 16mm 4 core cable – SWAPVC Cu	each	1			
1,4,2	25mm to 50mm 4 core cable – SWAPVC Cu	each	1			
1,4,3	70mm to120mm 4 core cable – SWAPVC Cu	each	1			
1,4,4	150mm to 185mm 4 core cable – SWAPVC Cu	each	1			
1,4,5	240mm to 300mm 4 core cable – SWAPVC Cu	each	1			
1,4,6	25mm to 50mm 4 core cable – SWAPVC AI	each	1			
1,4,7	70mm to120mm 4 core cable – SWAPVC AI	each	1			
1,4,8	150mm to 185mm 4 core cable – SWAPVC AI	each	1			
1,4,9	240mm to 300mm 4 core cable – SWAPVC AI	each	1			

Pricing Instructions

Part C2.1

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	ABOUR	TOTAL PRICE
1,5,1	Jointing of LV cables - Cu Cables					
1,5,1,1	Install Duracast or similar approved joint – 10mm to 16mm	each	1			
1,5,1,2	Install Duracast or similar approved joint – 16mm to 35mm	each	1			
1,5,1,3	Install Duracast or similar approved joint – 35mm to 50mm	each	1			
1,5,1,4	Install Duracast or similar approved joint – 50mm to 95mm	each	1			
1,5,1,5	Install Duracast or similar approved joint – 95mm to 150mm	each	1			
1,5,1,6	Install Duracast or similar approved joint – 150mm to 300mm	each	1			
1,5,2	Jointing of LV cables - Al Cables					
1,5,2,1	Install Duracast or similar approved joint – 35mm to 50mm	each	1			
1,5,2,2	Install Duracast or similar approved joint – 50mm to 95mm	each	1			
1,5,2,3	Install Duracast or similar approved joint – 95mm to 150mm	each	1			
1,5,2,4	Install Duracast or similar approved joint – 150mm to 300mm	each	1			
1,6	Equipment: Distribution Kiosk					
	Installation of distribution kiosk complete with minimum Three phase Busbars					
1,6,1	6 way - including base minimum 300A rated Three phase Busbars	each	1			
1,6,2	9 way - including base minimum 500A rated Three phase Busbars	each	1			
1,6,3	12 way - including base minimum 500A rated Three phase Busbars	each	1			
1,7	Installation of distribution budle box complete - Wired for 3 -phase with minimum 150A rated busbars					
1,7,1	SP1 Bundle Box	each	1			
1,7,2	AP1 Bundle Box	each	1			
1,7,3	AP2 Bundle Box	each	1			

Pricing Instructions

Part C2.1

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	ABOUR	TOTAL PRICE
1,8	Install equipment in kiosk / distribution box including wiring:					
1,8,1	125 to 200A feeder breakers	each	1			
1,8,2	225A to 275A feeder breakers	each	1			
1,8,3	300A to 450A feeder breakers	each	1			
1,8,4	60A single phase circuit breakers	each	1			
1,8,5	80A single phase circuit breakers	each	1			
1,8,6	60A three phase circuit breakers	each	1			
1,8,7	80A three phase circuit breakers	each	1			
1,8,8	100A three phase circuit breakers	each	1			
1,8,9	Streetlight control (20A/5A CB, 60A contactor & photo cel)	sum	1			
1,8,10	Street light Metering units - metering units supplied by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)	each	1			
1,9	Overhead Lines (as per the specifications of the individual poles and support below)					
1,9,1	All-inclusive cost for 16mm to 64mm Cu conductor LV Overhead Line. Excluding supporting structures to be claimed below. Total conductor length for this section will be 500m x 5conductors x10% (sag and other factors) Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)	m	1			
1,9,2	All-inclusive cost for 35mm to 50mm ABC LV Overhead Line. Excluding supporting structures to be claimed below. Total conductor length for this section will be 1000m ABC x10% (sag and other factors) Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)	m	1			
1,9,3	All-inclusive cost for 70mm to 95mm ABC LV Overhead Line. Excluding supporting structures to be claimed below. Total conductor length for this section will be 1000m ABC x10% (sag and other factors) Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)	m	1			

Pricing Instructions

Part C2.1

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	ABOUR	TOTAL PRICE
1,10	Individual Poles and support					
1,10,1	9m Intermediate Pole with 5 x Insulators: Bare	Each	1			
1,10,2	9m Strain/terminal Pole with 5 x Insulators: Bare Conductor - end pole	Each	1			
1,10,3	9m Strain Pole with 10 x Insulators: Bare Conductor	Each	1			
1,10,4	9m Strain/terminal Pole with strain clamps: ABC Conductor	Each	1			
1,10,5	9m Intermediate Pole with suspension clamps: ABC Conductor	Each	1			
1,10,6	Stay Complete	Each	1			
1,10,7	Strut Complete	Each	1			
1,10,8	Flying Stay	Each	1			
1,10,9	Installation of wooden distribution poles		1			
1,10,9,1	9m	Each	1			
1,10,9,2	11m	Each	1			
1,11	Installation of Consumer Supply Cable					
1,11,1	10mm2 Airdac	m	1			
1,11,2	16mm2 Airdac	m	1			
1,12	Installation of prepaid meter base and Ready board in the house					
1,12,1	Install Ready Board	each	1			
1,12,2	Install conventional meter Single phase (20 - 100 A)	each	1			
1,12,3	Install conventional meter Three phase (20 - 100 A)	each	1			
1,12,4	Install Prepayment meter (standalone)	each	1			
1,12,5	Install Prepayment meter (PLC split) Single phase	each	1			
1,12,6	Install Prepayment meter (PLC split) Three phase	each	1			
1,13	Termination of LV cables by suitably qualified personnel at Pole box or residential unit					
1,13,1	10mm2 Airdac	each	1			
1,13,2	16mm2 Airdac	each	1			
1,14	Install bare conductor onto a newly built line or existing poles where the conductor needs to be replaced					
1,14,1	16mm Cu	m	1			
1,14,2	32mm Cu	m	1			
1,14,3	64mm Cu	m	1			
	TOTAL PRICE FOR CATEGORY EP4 LV SECTION A, Excl. VAT					

CATEGORY EP4: STREETLIGHT WORKS | SECTION A

All materials shall be supplied by the contractor, unless stated that the municipality will free issue materials. The rates must include transportation of materials to site, as well as all other overhead and P&G costs. The rates should also make provision for all OHS act requirements and other contractual requirements. The rates should also include for all labour and machinery and vehicles needed to complete the work. All material shall comply to the George Municipality's material specification. **Where the Municipality free issue the material the contractor shall insert the Rand value of the handling fee in the material rate column. Should no value be inserted no handling fee shall be paid. (Handling fee shall include all overhead cost to use the materials on the project covering the risk of handling from collection to installation.)**

	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,1	Excavation					
1,1,1	Removal of Tarmac (Cut size as needed)	m ³	1			
1,1,2	Removal of Concrete (Cut size as needed)	m ³	1			
1,1,3	Removal of Brick Paving	m ²	1			
1,1,4	Removal of Soil - Hard Excavation	m ³	1			
1,1,5	Removal of Soil - Intermediate Excavation	m ³	1			
1,1,6	Removal of Soil - Soft Excavation	m ³	1			
1,1,7	Compacting of excavation	m ³	1			
1,1,8	Backfilling with backfilling material	m ³	1			
1,1,9	Import bedding sand	m ³	1			
1,1,10	Supply and Install Danger Tape above Cables	m	1			
1,1,11	Installation of 110mm diameter Ducts	m	1			
1,1,12	Installation of 160mm diameter Ducts	m	1			
1,1,13	Supply and Install Galvanized kicker pipes according to material specification					
1,1,13,1	76mm diameter and supplied in a 6m length	each	1			
1,1,13,2	35mm diameter and supplied in a 6m length	each	1			
1,1,13,3	25mm diameter and supplied in a 6m length	each	1			

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	ABOUR	TOTAL PRICE
1,2	LV Streetlight Cables					
	Installation of LV Cables, in trenches and through ducts. Cables to be free issued by the Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,2,1	10mm 2 core / 4 core cable – SWAPVC Cu	m	1			
1,2,2	16mm 2 core / 4 core cable – SWAPVC Cu	m	1			
1,3	Installation of Earth Conductors, in trenches and through ducts. Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,3,1	16mm Bare Copper Conductor - Earth Wire	m	1			
1,4	Termination of LV cables by suitably qualified personnel					
1,4,1	10mm 2 core / 4 core cable – SWAPVC Cu	each	1			
1,4,2	16mm 2 core / 4 core cable – SWAPVC Cu	each	1			
1,5	Jointing of Cu cables, irrespective type and size					
1,5,1	Supply Duracast or similar approved joint – 10mm to 16mm	each	1			
1,6	Installation of Streetlight Poles and outreach arms incl Wiring of Streetlight and pole (2.5mm red and black) Poles supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,6,1	9m Streetlight Pole	each	1			
1,6,2	11m Streetlight Pole	each	1			
1,6,3	7.2m Streetlight Pole	each	1			
1,6,4	9m wooden distribution Pole	each	1			
1,6,5	11m wooden distribution Pole	each	1			
1,6,6	Single Outreach Arm, on new or existing pole	each	1			
1,6,7	Double Outreach Arm, on new or existing pole	each	1			

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	ABOUR	TOTAL PRICE
1,7	Installation of Streetlights including wiring and connection to the main LV feeder. Streetlight fittings supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,7,1	Streetlight Fitting: LED Less than 45W- minimum 4 000 Lumen - Colour Temp = 4000K	each	1			
1,7,2	Streetlight Fitting: LED Less than 180W - minimum 16 500 Lumen - Colour Temp = 4000K	each	1			
1,7,3	Flood lights: LED - Less than 480W - minimum 48 000 Lumen - Colour Temp = 4000K	each	1			
1,7,4	Flood lights: LED - Less than 210W - minimum 17 500 Lumen - Colour Temp = 4000K	each	1			
1,7,5	LED Post-Top - Less than 45W - minimum 3000 Lumen - Colour Temp = 4000K	each	1			
1,8	Assembling and installation of Streetlight Control in distribution kiosk or pole box including all wiring required					
1,8,1	3 phase 60A contactor as per material specification	each	1			
1,8,2	1 x Photocell as per material specification	each	1			
1,8,3	Wiring and accessories required	each	1			
1,8,4	single phase metering unit - meter supplied by the Municipality	each	1			
1,8,5	60A three phase circuit breakers as per material specification	each	1			
1,8,6	60A single phase circuit breakers as per material specification	each	1			
1,8,7	20A single phase circuit breakers as per material specification	each	1			
1,9	Equipment: Distribution Kiosk or pole box					
	Installation of distribution kiosk complete with minimum rated 300A Busbars					
1,9,1	4 Way - including base	each	1			
	Installation of distribution pole box complete with minimum rated 150A Busbars					
1,9,2	AP1 Bundle Box	each	1			

Pricing Instructions

Part C2.1

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,10	LV Overhead Lines (ABC & Supports) Conductor supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,10,1	All-inclusive cost for 25mm ABC LV Overhead Line. Supports such as struts, stays to be claimed below. Allow for sag and other factors in bid price	m	1			
1,10,2	9m Strain Pole with strain clamps: 25/2 ABC Conductor - 2 x strain insulator clamps	Each	1			
1,10,3	9m Intermediate Pole with suspension clamps: 25/2 ABC Conductor	Each	1			
1,10,4	Stay Complete	Each	1			
1,10,5	Strut Complete	Each	1			
1,11	Remove Luminaire & Pole					
1,11,1	Remove Streetlight from Pole (up to height of 11m) and transport to Munic Depot	each	1			
1,11,2	Removal of steel, concrete, fibreglass or wooden poles by excavation and reinstatement of surface area and delivery to the Municipal depot	each	1			
1,11,3	Disconnect the LV streetlight cable (assume 10/2 Cu for bid purposes) and join to ensure continuity of supply	each	1			
1,11,4	Disconnect the LV streetlight cable (assume 10/2 Cu for bid purposes) and make safe if this is end of feeder.	each	1			
1,12	Replacement of Street lights. Streetlight fittings supplied by George Municipality. Material rate shall be the contractors handling fee. (Rand value and not percentage)					
1,12,1	Streetlight Fitting: LED Less than 45W	each	1			
1,12,2	Streetlight Fitting: LED Less than 180W	each	1			
1,12,3	Flood lights: LED - Less than 480W	each	1			
1,12,4	Flood lights: LED - Less than 210W	each	1			

Pricing Instructions

Part C2.1

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	OTAL PRICE
1,12,5	LED Post-Top - Less than 45W	each	1			
1,13	Locating of faults via testing and inspection	R/hr	1			
	TOTAL PRICE FOR CATEGORY EP4 STREET LIGHTS SECTION A, Excl. VAT					

CATEGORY EP4 SECTION B: HOURLY LABOUR AND SPECIALST SECTION

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,1	Switching					
1,1,1	Arrange for switching	sum	1			
1,1,2	Ensure that installation is safe for work	sum	1			
1,1,3	Earth as necessary	sum	1			
1,1,4	Notice to affected customers- per shut-down for say 30 customers per notice	sum	1			
1,2	Normal Working Hours					
1,2,1	Skilled Labor (Supervisor)	h	1			
1,2,2	Skilled Labor (Electrician)	h	1			
1,2,3	Semi-Skilled (Apprentice Electrician)	h	1			
1,2,4	Un-skilled (Laborer)	h	1			
1,3	After Working Hours					
1,3,1	Skilled Labor (Supervisor)	h	1			
1,3,2	Skilled Labor (Electrician)	h	1			
1,3,3	Semi-Skilled (Apprentice Electrician)	h	1			
1,3,4	Un-skilled (Laborer)	h	1			
1,4	Sundays and Public Holidays					
1,4,1	Skilled Labor (Supervisor)	h	1			
1,4,2	Skilled Labor (Electrician)	h	1			
1,4,3	Semi-Skilled (Apprentice Electrician)	h	1			
1,4,4	Un-skilled (Laborer)	h	1			
1,5	Transport					
1,5,1	LDV	km	1			
1,5,2	10 Ton Truck	h	1			
1,5,3	Cherry Picker	h	1			
1,5,4	Compactor	h	1			

NO	DESCRIPTION, <u>please ensure that the Bill of Quantities has been completed in full. Failing to do so will result in disqualification of tender.</u>	UNIT	QTY	MATERIAL	LABOUR	TOTAL PRICE
1,5,5	Excavator	h	1			
1,5,6	Traffic Control per day	R/day	1			
1,6	Testing or settings Required					
1,6,1	Voltage test	each	1			
1,6,2	Earthing Test	each	1			
1,6,3	As built drawing of the works completed	h	1			
1,6,4	Wayleave applications	h	1			
1,6,5	11kV MV Cable Pressure test	each	1			
1,6,6	Compaction test	each	1			
1,6,7	1000V Megger test	each	1			
1,7	Specialist sub-contractor					
1,7,1	Protection Settings Engineer: Specialist team as specified	R/hr	1			
1,7,2	Land Surveyor: Specialist	R/hr	1			
1,7,3	MV Cable Fault Location (Cable lengths up to 5000m)	R/day	1			
1,7,4	LV Cable Fault Location (Cable lengths up to 1000m)	R/day	1			
1,8	Material	Unit		Estimated Material Value		
1,8,1	Material Not in BOQ - 3 quotations for material to be obtained - indicate percentage markup on material to be supplied - maximum 15%. Do not include the estimated material value in the total for Section B	%		Not be completed		
1.9	Preliminary and General costs. Only for Uniondale and Haarlem	R/day				
1.10	Preliminary and General costs. Only for George, Wilderness, Pacaltsdorp, Herold's Bay,	R/day				
	TOTAL PRICE FOR CATEGORY EP4 SECTION B, Excl. VAT					

TOTAL PRICE FOR CATEGORY EP4 MV SECTION A, Excl. VAT	
TOTAL PRICE FOR CATEGORY EP4 LV SECTION A, Excl. VAT	
TOTAL PRICE FOR CATEGORY EP4 S LIGHTS SECTION A, Excl. VAT	
TOTAL PRICE FOR CATEGORY EP4 S LIGHTS SECTION B, Excl. VAT	
TOTAL TAXES EXCLEDED	
TAXES 1 – 15% VAT APPLICABLE ON TOTAL	
TAXES 2 – OTHER TAXES APPLICABLE ON TOTAL – IF APPLICABLE (BIDDER TO DEFINE)	
ALL APPLICABLE TAXES (TAXES 1 + TAXES 2)	
TOTAL FOR CATEGORY EP4, INCLUDING ALL APPLICABLE TAXES	

GEORGE MUNICIPALITY**DIRECTORATE: ELECTRICAL ENGINEERING SERVICES****TENDER NUMBER: GMT014/24-25****TENDER FOR TENDER FOR APPOINTMENT OF CONTRACTORS FOR
THE EXECUTION OF CAPITAL PROJECTS, AS AND WHEN REQUIRED
M FROM DATE OF APPOINTMENT UNTIL 30 JUNE 2029****Scope of Works (C3)****C 3.1 DESCRIPTION OF WORKS****Employer's objective:**

The employer's objectives are to invite bids for the APPOINTMENT OF CONTRACTORS FOR THE EXECUTING OF CAPITAL PROJECTS.

BIDDERS MUST TAKE NOTE THAT THIS IS NOT A ONCE - OFF CONTRACT. WORK WILL BE EXECUTED AS AND WHEN REQUIRED WITHIN THE APPROVED BUDGET. **THIS TENDER WILL NOT BE USED FOR OPERATION AND MAINTENANCE.**

APPOINTMENT PHILOSOPHY:

A maximum of five (5) contractors shall be appointed per category.

Tenderers shall clearly indicate the category or categories for which they are submitting bids.

Your bid will not be automatically included in any other category if not indicated that you tender for that category even though the CIDB qualify them for other category's.

Indicate for which category you will be bidding for:

Category	Tender for Category? YES	Tender for Category? NO
Category 2 EP		
Category 3 EP		
Category 4 EP		

A tenderer may submit a bid for one, multiple, or all categories, provided that the tenderer meets the minimum required CIDB grading and any other eligibility requirements specified for the relevant category.

Appointment to a category does not guarantee any minimum value or volume of work. Work shall be allocated on an as-and-when-required basis in accordance with the procedures outlined below.

WORK ALLOCATION PROCESS:

Upon identification of a project requirement, the Municipality shall conduct a site assessment and prepare a project-specific Bill of Quantities (BOQ) detailing the scope and quantities of work to be executed.

The Municipality shall invite contractors appointed within the relevant tender category (Category EP2, Category EP3, Category EP4) to attend a compulsory site meeting, as determined by the Municipality.

During the site meeting, contractors shall be provided with the project information and the relevant BOQ for quotation purposes.

The estimated value of the project shall determine the applicable category and CIDB grading level eligible to participate in the quotation process.

By way of example, where the estimated value of a project is approximately R2 million, only contractors appointed under the applicable Category EP 3 shall be invited to participate.

Only contractors appointed under the applicable category / CIDB grading level shall be invited to submit quotations for the project.

Rates applied during the project-specific quotation process shall be based on the approved rates submitted and accepted as part of the tender appointment process. No amendments to these rates shall be permitted unless specifically approved by the Municipality.

Certain quantities or project-specific items may remain open for determination by the contractor based on their proposed methodology, construction requirements, or project-specific considerations. Such quantities shall be identified by the Municipality in the project BOQ.

ADJUDICATION OF PROJECT-SPECIFIC WORKS:

Quotations shall be submitted in hard copy, in a sealed envelope, in accordance with the submission arrangements communicated during the site meeting.

Quotations shall be opened publicly after the closing time at the designated Municipal venue. Contractors may attend the opening should they wish to do so.

The Municipality shall evaluate quotations to confirm compliance with the conditions of appointment and to verify that submitted rates correspond with the approved contract rates.

Any quotation containing rates that do not correspond with the approved contract rates may be considered non-responsive and may be disqualified.

Evaluation of quotations for individual projects shall be undertaken on the applicable Preferential Procurement point system prescribed by legislation at the time of invitation. Unless otherwise stated, quotations shall be evaluated on the 80/20 preference point system.

Extent of the Works:

The work to be carried out under the contract is as provided for Construction. Any scope changes/variations instructed by the engineer will be measured and paid for at the rates tendered in the Schedule of Quantities.

General Notice:

All installations and labour to comply with the applicable, updated legislation. **All materials shall be supplied by the contractor unless otherwise specified.** All pricing shall include all cost relating to the handling, installation /delivering to the site as well as commissioning, testing and handing over of a fully functional installation. Pricing shall be inclusive of VAT. The BOQ is to be completed exclusive of VAT for the items. The VAT will be added to the price in the summary sections.

Categories shall be evaluated individually, and each category consists of MV Section A, LV Section A and Street lights Section A. Section A is category specific, whilst section B is mainly for hourly labour and transport etc. **Should the whole category (both sections and all items) not be completed, the tender for that category will be deemed non-responsive. Tenderers are allowed to tender for all or any of the categories.**

The following is attached (Do not submit these annexures with the tender submission):

Annexure 1 – Specification Drawings

Annexure 2 – Specification on backfilling

Annexure 3 – Specifications of plinths

Please note that these annexures should not be handed in as part of the tender. It is however an integral part of the tender and shall be complied with during implementation of the contract.

STANDARD OF WORK

The electrical installation shall conform to the requirements of SANS Code of Practice 10142.

Galvanising, where specified, shall be in accordance with SANS 763.

SURVEYS**Pre-installation Route Surveys**

The Contractor shall within 30 days after being awarded an order, carry out a pre-installation route survey which shall include digging test holes, guided by the drawings supplied by the Employer.

The Contractor shall determine where cables are liable to be subjected to chemical, electrolytic, mechanical or other damage and shall submit his recommendation to the Engineer for approval.

No excavation of any section of the cable route shall commence before the Contractor is in possession of the relevant approved plans, wayleaves and the Engineer has authorised the commencement of work on the section concerned.

Post Installation Surveys

After completion of all cable laying and jointing and before commissioning of any cable the Contractor shall carry out a final "as laid" survey of the cable routes and submit plans.

The cable route plans shall include the following information:

- Overall length, type, size and voltage of each cable.
- Accurate indication of the position of each joint from permanent structures.
- Ducts and chambers provided.

EXCAVATIONS

The Contractor will be advised of any known buried services such as cables, pipes, etc. in the vicinity of the cable route.

When trenching the contractor shall take all necessary precautions to prevent damage to existing underground services

On encountering any uncharted service, the Contractor shall promptly advise the Engineer who will give the necessary instructions.

Should any underground service, water mains, road pavement, drainage system, building or any other structure be damaged by the Contractor's staff, he shall arrange for the necessary repairs. The contractor shall be responsible for the cost of repairs.

The removal of obstructions along the cable routes shall be subject to the approval of the Engineer.

Excavations crossing railway lines shall not commence until an authorized representative is present on site. The Engineer shall be advised 14 days in advance when such excavations will take place.

Cable crossing of railway lines shall only be at right angles.

Trenches across roads, access ways or foot-paths shall not be left open. If trenching, cable laying and back filling cannot be done during the same shift, the portion of trench across the full width of the road, etc., must be temporarily backfilled and consolidated sufficiently to carry the traffic concerned without subsidence. Alternatively, adequately strong cover plates shall be laid across the trench.

Where other trenches or holes for poles are left unattended for any period of time, these areas must be clearly barricaded by means of a PVC danger warning tape zigzagging between two steel wires spaced 300mm apart with the bottom wire approximately 300 mm above ground level and with realistic interval supports.

Power driven mechanical excavators may not be used for trenching operations, unless with the written approval of the Electrical Engineering Department. The Municipality of George shall not be responsible for any damage to other services in close proximity when using mechanical excavators.

The Contractor shall provide shuttering in places where the danger exists of the trench collapsing and causing damage to formations or other nearby structures.

Shuttering shall be paid for at scheduled rates.

Trenches shall be as straight as possible, and the bottom of each cable trench shall be firm and of smooth contour without sharp dips or rises which may cause tensile forces in the cable during backfilling.

Trenches shall have no sharp objects which may cause damage to the cable during laying or backfilling.

The unfinished depth of trenches unless otherwise stated shall be as follows:

- | | | |
|------|---|---------|
| i) | MV & associated pilot / fibre optic cables: | 1000 mm |
| ii) | LV & separate pilot / fibre optic cables : | 750 mm |
| iii) | Service & streetlight cables : | 750 mm |
| iv) | All cables across private property | |

and public open spaces : 1 000 mm
& concrete slabs

The width of the trench unless otherwise stated shall be: 450mm

MV Cables (together with associated fibre optic or other pilot cables):

1 & 2 MV cables: 500mm

And shall increase by 300 mm for each additional MV cable (together with its associated fibre optic or other pilot cable).

LV Cables:

1 to 3 LV cables 450mm and shall increase by 150mm for each additional LV cable.

The width of the trench at any bend or places where cable slack is required, shall be such that the bending radius of the cables shall not be less than that specified for the particular cable as per specifications SANS 150, SANS 97 and SANS 1339.

The material excavated from each trench shall be placed in such a manner as to prevent nuisance or damage to adjacent ditches, drains, gateways and other properties and shall not interfere with traffic.

Where, owing to certain considerations, this is not possible the excavated materials shall be removed from site and be returned for refilling the trench on completion of laying.

Removal of accumulated water or other liquid from trenches shall be done by the Contractor at his expense. The Contractor shall provide all pumps and appliances required to carry out this operation. Water or any other liquid removed shall be disposed of without creating any nuisance or hazard.

The George Municipality reserves the right to alter any cable route or portion thereof prior to cable laying. Payment in respect of any additional work involved shall be at scheduled rates.

CABLE LAYING

General

- All possible care shall be exercised in handling cables on site.
- Any drum of cable showing signs of damage shall not be used without the prior consent of the Electrical Engineering Department.
- The outer covering of cables shall not be damaged in any way and cables shall not be bent at radii less than allowed by the manufacturer.

- When cable is supplied by the contractor, the drums thereof remain the property of the Contractor and shall be removed from the site and disposed of by him.
- Cable pulling and laying shall be done manually unless otherwise approved by the Electrical Engineering Department. No cable shall be subjected to a tension exceeding that stipulated by the cable manufacturer. Cable drums must be mounted on jacks and cable rolled out from spinning drum.

In trenches

- High Voltage cables shall be spaced at a minimum of 300 mm apart (centre to centre).
- Low Voltage cables shall be spaced at a minimum of 150 mm apart (centre to centre).
- Pilot cables shall be laid beside the associated power cables.
- High Voltage and Low voltage cables (and pilot cables not associated with High Voltage cable) shall be spaced at a minimum of 300 mm apart.
- Pilot cables, when they are routed separately from their associated power cables, may be run next to one another.
- The same type of cables shall not be buried on top of each other except where cable runs cross.
- When the cable cannot be laid down at the specified depth, prior authority shall be obtained from the Engineer by the Contractor to protect the cable by means of 100 mm diameter pitch fibre ducts with 50 mm concrete slab coverings, or other approved methods.
- Where cables must be drawn around corners, well lubricated skid plates, or corner rollers, shall be used. The skid plates, or corner rollers, shall be securely fixed and constantly examined during cable laying operations.
- Suitable cable rollers must be used at sufficiently frequent intervals to support and guide an MV cable whenever it is pulled along a trench floor or any other surface. It must also be used in according with the manufacturer's guidelines.
- Cables shall be visually inspected for damage during and after laying. Any damage shall be reported immediately to the Electrical Engineering Department, who will issue the necessary instructions.

In cable ducts

- All cables crossing beneath roads and pavements shall be enclosed in PVC ducts with a minimum internal diameter of 110mm. The Engineer shall be advised timeously of the

location and quantity of ducts to be laid, if supplied by the Employer. Separate lengths of ducts shall be properly jointed.

- Ducts shall maintain or exceed the specified cable spacing.
- Ducts shall extend at least 1 m of either side of the road- or pavement formations and shall maintain the specified cable depth. All ducts shall be graded for water drainage: the required grade is 1:400.
- Number of cables per duct:

1.MV cables	:	1 per duct
2.LV cables	:	1 per duct
3.Service and streetlight cables	:	4 per duct
- Where spare ducts have been installed, or where ducts are not to be used immediately, each such duct shall be fitted with a 4mm diameter galvanized steel draw- wire running full-length inside the duct and fastened to a stake, visible above ground, at the mouth of the duct at each end.

Under bridges and in tunnels:

- Where a cable route can only be against the concrete wall of a bridge or tunnel the cable shall be supported either on suitable brackets at 750 mm intervals or straining wire secured at maximum 1 200 mm intervals.
- Brackets shall be of robust design and shall be galvanised and painted in accordance with specifications SANS 912, SANS 681 Type 2 and SANS 630 - Grade 1.
- The height of the cable route on the brackets or strain wire shall be determined and agreed upon on site.
- The brackets or strain wire shall be supplied and installed by the contractor.

Secured to poles

- Cables to be terminated at overhead lines or equipment mounted on wood, concrete or steel poles, shall be clamped onto such structures by means of stainless steel straps applied at such a tension that the cable or cable sheath is not damaged. Straps shall be located at intervals of not more than 1,2 m.
- Cables shall be protected by a pipe or boxed section of galvanised steel or other approved material for a distance of 250 mm below and 600 mm above ground level,

strapped or screwed to the pole at a minimum of two points and connected to the earth connection, if of steel construction.

Exposed conditions

- Whenever cables enter buildings or tunnels, or where excavations are not permitted down banks or cuts, the exposed portion shall be suitably protected by means of concrete slabs, or suitable steel pipes or boxed sections which shall be galvanised in accordance with SANS 763.
- These pipes or boxed sections shall be firmly secured to the bank or cut, at regular intervals.
- All such material shall be supplied and installed by the Contractor.

CABLE TERMINATIONS

General

- All cables shall be terminated and connected to the respective equipment, whether provided by the Contractor or by others.
- Jumpers between cable end boxes and disconnectors shall either be short enough to be rigidly self-supporting, or shall be supported on suitably placed pin insulators.
- Termination of cables on outdoor equipment shall not be done during inclement weather conditions.
- Both ends of each cable shall be identified by means of embossed stainless-steel strips clamped around the cables. The characters shall have a minimum height of 6 mm.
- All materials necessary for cable termination shall be provided by the Employer.
- The Contractor shall ensure that correct phase rotation is maintained throughout.
- Glands of cables terminating on equipment provided with frame leakage protection shall be insulated from the frame by high grade non-deteriorating, non-hygrosopic insulation, at least 2 mm thick, capable of withstanding a test voltage of 4 kV DC for one minute.
- **A thin film of approved electrical jointing compound, such as Densyl paste, shall be applied between the mating faces on all connections, before tightening or crimping, to ensure sound electrical contact and to minimize electrolytic corrosion.**

MV cables

- Where for any reason a cable cannot be joined or terminated, sufficient length of cable shall be left to reach the cable joint or end box position. The cable shall be coiled and buried or otherwise protected. The cut end of a paper insulated cable shall be capped immediately after cutting, with a plumbed lead seal. The cut end of an XLPE or other type of cable shall be sealed immediately after cutting, with a heat-shrink cap or suitable approved tape.
- MV heat shrink terminations. Terminations shall be supplied in kit form and shall be clearly marked with the type of cable and voltage grade. The material shall be resistant to ultra-violet radiation and shall comply with the requirements of VDE 0278. Outdoor terminations shall be designed to resist flash-over under wet and polluted conditions and provided with the appropriate number of skirts.

LV and Pilot cables

- All cut ends of cables are to be sealed with suitable tape, or approved means until they are ready to be terminated.
- Cable Glands: Cables shall terminate in compression type glands. Cable glands shall be supplied complete with neoprene rubber shrouds. Glands shall be similar to Pratley, or Captive Cone Glands. The size and type required shall be in accordance with the type of cable, number of cores and the manufacturer's recommendations. The cable gland shall be manufactured completely of brass. The glands shall be supplied with a brass or stainless steel locknut. Densyl paste shall be used between glands and all metal surfaces.
- Cable lug sleeves: Colour coded neoprene rubber cable lug sleeves shall be installed on all LV cable lugs. The sleeves shall be similar to those supplied by Bowthorpe Hellerman. Colours of sleeves shall correspond to the appropriate phase colour. Alternatively colour coded heat shrink tubing may be used, but PVC insulation tape shall not be accepted.
- Line Taps: Line taps shall be used for the connection of cable cores to the overhead conductors. Bi-metal parallel groove line taps shall be used when connecting aluminium cables to copper conductor overhead lines or copper cables to aluminium overhead lines. Galvanised line taps shall not be used.

CABLE JOINTS

General

- Jointing shall be carried out strictly in accordance with the manufacturer's jointing instructions and by artisans thoroughly experienced and competent in jointing the

classes of cables used. They shall be adequately supervised to ensure the highest quality of workmanship.

- Jointing shall not be carried out during inclement weather.
- The cores of cables shall be jointed, number to number or colour to colour.
- The joints shall not impair the anti-electrolysis characteristics of the cables.
- The conductor bridging the armouring shall be adequate to carry the prospective earth fault current.
- Conductors can be crimped with an approved hydraulic crimping tool using the appropriate hexagonal compression die and crimping ferrule for that size of conductor and type of material.
- The Employer reserves the right to be present during jointing operations to familiarise themselves with any special techniques.
- No joint shall be situated inside a cable pipe.

MV Cables

- Heat Shrink through Joint: Cables shall be joined with heat shrink joints. The material shall conform to the requirements of VDE 0278. The electrical continuity of the conductors, shields and armouring shall in no way be affected by the joint. Bonding of the earth continuity conductor shall be internal to the joint. No external joining of the earth continuity conductor, which may be subject to corrosion, shall be permitted. The complete joint shall be covered with a waterproof jacket as protection against corrosion.

LV Cables

- LV cables joints shall be of the epoxy resin type like "Scotch Cast" or heat shrink joints.

COVERING, BACKFILLING AND REINSTATEMENT

Filling of trenches shall not commence before the Engineer or his authorised representative has inspected and approved the cables and cable joints situated in the section of trench concerned

and instructed the Contractor whether to use the excavated material as backfill or whether to use imported backfill.

All trenches shall be backfilled and reinstated as follows:

- Two 100 mm thick layers of soil sifted through a 6 mm mesh shall be laid directly under and over the cables respectively and consolidated by hand ramming only.
- Only soil with a thermal resistivity of 1,5 C.m/watt, or lower may be used for this purpose.
- When instructed by the Engineer or his authorised representative imported fill shall be arranged by the Contractor and paid for at scheduled rates.

MV cables shall where likely to be mechanically damaged as decided by the Engineer be protected by concrete slabs to be supplied and laid by the contractor 200 mm above the cables. These slabs shall be laid close-butted, convex end to concave end, directly above each MV cable throughout the underground portion except where otherwise protected as by ducts, etc. Only unbroken cable protection slabs may be used, and only slabs actually laid will be paid for.

The minimum dry densities of back filling after compaction shall be not less than 1 6 00 kg/cub.m.

All excavations made (whether for the purpose of cable laying, joint bays or trial holes) shall be back-filled in 100 mm layers, the earth in each layer being well rammed and consolidated and sufficient allowance being made for settlement. The back-filling shall be completed to the satisfaction of the Engineer. If necessary, water shall be used to obtain the specified compacted density. Any cable damaged during back filling shall be replaced by the Contractor at his own expense.

Backfilling at duct entries shall be such as not to stress or damage the cable during compaction from the top.

Plastic warning tape:

- Plastic warning tape shall consist of a strip of polyethylene of thickness of 150 microns and 300 mm wide. The following shall be printed in black on an orange background at intervals not exceeding
- 1 m. Printing shall be of good durable quality.
- "Danger"/"Gevaar"/"Ingozi"
- Skull and crossbones danger sign

- A continuous plastic cable warning tape shall be laid directly above each MV cable, 150 mm below the normal surface level and run for the full length of the cable before completing the back filling. Warning tape shall not be laid above LV cables.

The back filled trench shall be maintained in a thoroughly safe condition by the Contractor for the duration of the contract.

- All back filling of road crossings must be performed as follows:
- Fill in with moist gravel in layers of 150 mm. Import gravel from Electrical Engineer's yard if quantity on site is insufficient.
- Ram each 150 mm layer by hand or mechanically.
- Import base course material, as directed by the Engineer, for filling of top 150 mm layer. Material must be moist. Ram properly.
- Remove excess material from site.

Final surfacing of roads shall be restored by others.

Cable route markers shall be installed at the following standard positions:

- Above all cable joints.
- Above ends of cable ducts.
- Change in direction of cable routes.
- Every 100 m along a straight section of the cable route.

Concrete surfaces

- Backfilling shall be compacted to the density of the original ground. The concrete surface shall only be completed after sufficient time has elapsed to show up inadequately compacted areas.
- The edges of the concrete slab shall be cut back vertically to a straight line. Areas subject to traffic loads shall then be repaired with 20 MPa concrete and those for pedestrians with 15 MPa concrete.

Paved Areas

- The Contractor shall remove paving slabs or bricks along the cable route carefully and stack them for reuse when repairing the surface. The excavation shall be backfilled and compacted to its original density.

- A dry sand and cement mixture bedding layer, with a minimum thickness of 30 mm, shall be spread evenly over the compacted backfilling. Pavers shall be replaced in their original formation and be bedded until level with the surrounding finish.
- If required by the Engineer, the joints shall be grouted and be finished off neatly.
- The Contractor shall regularly inspect and maintain the repaired surface and repair any subsidence or breaking up immediately.

Gravel and Pavement Areas:

- Shall be reinstated to the original standard, using G5 natural gravel

MEASUREMENTS

All measurements for payments purposes shall be made jointly by representatives of the Contractor and Employer and shall be agreed upon by both parties. The Contractor shall be responsible for obtaining the Engineer's signed approval of such measurements.

Determination of trench volume for measurement purposes shall be based on measured length and specified width and depth. No allowance shall be made where trenches have to be widened at the bottom to accommodate cables, cable joints and protection slabs.

The classification of different types of ground for measurement purposes shall be according to SANS 1200

Measurements of cable length shall be made from centre to centre of cable joints and to the cable ends and will exclude any wastage due to jointing and terminating. The rate shall cover the cost of supplying the cable and the cost of handling, transporting, inspection, laying, pulling through cable ducts, spacing and all other handling during installation including the cutting and testing of cables.

TESTS**Phase Identification and Rotation**

A test shall be conducted on each cable run to determine whether the connection between terminals are correct. Phase rotation on existing systems shall be determined and additions to the existing system shall be of the same phase rotation.

Phasing

At LV terminations where applicable, cable cores will be phased out prior to connection, not only to prove correct phase identification and rotation, but also that no vector group shift exists between the two systems.

All MV Cable terminations will be done by the Electrotechnical Department

Insulation Resistance Testing on LV Cables

The resistance of the insulation of each core to earth and to each other core shall be determined. This test shall be carried out with a 1000 V megger.

Pressure Tests on MV Cables

All MV cables of rated voltage up to 22 000 volt shall be tested in accordance with SANS Method 540 at the appropriated voltages given in Table D -1 of SANS 97.

The following table shall be used as reference for 11 kV earthed cables. Test voltages shall be maintained for 15 minutes. Note that lower test voltages may be prescribed by the Engineer for cables that have already been in service.

- Paper Insulated Cables (6,35/11kV)
Between Conductors 30 kV DC
Conductor to Earth 17,5 kV DC
- XLPE Cable (6,35/11kV)
Conductors to Screen 17,5 kV DC

Test Certificates

Test certificates, in triplicate, shall be completed during and after the tests and handed to the Engineer. Data on test certificates shall include the description of the circuit or cable run together with the following:

- Insulation Resistance (LV Cables)
- Leakage Current (MV Cables)

INSTALLATION OF MINISUBS

GENERAL

Minisubs shall be of the “B” type, with a MV Ring Main Unit and with a transformer size and LV distribution board, metering and streetlighting controls all as specified in the Drawings or by the Engineer.

POSITIONING AND ACCESS

Minisubs shall normally be placed in the road reserve or in a public open space in a position, as indicated by the Drawings and/or by the Engineer, such that the minisub can be accessed at any time for operating or maintenance. Sufficient clearance shall be left all round the minisub so that all doors can be fully opened without obstruction from fences or walls, etc. and so that work on the minisub, such as connecting of cables, can be performed without hindrance from the surroundings.

FOUNDATION PLINTH

The minisub shall be mounted on a permanent foundation plinth, conforming to either of the following constructions, as specified on the standard drawing, which will be supplied by the Engineer, for that particular size and make of minisub:

Brick

- Note 1: Bricks below ground level shall be ROK’s bagged, and where visible above ground level shall be face bricks, pointed.
- Note 2: The horizontal top surface of the plinth shall be screeded with plaster to give a smooth, accurate and level finish, on which the minisub can be placed perpendicularly without gaps showing underneath.

Pre-cast concrete plinth

- Note 1: The plinth shall be cast from concrete with a minimum strength of 20 MPa.
- Note 2: The concrete shall be suitably reinforced with steel weldmesh to prevent cracking or sagging.
- Note 3: The thickness of the concrete shall be a minimum of 300mm.
- Note 4: The cut-outs shall conform to the dimensions given on the Drawing.
- Note 5: The horizontal top surface of the plinth shall have a smooth, accurate and level finish, on which the minisub can be placed perpendicularly without gaps showing underneath.

Compaction

The ground under either of the above types of plinth shall be properly drained, compacted and levelled, before the plinth is placed to ensure that the weight of the plinth and minisub can be comfortably borne without any subsidence. Runoff from any side-slopes shall be directed away from the minisub foundation so as not to undermine it.

MOUNTING

A layer of "Malthoid", cut to size, shall be placed between the horizontal cement top surface of the plinth and the minisub base, to inhibit corrosion.

MV CABLE TERMINATIONS

- Minimum bending radii shall be observed when terminating MV cables into the minisub.
- Cable terminations shall be either by means of compound- filled termination boxes or dry heatshrink or coldshrink termination boxes.
- Methods of Termination, including glanding, earthing, cable identification tags, and RMU labeling, are dealt with separately in these Specifications.

OIL FILLING AND TESTING

The transformer insulating oil shall have been tested by the manufacturer and the voltage withstand certificate shall be available and to the Engineer's satisfaction.

ELECTRICAL PRESSURE TESTING

- Before livening-up, the minisub MV transformer winding and its associated ring main unit and MV cables shall be electrically pressure tested at a DC voltage, and for a duration, prescribed by the Engineer.
- No livening-up shall take place until the pressure testing has been successfully concluded, and the results certified in writing and in the Engineer's possession.

LV COMPARTMENT

- LV Circuit breakers, metering and streetlight control gear shall be supplied by the Employer, either pre-installed in the minisub or to be installed by the Contractor as per the Drawings.
- LV and streetlight cables shall be connected to their respective circuit breakers, as per the Drawings, by the Contractor.
- Termination of LV cables including glanding, earthing, identification tagging and circuit breaker labeling are dealt with separately in these Specifications and shall be done to the satisfaction of the Engineer.

- Earth resistance testing, insulation resistance and phase rotation testing shall be successfully concluded, the results certified in writing and handed to the Engineer, before the Employer will live-up the LV busbars or any LV cables from the minisub.

BACKFILLING AND VERMIN-PROOFING

Upon completion of cable termination and minisub testing, the ground round the outside of the minisub shall be backfilled and properly compacted in layers of 150mm. The ground directly under the openings in the plinth shall be backfilled around the cables and brought up to a level 150mm below the floor of the minisub. The remaining space shall be backfilled with a weak sand/cement mix to floor level such that all openings are sealed against vermin.

INSTALLATION OF BARE CONDUCTOR OVERHEAD LINES**MV BARE CONDUCTOR OVERHEAD LINES****Standards**

MV bare overhead lines shall be constructed in accordance with the SANS 10280 "Code of practice for Overhead Power Lines for Conditions Prevailing in South Africa".

General

MV bare overhead lines within George Municipality shall operate at 11 000V 3-Phase unless otherwise specified. Aluminium alloy conductor and hardware, suitable for coastal conditions, carried on woodpoles shall be used.

Poles and Struts

Woodpoles, only, shall be used, selected from the following range:

- 9m 160-180mm top diameter
- 11m Intermediate 160-180mm top diameter
- 11m Strain 220-200mm top diameter

Holes drilled through poles on site shall be treated with creosote throughout the length of the hole. Poles shall be planted at a depth of 1,8m and backfilled with a mixture of soil and cement, properly compacted in layers of 150mm.

Strut poles shall be installed, where specified, at 35° to the vertical and fastened to the upright with a galvanised steel bracket designed for this purpose. The toe of the strut pole shall bear against a galvanised steel kicker plate buried at least 1,5m deep and backfilled with a mixture of soil and one bag of cement per strut hole, properly compacted in layers of 150mm. An anti-climbing device consisting of 6 turns of barbed wire, with a pitch of 150mm, shall be fastened halfway up the strut with 30mm galvanised staples at 4 staples per turn.

Stays, anchors and flying stays

- Stays shall consist of a length of 7/No.3 galvanised stranded steel wire, a MV stay insulator, 2 - preformed guy grips and a preformed pole-top
- Anchors shall be of the "Platypus 58" type, buried at a depth of at least 1,5m and backfilled with a mixture of soil and one bag of cement per anchor hole, properly compacted in 150mm layers.
- Flying stays, where specified, shall consist of a length of 7/No.3 galvanised stranded steel wire, a MV stay insulator, 2 - preformed guy-grips and 2 - pole-top make-offs.
- Stays shall be looped round the pole at a point where a bolt protrudes or otherwise fastened securely, to prevent slipping down.

Conductors

Aluminium conductor from the following size range shall be specified and supplied by the Employer:

- Fir - 25mm²
- Hazel - 32mm²
- Pine - 38mm²
- Oak - 63mm²
- Mulberry - 80mm²
- Sycamore - 161mm²

Insulators, ties, armouring and vibration dampers

Intermediate insulators: Post type porcelain with Preformed Twin-ties. Post insulators shall be bolted through the pole horizontally in vertical configuration, with adjacent phases on opposite sides of the pole.

Strain insulators: Long-rod type porcelain with pistol-grips shall be hooked to pig-tail bolts, bolted through the pole in vertical configuration.

Through jumpers shall be carried round the pole on pin insulators of the type described above.

Preformed armouring shall be installed at suspension points. Spiral vibration dampers shall be installed on all spans.

Earthwire and bonding

No continuous aerial earthwire.

Insulator pins/bolts in contact with the woodpole shall be bonded together with bare copper wire fastened with 30mm galvanized staples to the pole.

Transformers

Pole transformers will be selected from the following range of sizes and mounting arrangements:

- 16 kVA 1-Phase: 1-pole mounting
- 25 kVA 1-Phase: 1-pole mounting
- 25 kVA 3-Phase: 1-pole mounting
- 50 kVA 3-Phase: 2-pole mounting
- 100kVA 3-Phase: 2-pole mounting
- 200kVA 3-Phase: 3-pole mounting

Galvanised steel pole brackets or cradles to support the transformer shall be bolted through the pole/s with 20mm bolts.

Fuses

Drop-out fuses shall be mounted on horizontal fuse arms bolted through the pole. Fuse cartridge sizes shall be matched to the size of transformer as follows-

- 16kVA 1-Phase: 3A
- 25kVA 1-Phase: 5A
- 16kVA 3-Phase: 2A
- 25kVA 3-Phase: 3A
- 50kVA 3-Phase: 5A
- 100kVA 3-Phase:10A
- 200kVA 3-Phase:20A

- 500kVA 3-Phase:50A
- 800kVA 3-Phase:80A

Surge Arresters

Pole-mounted transformers are normally fitted with their own surge arresters and arcing horns. All MV cables terminating on an overhead line shall be protected against overvoltage spikes by means of a set of 3-phase surge arresters mounted immediately adjacent to the cable tails.

Sectionalizers

Sectionalizers shall be of the "Sector" SF6 insulated type. Operation shall be manually from ground level with the aid of a link stick.

Current and Voltage Transformers

CT's and VT's for mounting in the line, shall be suitable for outdoor coastal conditions. For metering purposes, 2-VT's and 2-CT's only are required for the

2-wattmeter method.

CT's and VT's shall be supported on 2-pole mounting cradle.

Removal of Obsolete Bare Conductor

Obsolete MV and LV Bare Conductor, required to be removed, must be lowered to the ground, measured, coiled, weighed, and supplied with a label indicating the size in mm², the mass in kg, and the length in metres. The redundant conductor, hardware and poles must then be returned to the Municipal Store.

INSTALLATION OF AERIAL BUNDLE CONDUCTOR (ABC)

INSULATED OVERHEAD MV AERIAL BUNDLED CONDUCTOR**Construction of MV ABC:**

The MV ABC shall be made up as follows:

- Three phase – conductors
- One carrier

Strain clamps for MV ABC

- Pole Clamp: Clamps shall be complete with bolts, nuts and washers of hot dip galvanised mild steel and of suitable size to fit the diameter of the pole specified. Clamps that do not require drilling of the poles are preferred.
- Strain Links: Strain links used between the pole clamp and the bundle conductor carrier shall be complete with all D-shackles, bolts, nuts, washers, extension pieces and pistol grip carrier clamps, all hot dip galvanised mild steel, shall be provided.
- Breaking Strength: The complete strain clamp system shall have the following breaking strenghts:
 - 1.For cable mass less than 3,0 kg/m - 55 kN
 - 2.For cable mass greater than 3,0 kg/m - 70 kN
- Double Strain Clamps: Where strain clamps are required at section poles, a suitable double strain clamp assembly shall be used.

Intermediate Clamps for MV ABC

- Pole Clamps: Pole clamps shall comply with the requirements laid down under Clause 6.2 (a). Clamps shall be rated to the conductor mass and shall be reinforced where the mass exceeds 3 kg/m.
- Hangers: Single hangers shall be used for ABC suspension where line deviation is less than 30° from the straight line. Where this deviation increases to 60°, double hangers complete with yokes shall be used. The carrier clamp shall be nylon covered.

For bundle conductors with a mass in excess of 5,0 kg/m a nylon covered support clamp for the phase conductors shall be provided in addition to the carrier clamp. All metal parts of the hanger and clamp shall be hot dip galvanized.

When specified in the Project Specification, the hanger assembly shall be provided with a weak link of 10 kN breaking strength.

Termination of MV ABC

Termination of MV bundle conductors shall be by means of heat shrink materials supplied in kit form and of suitable size for the conductor to be terminated.

The conductor tails shall be covered in the following minimum lengths of heat shrink material:

- 11kV 1 000 mm
- 22kV 1 200 mm

- 33kV 1 200 mm

The heat shrink shrouds and rain covers shall be designed to prevent flash-over in wet or contaminated atmospheres. Outdoor terminations shall be treated against weathering and ultraviolet corrosion.

Through Joints in MV ABC

- Midspan through joints shall only be allowed on conductors of 95mm² or smaller. Through joints in all other cases shall be made at section poles.
- Heat shrink through joints shall be provided in kit form suitable for the conductor size and shall be complete with crimping ferrules and screen bonding strips.
- Through joints for midspan joints shall also include the jointing material for the steel carrier cable. The jointing material shall be suitable to provide a joint of at least equal strength to the carrier. The complete joint shall be protected with a weatherproof sleeve treated against ultraviolet corrosion.
- Where underground copper cable conductors are joined to the bundle conductors, bi-metal ferrules shall be used to join the copper and aluminium conductors.

Removal of Obsolete ABC

Obsolete ABC, required to be removed shall be lowered to the ground, measured, coiled on drums, marked to indicate the conductor size and length. The ABC shall be returned to the Municipal Store together with all redundant hardware and poles.

Pole Mounted Distribution Boxes for LV ABC Lines

Bundle box strapped to pole, fully wired and fitted with the following:

- Clip tray fitted with an average of 4 (for 4 way) and an average of 8 (for 8 way) only Heineman 60 Amp Circuit breakers.
- Fit and terminate one 25 mm² UV stabilized insulated one meter long conductor to neutral bar inside bundle box.
- Fit and terminate 1x25 mm² (for 4 way) and 3 x 25 mm² (for 8 way) UV stabilized insulated one meter long conductors to busbars inside bundle box and interconnect with 16 mm² PVC wire from busbars to circuit breakers.
- Terminate all UV - conductors to aerial bundle conductors by means of TTD connectors. Ensure a balanced load to the 3 phases throughout the system.

- Terminate an average of 4(for 4 way) and 8(for 8 way) x10 mm² or 16 mm² Airdac / Split concentric service connection cables into Bundle box and to circuit breakers, Neutral - and Earth bars.
- Strap set of 1 -8 service connection cables through 3 meter long PVC kicker pipe at 1 meter intervals to pole.
- Stick-on labels will be supplied to be stuck onto each individual circuit breaker to indicate the applicable erf number. Stickers will also be supplied for pole numbering onto the outside of each bundle box

INSTALLATION OF STREETLIGHTS

General

Streetlights are normally mounted on steel poles supplied at 240V by 2 x 10mm² or 4 x 10mm² Cu, PVC insulated, steel wire armoured, underground cable. A continuous 16mm² Hard drawn bare copper earth is run with the supply cable and is bonded to each pole.

Some streetlights are mounted on wood poles, which can be supplied via underground cables or via overhead conductor, carried on the same poles.

Planting Depth

Tubular steel poles, used to support luminaires, shall be planted at the following depths:

Mounting Height	Pole Type	Outreach	Planting Depth Meter
4	Post-top	-	1
8	Outreach	single	1.5
8	Outreach	double	1.5
10	Outreach	single	1.6
10	Outreach	double	1.6

Wooden poles, used to support luminaires only, shall be planted at 1.5m depth.

Anti-corrosion Paint

- At least 36 hours before planting, hot-dipped galvanized steel poles shall be painted as follows: -

- Thoroughly clean the base-plate and attachment hooks as well as the portion of the pole to be buried plus an additional 400mm above ground level, with Plascon galvanized iron cleaner.
- Apply an undercoat coat of Sigmacover 280 Black paint to at least microns thickness and allow to dry for 12 hours.
- Apply a final coat of Sigmacover 300 black paint to at least microns thickness and allow to dry for 24 hours.
- **N.B. The Tenderer is responsible for the cost of supplying the galvanized iron cleaner, anti-corrosion paint, brushes, etc. Recovery of these costs must be covered by, and included in, the appropriate rate which he tenders for planting the various types of streetlight pole.**

Fitting of Circuit Breaker and wiring

Steel Poles

A 5A Single Pole 5kA Circuit breaker shall be fitted in the inspection chamber at ground level on each steel pole. Red, Green and Black 1,5mm² PVC insulated copper wire shall be run inside the length of the pole and connected between the luminaire and the underground supply cable and earth inside the inspection chamber. Underground supply cables shall be properly glanded to the gland-plate provided inside the inspection chamber and the armouring earthed to the earth stud provided. Connections between supply cables and the pole wiring shall be made with crimped ferrules, taped with insulation tape in the appropriate colour.

Wood Poles with underground cable supply

The underground supply cable shall be looped in and out of a Pratley No.1 connection box fixed to the pole 3m above ground level and protected with 50mm diameter galvanized conduit pipe, extending from the box to 300mm below ground level. A single 6mm² Cu PVC insulated, armoured cable shall be connected between the Pratley connection box and the luminaire, terminating on a 5A single Pole 5kA circuit breaker housed therein. The armouring shall be connected to the earth stud provided in the luminaire

Wood Poles with overhead supply

The circuit breaker in the luminaire shall be tee-connected to the overhead supply using 1.5mm² Red and Black PVC insulated copper wire.

Earthing of Steel Street Light poles

A continuous hard drawn bare copper 16mm² earth wire shall be buried with the 10mm² Cu underground supply cable between steel streetlighting poles. The earthwire shall be terminated

inside the pole using a crimped tinned brass lug bolted to the earth stud provided inside the inspection chamber.

Pole Mounted Streetlight Panel

Meter box bolted to pole, fully wired and fitted with the following equipment:

Single Phase:

- Single Phase Kilowatt-hour meter
- Three Phase 60A Contactor
- Ripple Relay
- By-pass Switch
- 1 x 60A 5 kA Circuit Breaker
- 1 to 3 x 40A 5 kA Circuit Breakers

Three Phase:

- Three Phase Kilowatt-hour meter
- Three Phase 60A Contactor
- Ripple Relay
- By-pass Switch
- 1 x 60A triple pole 5 kA Circuit Breaker
- x 40A 5 kA Circuit Breakers

INSTALLATION OF EARTHING

SCOPE

This Specification covers the material, methods and installation requirements for the earthing of equipment and accessories normally associated with electrical distribution networks.

APPLICABLE STANDARDS

The latest edition of the following publications, drawings and documents are referred to herein:

- SANS 10142: Wiring of Premises
- AMEU: Code of Practice for the neutral earthing of low voltage distribution systems.

- SANS 1063: Earth Rods

DEFINITIONS

The meaning of certain word or terms used in this Specification:

Earth Continuity Conductor: An electrical conductor, copper or other similar approved metal of sufficient cross-sectional area to ensure the immediate safe discharge of electrical energy to the general mass of earth.

Earth Conductor, Earth Wire: Generally accepted terms for earth continuity conductor.

Earth Point: The creation of a direct bond between the mass and the earthing network of a system to be earthed. This may consist of earth spike(s) or earth mat(s) or a combination of both driven in or laid at a sufficient depth to make contact with earth formations of low resistivity in order to safely discharge electrical energy.

Earth Spike: A metal rod driven into the ground to create an earth point. An earth spike may also consist of a number of separate lengths mechanically coupled to form a unit.

Trench Earthing: A section of bare conductor buried in the ground at a minimum depth of 750 mm and of sufficient length to obtain the required resistance.

Earthing Electrode: A conductor buried or driven into the ground to make contact with the earth mass. This term includes earth spikes, mats and trench earthing.

Earth Bar: A length of copper brass bar of suitable or specified dimensions and cross sectional area and having sufficient connection points for the mechanical connection of earth conductors by means of bolts, nuts or screws, as the case may be.

Earth Bonding: A copper-to-copper joint utilizing "Silbraloy" welding rods.

ABBREVIATIONS

The following abbreviations shall apply:

- EC: Earth Conductor
- EB: Earth Bar
- ES: Earth Spike
- ECC: Earth Continuity Conductor
- BCEC: Bare Copper Earth Conductor

MATERIAL

CONDUCTORS

- Underground Distribution Networks

Only materials manufactured from, or combined with, electrolytic copper shall be used on the earthing systems of underground reticulation and internal wiring. BCEC serving as trench earthing shall be hard drawn copper.

- Overhead Distribution Systems

Where earth conductors of overhead systems are required to be of materials other than copper, they shall be manufactured in accordance with the Employer's Specification.

The materials may be steel reinforced aluminium alloy or galvanized steel wire.

CONNECTIONS

Connections to the earth stud or earth bar shall be made with brass bolts, nuts and washers or alternatively with stainless steel accessories. Connections to equipment housed indoors may be made with cadmium plated accessories. However, cadmium plated accessories may not be used on equipment such as kiosks, mini substations etc.

EARTH SPIKES

Category and Type

Earth spikes shall be of the following types:

- Solid copper
- Solid stainless steel
- Solid steel core covered with copper of minimum thickness of 200 micron, similar or equal to Copper weld.

Earth spikes shall be round in cross-section and the total length shall be achieved by the joining of standard sections. Spikes shall have a nominal diameter of 16mm, except where spikes are placed into pre-drilled holes in which case a nominal diameter of 12mm will be accepted.

Earth spikes shall comply to the requirements of SANS 1063.

Couplings:

The coupling of lengths shall be achieved by means of screw-on type couplings. The couplings shall be mechanically strong enough to allow the normal driving in of coupled lengths and shall provide sound electrical connections.

Clamps:

Conductor clamps shall suit the type of earth spike, conductor material and size specified.

Driving caps of nuts:

Driving caps of nuts shall be screwed onto the spike to protect the spike end during driving.

INSTALLATION

GENERAL

Trench Earths: Trench earths shall consist of sections of hard drawn bare copper conductors laid in trenches with MV or LV cables or in separate trenches at a depth of 750 mm below finished ground level.

Trench earths shall be a minimum length of 25 m except where the distance between kiosks or other equipment is less than 50 m in which case the trench earth shall be installed from kiosk to kiosk. Trench earths shall be installed in the trenches nearest to the substations.

The following standard earth conductor sizes shall be used in conjunctions with LV cables:

SIZE IN mm ²	CABLES	
EARTH CONDUCTOR	AL	CU
16	35, 50	10, 16
32	70, 95	25, 35, 50
64	120, 150, 185	70, 95, 120
80	240	150 plus

Trench earths shall be installed as earthing for the following installations:

- For neutral earthing of transformers
- LV distribution boards in substations
- Distribution-/Meter kiosks
- Service connections
- All electrical equipment with metal enclosures (streetlight poles, robot poles, etc.) installed in public places.
- Overhead line equipment.

Spike Earth:

Spike earths shall consist of a single earth spike or coupled lengths of the total length to require the specified resistance. The spike shall be driven into the ground until the top end of the spike is at a depth of 600 mm below ground level.

The conductor clamp shall be suitable for clamping conductors with a total effective cross sectional area of up to 100 mm². All connections to earth spikes shall be clamped and then brazed. The connection shall be painted to an approved standard after all excess flux has been removed.

A marker or earthing manhole shall be placed above the earth spike if so required. The earthing manhole shall have a removable concrete lid and shall be approximately 350 mm high, 460 mm long and 460 mm wide, similar or equal to the manhole manufactured by Messrs Cape Concrete. In addition the Contractor shall supply and install a 110 mm outside diameter Class 4 PVC pipe, 300 mm long, over all earth spikes such that the connection to the earth spike is visible.

The earthing manhole shall be installed over this pipe, flush with finished ground level.

Should hard rock formations be encountered, it may be necessary to drill holes to position earthen spikes. The hole shall have a diameter large enough to accommodate the earth spike and coupling without the latter occupying more than 50% of the volume of the hole. The hole shall be filled with a carbon coke/soil mixture (50/50) during and after the installation of the spike. The length of spike and therefore the depth of the hole shall be as required by the Employer.

Pole Base Earths

Pole base earths shall consist of hard drawn copper earth conductor installed against the pole, with the conductor coiled not less than four times around the buried section of the pole and stapled in position. The conductor shall be protected by 50 mm diameter Class 12 PVC pipe from 300 mm below ground level to 3 m above ground level. The pipe and conductor shall be fixed to the pole by means of stainless steel strapping spaced at 600 mm intervals.

The size of the earth conductor shall be 80 mm² for MV earth systems of 64 mm² for LV earth systems.

Ohmic values of earthing resistances

The required maximum ohmic values of the resistance to earth of certain systems or points are as follows:

- Transformer neutrals 1 to 2 ohm
- MV Switchgear (indoor or outdoor) 2 ohm
- MV Pole-mounted equipment and surge arrestors 3 ohm
- LV Distribution neutral at kiosks or on overhead lines (start and end points) 7,5 ohm

- Consumer installations 7,5 ohm

INTERCONNECTION OF VARIOUS EARTH SYSTEMS

- Surge Arrestor Earths: The earth system of surge arrestors shall always be separated from any other system.
- MV and LV Earth Systems: These systems shall only be interconnected if the individual earth resistance is in the order of 1 ohm or less.

SUBSTATIONS

Transformers on Bases or Poles, MV and LV Windings (11kV/400 V)

- Earth Points: Separate earth points shall be created for MV and LV systems, except where individual resistance to earth are found to be 1 ohm or less in which case only one earth point may be utilized. The earth point shall consist of two separate 64mm² trench earths, 750mm deep with a minimum length of 25m laid in opposite directions. MV and LV earth points shall be separated by a minimum distance of 6 m should both earth types be necessary.
- Connections: All connections between equipment and earth points shall be done in 70 mm² green PVC insulated stranded copper. The connection between the transformer neutral and the neutral bar in the LV distribution box or distribution board shall be effected by means of the fourth core of the multicore cable connecting the transformer to the LV distribution system or by means of the neutral conductor where single core cables are employed.

A 70mm² copper conductor shall connect the neutral bar to the earth bar in the box or distribution board.

Connections between the earth bar in the box or distribution board and to the neutral conductor of LV overhead installations shall be effected by means of 50mm² green PVC insulated stranded copper conductors.

Mini substations

The earthing of mini substations shall comply with the requirements for transformers on bases as stated above. All metal parts of the various compartments shall be bonded by means of 70mm² bare copper conductors and connected to the MV earth system

Fence Earths

- Earth Conductors and Spikes: A 16mm² copper earth conductor shall be buried at a depth of 750mm and at a distance of 1 m outside the fence for the full circumference of

this fence. Earth spikes shall be installed at each corner and connected to the abovementioned earth conductor.

- Installation: Vertical earth conductors shall be installed on the fence at all corner and gate posts and at intervals of 20m. These vertical conductors shall be solidly bonded to the straining and barbed wire by means of binding wire. 16mm² Copper conductors shall be used (or Mosquito aluminium conductor aluminium fences)
- Connections: The vertical copper conductors shall be connected to the surrounding trench earth by coiling them 4 times around the trench earth conductor and then brazing. Aluminium conductors shall be connected by means of bi-metal clamps. Aluminium conductors shall not be buried and copper connectors shall be used to connect underground conductors to the aluminium conductors on the fence earths.
- Gates: Gates shall be connected to the earth systems by means of braided copper wire, bolted to the gate frame and bonded to the vertical copper of aluminium fence earths.

MV SWITCHGEAR

- Earth Bar: A tinned pre-drilled copper busbar (1000mm x 40mm x 5mm) shall be mounted on isolators against the back wall of the concrete cable trench. All earth conductors from installed equipment and from earth systems shall be connected to this bar by means of brass or stainless-steel bolts and nuts.
- Connections: Connections between the equipment and the earth bar shall be by means of 120mm² green PVC insulated copper connections with crimped cable lugs. A minimum of two connections to the earth bar shall be utilized per switchgear installation.

CABLE NETWORKS

- Armouring of LV Cables

The cable armouring shall be bonded to the earth busbar or earth stud at all terminations. Where cables are terminated on gland plates, the plates shall be connected to the earth system, and the cable armouring shall then be deemed to be earth.

Where cables are not terminated with glands, enough cable armouring wires shall be grouped together to fit tightly into a cable lug. After the lug has been crimped it shall be bolted to the earth system. A cable lug of 16mm² minimum shall be used for cables up to 50mm² and 25mm² minimum for cables larger than 50mm². At LV overhead line connections, the cable armouring shall be connected to the neutral conductor by means of a suitable clamp.

- Meter and Distribution Kiosks

Meter and distribution kiosks shall be supplied complete with a connection between the neutral bar and earth bar or stud. Earthing systems, whether spike or trench earths, shall be bolted to the earth stud or bar utilizing crimp lugs and stainless steel or brass nuts and washers.

OVERHEAD NETWORKS:

Connectors

The AMPACT Power Connector System, must be used for all overhead line connections, unless otherwise stated by the Directorate: Electrical Engineering Services or in the project or contract documentation.

- Earthing of the Neutral Conductor on LV Overhead Systems (Also Refer C[a])

The neutral conductor of LV overhead systems shall be earthed at both ends of the line. The method of earthing shall be spike, trench or pole base earthing as required.

When MV earth systems appear on the same pole, the LV earth system shall be connected to the neutral conductor by means of green PVC insulated conductors and LV and MV earth system points shall be separated by a minimum of 6m.

The connecting conductor size shall be a minimum of 50mm² for PVC insulated conductors and 32mm² the case of hard drawn copper conductors.

- Earthing of MV Equipment on Overhead Networks

1.General: MV earthing shall be carried out with 64mm² bare copper. Where MV and LV earthing appear on the same pole or poles, insulated conductors shall be used and LV and MV system points shall be separated by at least 6m.

2.Surge Arrestors: Surge arrestors shall be connected to a dedicated earth system point via a 64mm² bare copper conductors. Only one conductor is required per set of surge arrestors.

3.Operator Earths: An earth mat shall be installed at the operating position of outdoor switchgear. The earth mat shall measure 1m x 1m and shall be manufactured of 20mm x 3mm copper strips to form a mesh size of 200mm. The mat shall be buried at a depth of 150mm below the operating position and connected to the operating handle by means of two 70mm² green PVC insulated conductors.

4.Earth Connections: All earth points or steel work of MV equipment, including support steel work on MV poles, shall be bonded with 64 mm² conductor (refer i) and connected to the MV earth system. Exceptions are surge arrestor earthing and operator earthing which are not connected to MV earth systems, but to the dedicated earth systems described above.

Any poles(s) bearing the following equipment or combination thereof shall be provided with a MV earth system.

- Transformer
- Instrument or measuring transformer
- Air break switches
- Single pole isolating links
- Drop out fuses
- MV cable ends
- oil switches, auto reclosers or sectionalizes.

Binding and Protection of Earth Conductors

Earth conductors shall be installed against poles in galvanised steel pipe or Class 12 PVC pipe, to SANS 966.

The pipe protection shall start 300mm below finished ground level and end 3m above ground level. The pipe with the conductor shall be strapped to the pole at intervals of 600mm using stainless steel strapping. The Contractors shall ensure that earth systems are kept separate, and that MV and LV or MV and surge arrestor earths are not short-circuited by the strapping.

SERVICE CONNECTIONS

Trench Earths

Hard drawn bare copper earth conductors shall be installed in cable trenches together with service connection cables. The earth conductor shall have a minimum size of 16mm² and a minimum length of 25m, the earth conductor shall be bonded to the main distributions earth conductor. All bonding must be done by means of copper to copper (Silbraloy) welding rods.

Connections

Earth conductors installed with service connection cables shall be connected to the system neutral at the consumer's supply point. The Contractor shall acquaint himself with the system in use by the Supply Authority and do connections accordingly.

STREETLIGHT AND HIGH MASTS

Streetlights

Cable installations:

Where streetlights are supplied via underground cables, the armouring shall be connected to the streetlight earth terminal. The armouring of the various cable runs shall be bonded at all connection points to create a continuous earth.

The armouring of cables shall be connected to LV earth systems at substations and distribution boxes.

Where steel poles are employed, a 16mm² BCEC trench earth conductor shall be installed and connected to the street pole earth terminal. The earth- and neutral terminals shall not be interconnected.

Overhead Networks:

The earth terminal of the street light fitting as well as the metal parts of the street light arm shall be connected to the neutral conductor by means of a separate 6mm² bare copper earth conductor. The earth terminal and the neutral terminal shall not be interconnected inside the light fitting. The same method shall be used where bundle conductor systems are employed.

High Mast Lighting

Mast Earthing: Unless stated otherwise, at least 15m of 64mm² hard drawn bare copper earth conductor shall be placed at the bottom of the excavations for the high mast base. Prior to the earthing of the concrete base the earth conductor shall be covered with a 150mm layer of soil to prevent the copper conductor from touching the concrete.

Trench Earth Conductor: The trench earth conductor shall be installed with the supply cable(s) and bonded to the earth stud.

Special Measures: Due to the height of the masts and the increased possibility of a lightning strike, special earthing measures may be required. Additional earthing systems shall be supplied according to the requirements as instructed by the Employer.

Temporary streetlights for Informal Housing Projects

Due to financial constraints there are informal housing projects where wooden poles for 11 000/400 Volt reticulation are planted in permanent positions and fitted with permanent Streetlight fittings supplied electrically via temporary 10 mm² Airdac cable. This unit rate refers to the removal of the temporary Airdac cable as well as the strain clamps. The approximately 70 metres spaced streetlights must be disconnected from the Airdac.

The Airdac must be lowered to the ground, measured, coiled and supplied with a label indicating the length in metres. The cable and strain clamps must then be returned to the Municipal Stores to be booked back as Stores Stock.

MEASUREMENT OF EARTH RESISTANCE:

Measurement

Earth resistance shall be measured in accordance with the four electrode bridge method, i.e. according to the Schlumberger or Wenner principles. The Contractor shall provide the necessary test equipment and demonstrate the test methods to the Employer so that the Employer can satisfy himself that the tests are being conducted correctly.

Records:

Resistance measurements shall be performed at all earth points, i.e. at any apparatus or equipment connected to the earthing systems. The Contractor shall record all measurements in detail and present these to the Engineer for approval. The Employer reserves the right to have any 10% measurement repeated without additional payment, in order to establish their authenticity.

TESTS

The Contractor shall measure the resistance to earth of each earth system with the earth bar or earth point as reference. The Engineer shall be notified if the specified minimum values of earth resistance are exceeded or cannot be obtained.

LABELING

All project labeling must be performed according to plans, and/or engineer's orders and prescriptions. All labeling materials will be supplied by the Engineer. Claims for installation of labels must be claimed under "Dayworks Labour" rates in the Bill of Quantities and must be negotiated with the Electrotechnical Department beforehand.

TRANSPORT CLAIMS

Tenderers must allow for and include, in each installation rate, an amount which will cover their cost of transportation of labour, equipment and material within a radius of 50 kilometers around the Electrical Engineering Directorate building in Brick Road, George Industria, and measured along the shortest acceptable road route to the work site.

Material supplied by George Municipality must normally be collected either at the municipal stores in Mitchell Street or at the offices of the Electrical Engineer in Brick Street.

Tenderers will not be entitled to claim any kilometers traveled for transportation of labour, equipment and material, or for empty vehicle kilometers traveled outside the greater George municipal area of George, Wilderness, Pacaltsdorp and Herold's Bay.

Additional transport claims will therefore only be paid for kilometers traveled more than 100 kilometers (return trips) subject to the above conditions.

Unnecessary trips won't be paid for. All transport claims must be accompanied by a completed **Logsheets**. This Logsheets will be supplied by the Employer and will give detail information on the following:

Type of vehicle; Vehicle Registration Number; Name of Driver; Date;

Start and Stop Address; Start and Stop Time; Start and Stop Odometer reading; Reason for trip.

Transport rates submitted in the Bill of Quantities will always apply. If municipal vehicles and operators are used, the Contractor will have to hire these at municipal rates and claim at Contractor's rates, even if it is at a loss to the Contractor.

AS BUILT PROJECT FILES

As built project files must be submitted with each final claim. Claims won't be approved without receipt of this document.

GEORGE MUNICIPALITY

DIRECTORATE: ELECTRICAL ENGINEERING SERVICES

TENDER NUMBER: GMT014/24-25

**TENDER FOR TENDER FOR APPOINTMENT OF CONTRACTORS FOR
THE EXECUTION OF CAPITAL PROJECTS, AS AND WHEN REQUIRED
M FROM DATE OF APPOINTMENT UNTIL 30 JUNE 2029**

Site Information (Part C4)

The sites shall be within the distribution area of the greater George, Wilderness, Pacaltsdorp, Herold's Bay, Harlem and Uniondale and identified as per the individual projects.

GEORGE MUNICIPALITY

DIRECTORATE: ELECTRICAL ENGINEERING SERVICES

TENDER NUMBER: GMT014/24-25

**TENDER FOR TENDER FOR APPOINTMENT OF CONTRACTORS FOR
THE EXECUTION OF CAPITAL PROJECTS, AS AND WHEN REQUIRED
M FROM DATE OF APPOINTMENT UNTIL 30 JUNE 2029**

Drawings (Part C5)

Refer to Annexure A attached.

Annexure A

1 2 3 4 5 6 7 8

A

B

C

D

E

F

A

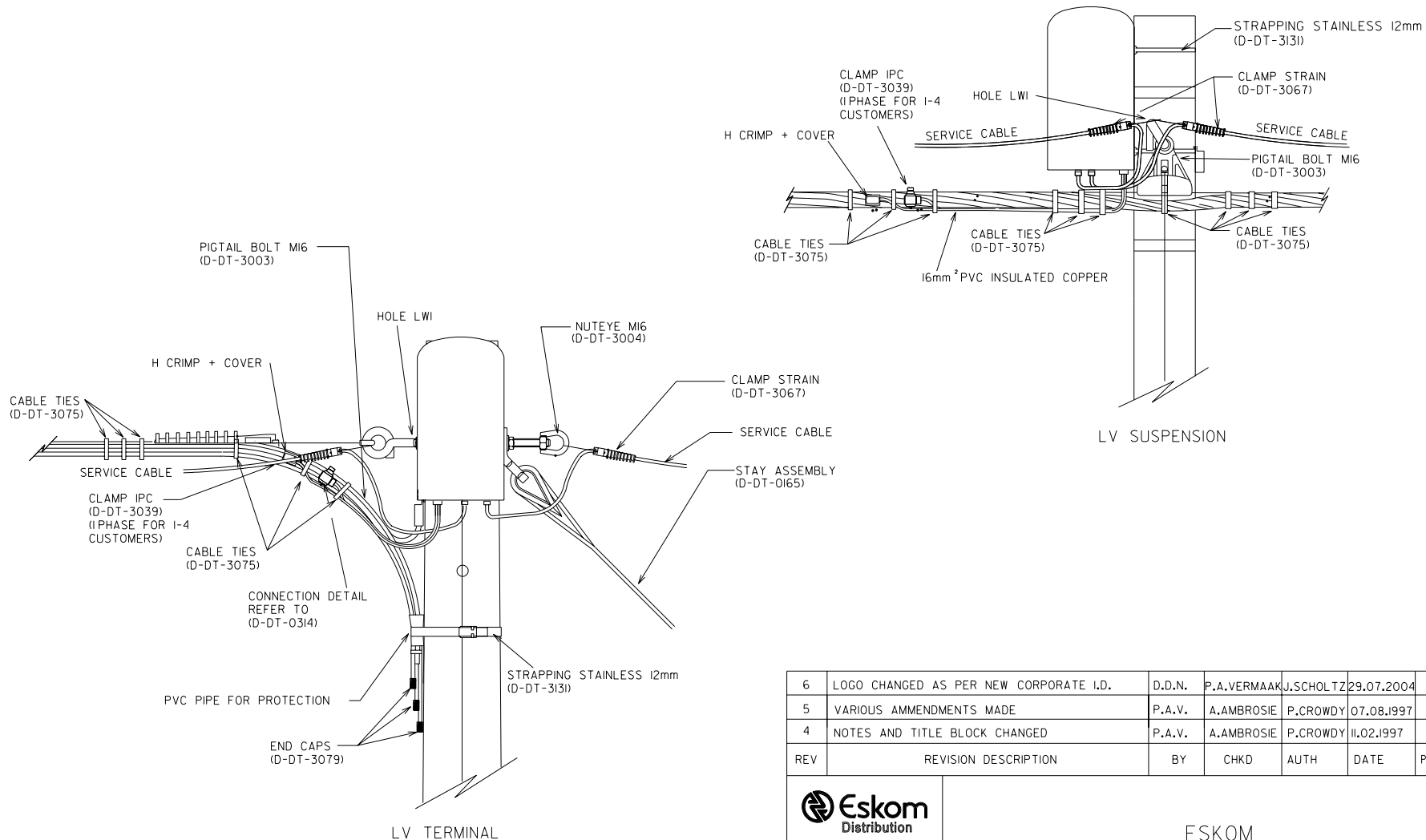
B

C

D

E

F



6	LOGO CHANGED AS PER NEW CORPORATE I.D.	D.D.N.	P.A.VERMAAK	J.SCHOLTZ	29.07.2004	
5	VARIOUS AMMENDMENTS MADE	P.A.V.	A.AMBROSIE	P.CROWDY	07.08.1997	
4	NOTES AND TITLE BLOCK CHANGED	P.A.V.	A.AMBROSIE	P.CROWDY	11.02.1997	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.



AUTH: S.A.CILLIERS

DATE: 10.01.1994

CHKD: N.J.V.R

DATE: 01.03.1993

DRAWN: E.C.R.
S.T.POOK

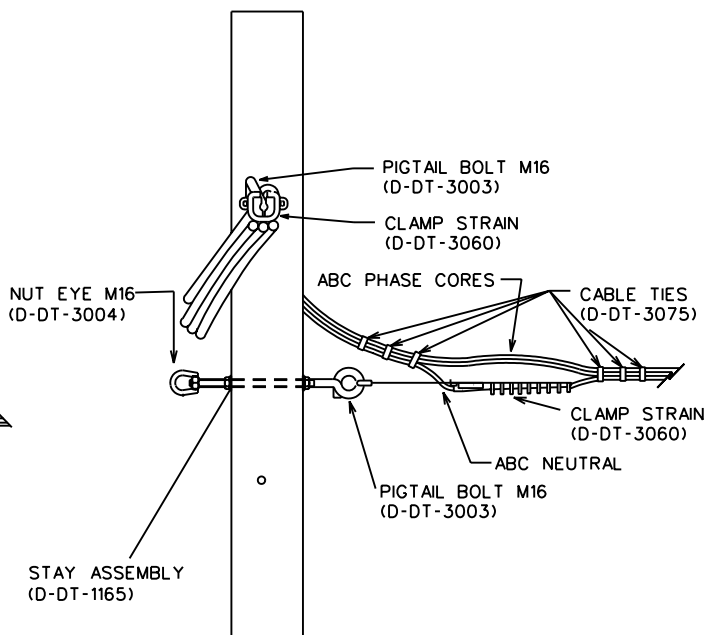
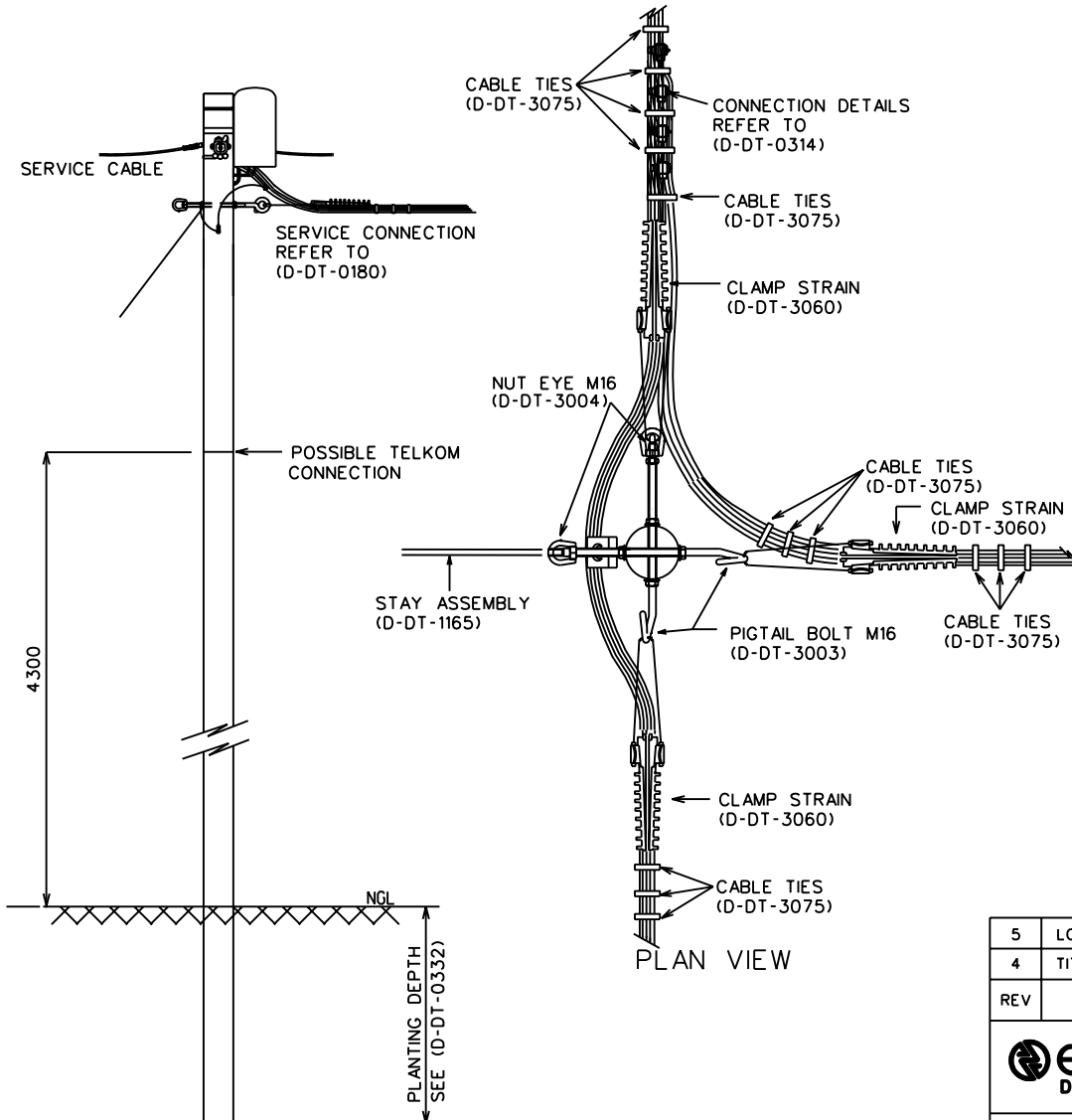
DATE: 29.09.1991

ESKOM
LV/SERVICE RETICULATION
SERVICE DISTRIBUTION BOX
(A.B.C. SYSTEM)

D-DT-0180

SET	SHEET	REVISION
1	1	6

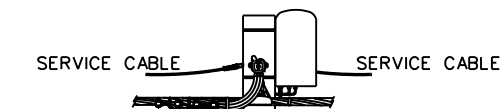
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NOTE :

1. EARTHING REQUIREMENTS SEE PART 2.
2. IF DOUBLE ABC BUNDLES ARE USED - INSTALL MV STAYS (D-DT-1265)

5	LOGO CHANGED AS PER CORPORATE ID	M.T.M.	P.A.V.	J.SCHOLTZ	06.08.04		
4	TITLE CHANGED	CADNET	I.A.F.	I.A.F.	07/07/97		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.	
		LV RETICULATION THREE PHASE ABC BARE NEUTRAL T-OFF ASSEMBLY FROM STRAIN WOOD POLE					
AUTH: S.A. CILLIERS							
DATE: 10/01/1994							
CHKD: N.J.V.R.							
DATE: 05/03/1993		D-DT-1142			SET	SHEET	REVISION
DRAWN: DT H.J.V.M.					1	1	5
DATE: 08/02/1993							



SERVICE CONNECTION
REFER TO
(D-DT-0180)

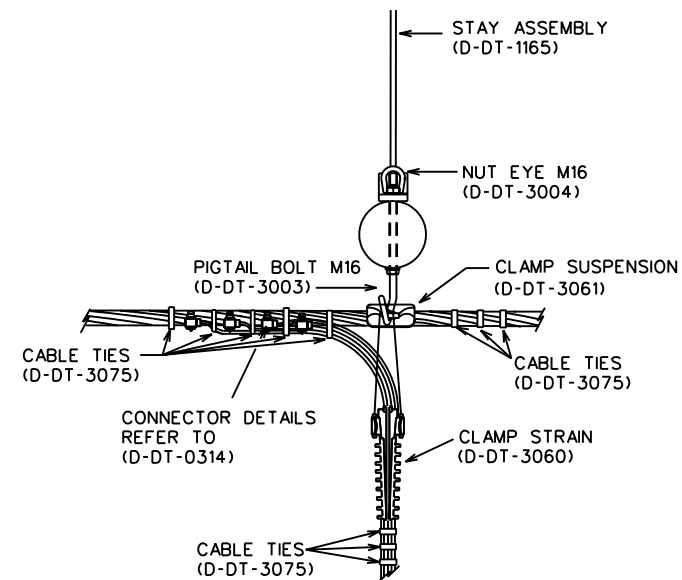
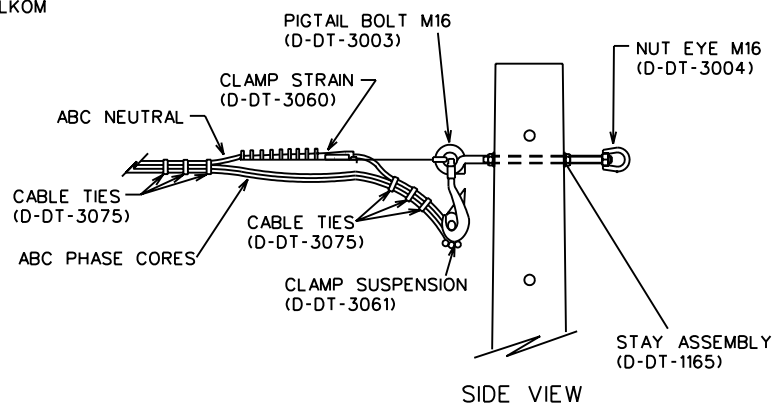
POSSIBLE TELKOM
CONNECTION

4300

PLANTING DEPTH
SEE (D-DT-0332)

NGL

T-OFF



NOTE :

1. EARTHING REQUIREMENTS
SEE PART 2.
2. IF DOUBLE BUNDLES ARE
USED - INSTALL MV STAYS
(D-DT-1265)

5	LOGO CHANGED AS PER CORPORATE ID	M.T.M.	P.A.V.	J.SCHOLTZ	06.08.04	
4	TITLE CHANGED	CADNET	I.A.F.	I.A.F.	07/07/97	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.
		LV RETICULATION THREE PHASE BARE NEUTRAL ABC T-OFF ASSEMBLY FROM INTERMEDIATE WOOD POLE				
AUTH: S.A. CILLIERS		D-DT-1140		SET	SHEET	REVISION
DATE: 10/01/1994				1	1	5
CHKD: N.J.V.R.						
DATE: 05/03/1995						
DRAWN: DT H.J.V.R.						
DATE: 08/02/1993						

A

A

B

B

C

C

D

D

E

E

F

F

SOURCE

LOAD

①

②

EQUIPMENT

2x701
TIE STRAPS

450

50 400 400 400 50

NOTE :

1. MAXIMUM UNSUPPORTED JUMPER LENGTH 3000.

2. COVERED JUMPERS TO BE USED.

REF	DESCRIPTION	DRAWING NO.
1	FUSE-CUT/OUT ASSEMBLY OR DISCONNECTOR ASSEMBLY	(D-DT-0291 OR D-DT-0292)
2	1300 STEEL CROSSARM ASSEMBLY	(D-DT-0319)

1	DISCONNECTOR ASSEMBLY ADDED TO SCHEDULE	P.A.V.	R.THERON	R.THERON	09.02.04	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.



AUTH: B.BRANFIELD

DATE: 13.01.1999

CHKD: B.BRANFIELD

DATE: 13.01.1999

DRAWN: P.A.VERMAAK

DATE: 08.10.1998

SECTION / EQUIPMENT LINKS
CUT/OUT OR DISCONNECTORS
1300 STEEL CROSSARM/SINGLE POLE

D-DT-1850

SET

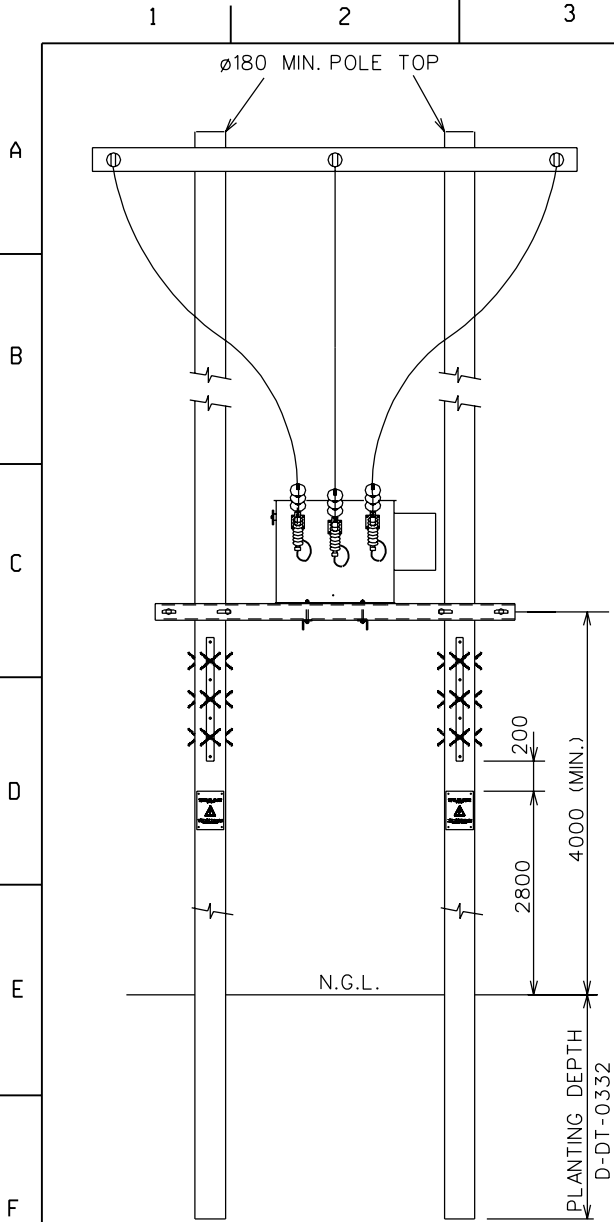
SHEET

REVISION

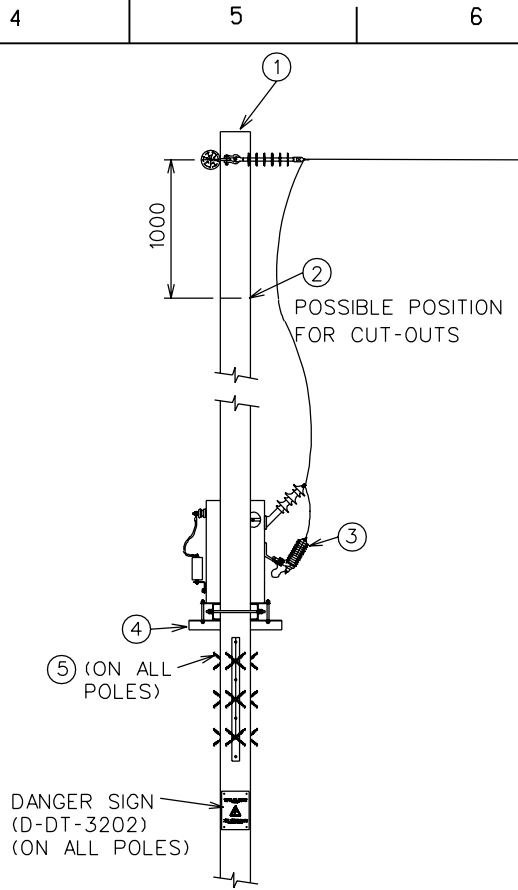
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1

1



FRONT VIEW

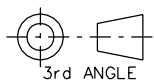


RIGHT VIEW

DANGER SIGN
(D-DT-3202)
(ON ALL POLES)

⑤ (ON ALL
POLES)

POSSIBLE POSITION
FOR CUT-OUTS



3rd ANGLE

REFERENCE DRAWINGS		
ITEM	DESCRIPTION	DWG NO
STRUCTURES		
1	H - POLES	D-DT-1763 TO D-DT-1769
EQUIPMENT ATTACHMENTS		
2	-EQUIPMENT LINKS	D-DT-1851 D-DT-1874
3	-SURGE ARRESTERS	D-DT-0261
4	-EQUIPMENT MOUNTING PLATFORM	D-DT-0271
5	-ANTI-CLIMBING DEVICE	D-DT-0399
EQUIPMENT EARTHING		
	-TRANSFORMER PLATFORM MOUNTED - EARTHING DETAIL	D-DT-1861 (Sheet 2)

NOTE :

1. THIS IS SUITABLE FOR ANY H-POLE STRUCTURE.
2. JUMPERS TO BE COVERED CONDUCTOR.
3. MAXIMUM PERMISSABLE LOAD ON TRANSFORMER PLATFORM = 1700kg.

2	VARIOUS CHANGED DONE, ANTI-CLIMBING AND DANGER SIGNS ADDED	P.A.V.	R.THERON	R.THERON	06.06.2003	
1	SA CONNECTIONS MODIFIED	P.A.V.	R.THERON	P.CROWDY	06.12.2000	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.

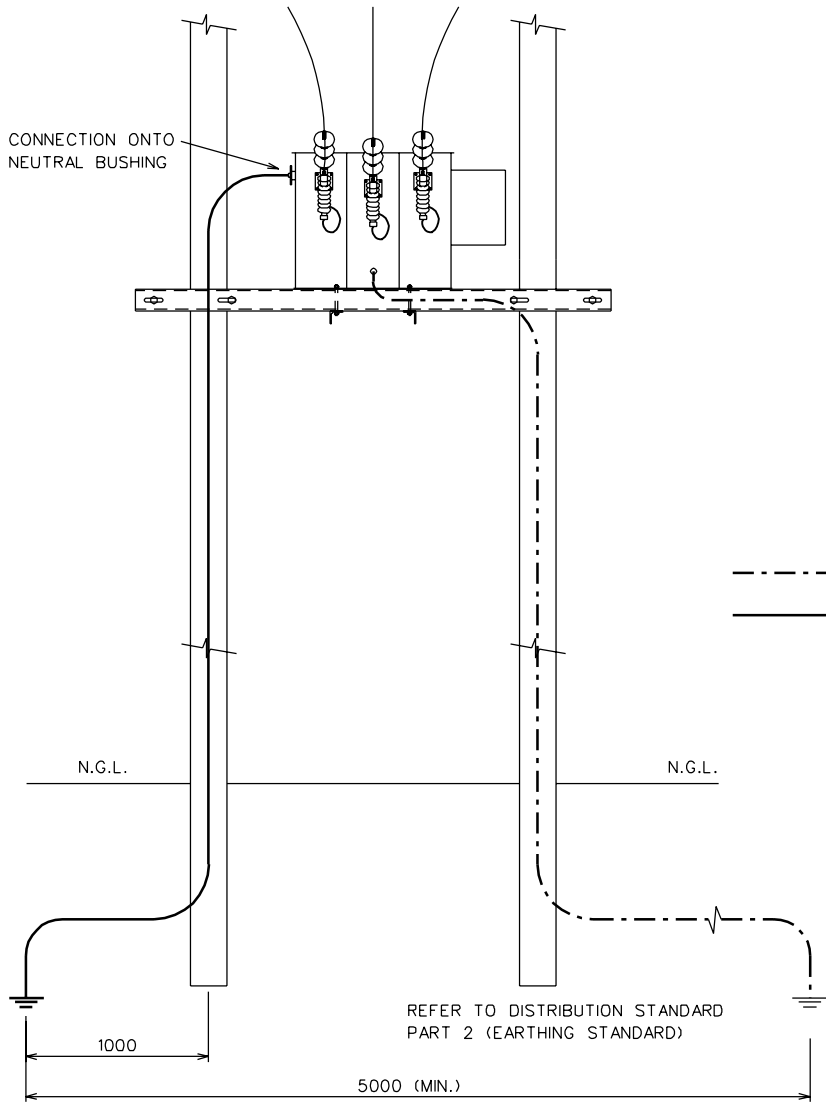


AUTH: B. BRANFIELD
DATE: 13/01/1999
CHKD: B. BRANFIELD
DATE: 13/01/1999
DRAWN: P. VERMAAK
DATE: 23/06/1998

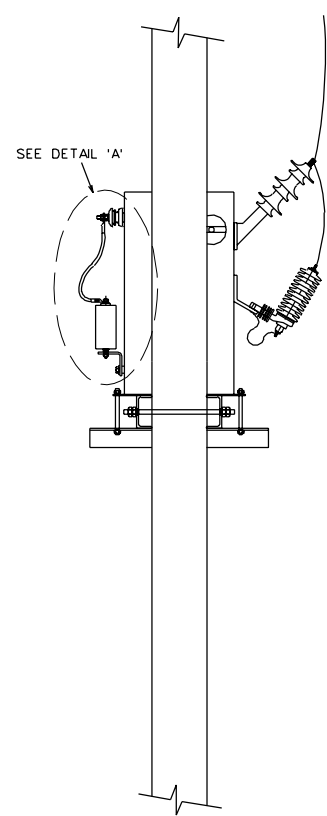
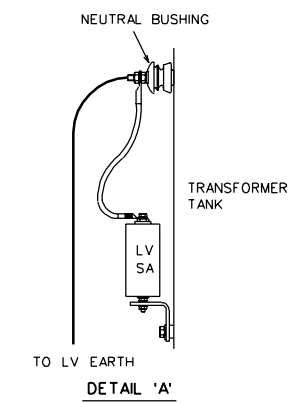
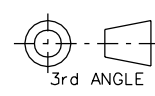
MV RETICULATION
TRANSFORMER 100 - 200kVA
2-POLE PLATFORM MOUNTED (H-POLE)
GENERAL ARRANGEMENT

D-DT-1861

SET	SHEET	REVISION
2	1	2



FRONT VIEW

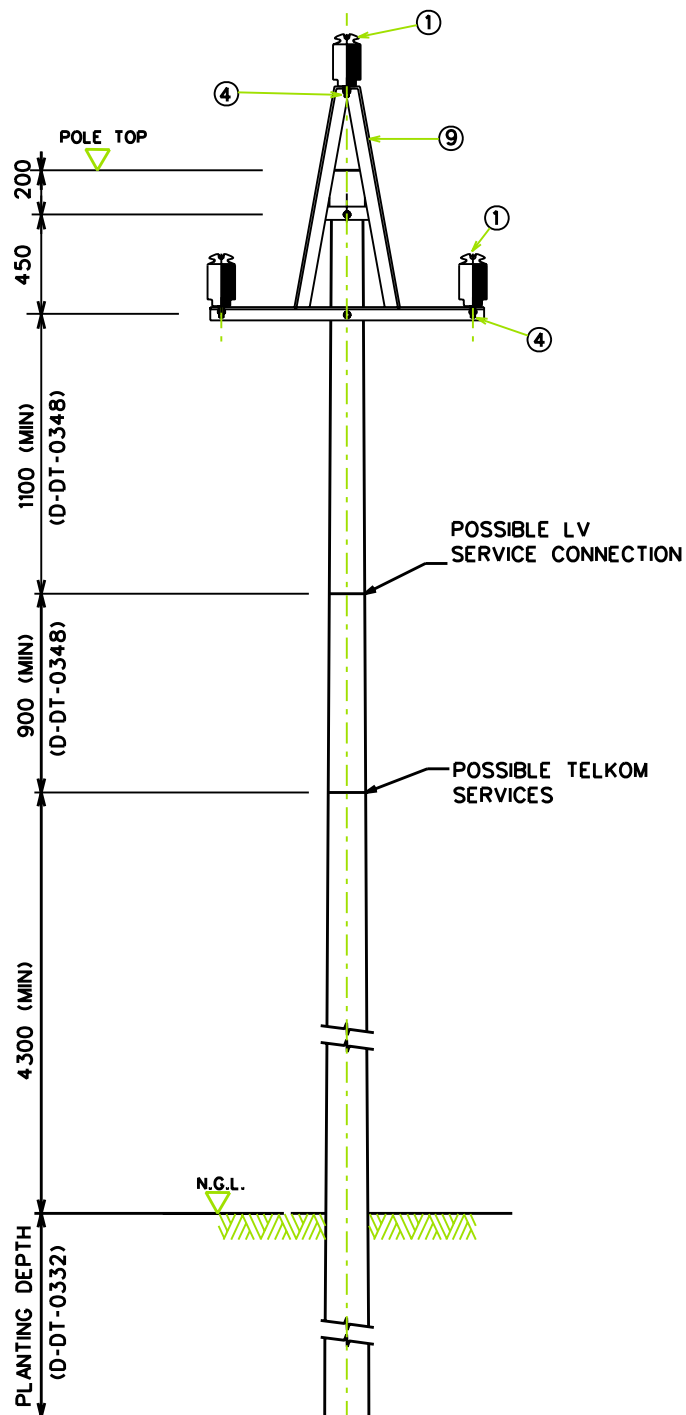


RIGHT VIEW

2	VARIOUS CHANGED DONE, ANTI-CLIMBING AND DANGER SIGNS ADDED	P.A.V.	R.THERON	R.THERON	06.06.2003	
1	SA CONNECTIONS MODIFIED	P.A.V.	R.THERON	P.CROWDY	06.12.2000	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.

AUTH: B. BRANFIELD	
DATE: 13/01/1999	
CHKD: B. BRANFIELD	
DATE: 13/01/1999	
DRAWN: P. VERMAAK	
DATE: 23/06/1998	

MV RETICULATION TRANSFORMER 100 - 200kVA 2-POLE PLATFORM MOUNTED (H-POLE) EARTHING DETAILS			
D-DT-1861	SET	SHEET	REVISION
	2	2	2



FRONT VIEW

SIDE VIEW

REFERENCE DRAWINGS		
ITEM	DESCRIPTION	DWG NO
CONDUCTOR / INSULATOR ATTACHMENTS		
1	POSTS -TOP GROOVE TIES -TOP GROOVE TIES FULL WRAP	D-DT-0256 D-DT-0257
INSULATOR / STRUCTURE ATTACHMENTS		
4	POSTS -SHORT SPINDLE	D-DT-0390
X-ARM STRUCTURE ATTACHMENTS		
9	INTERMEDIATE -A-FRAME CROSSARM	D-WC-7336 -20-04
BONDING AND EARTHING		
	INSULATION CO-ORDINATE	D-DT-0310
PHASING		
	PHASE CONFIGURATION	D-DT-0311

REV. 1.

NOTE : FOR CONDUCTORS UP TO HARE.

2	LOGO CHANGED AS PER NEW CORPORATE ID	BM	HH	VB	01 /02/11	
1	HARE NOTE ADDED AND TITLED CHANGED	CG			/ /	
0	FIRST ISSUE	C.G.	CL	BM	2 /11/01	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	



AUTHORISED BY: B.MEYER

DATE: 2 /11/01

CHECKED BY: L.CHRISTIAANS

DATE: 1 /11/01

DRAWN BY: C.GRAY

DATE: 1 /11/01

MV RETICULATION
THREE PHASE - HARE
A-FRAME/STEEL CROSSARM
INTERMEDIATE - 0 DEG. DEVIATION

D-WC-6022

SET

SHEET

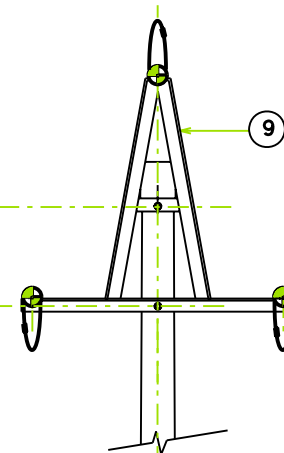
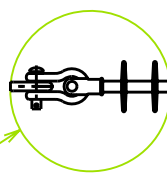
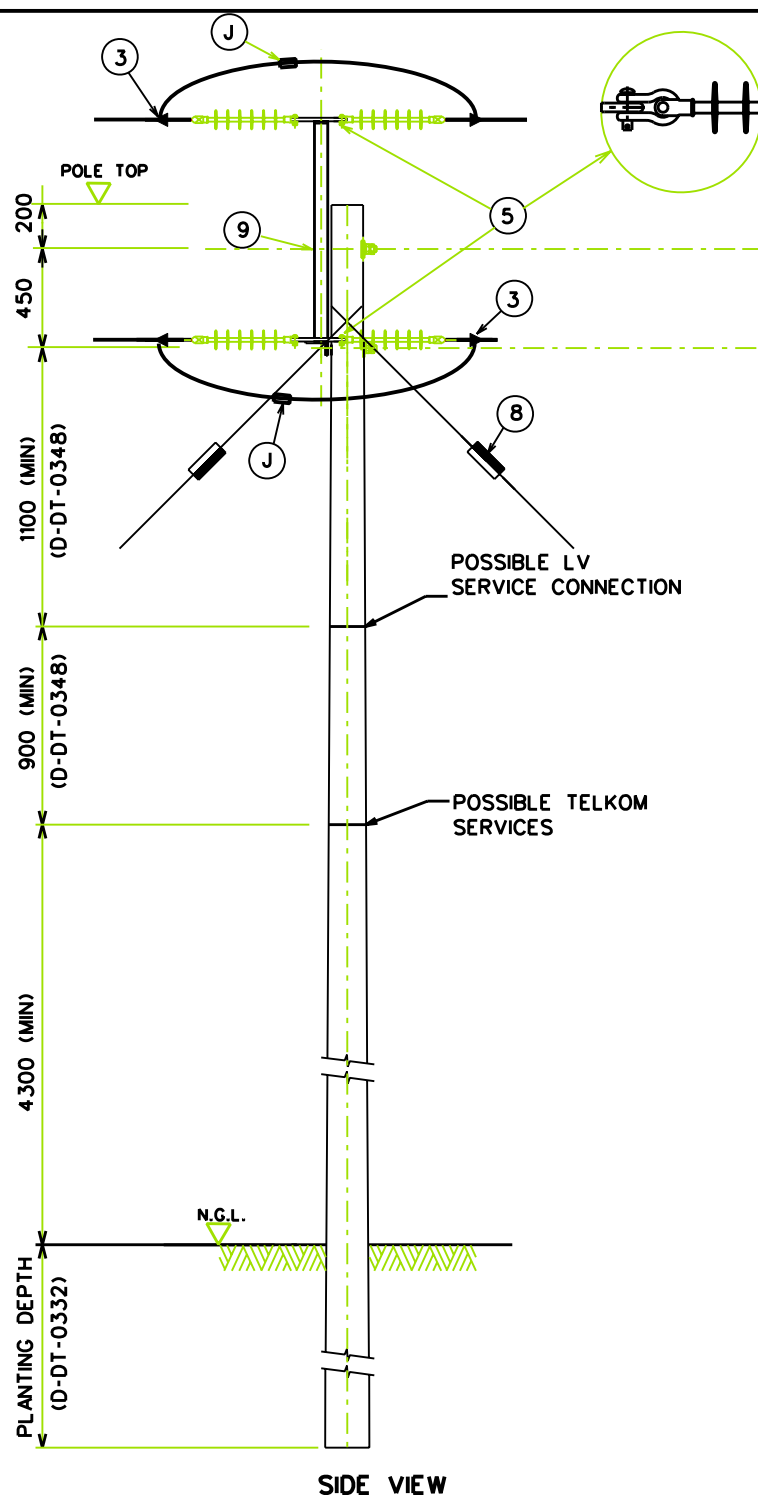
REVISION

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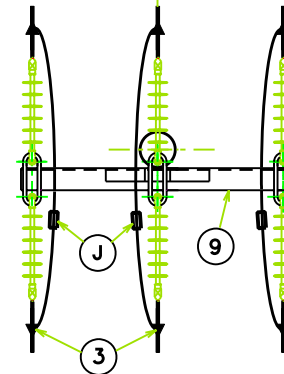
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2

SCALE :
THIS DRAWING IS THE
PROPERTY OF ESKOM



FRONT VIEW



PLAN VIEW

REFERENCE DRAWINGS

ITEM	DESCRIPTION	DWG NO
CONDUCTOR / INSULATOR ATTACHMENTS		
3	STRAINS - HELICAL DEAD END - PISTOL GRIPS	D-DT-0250 D-DT-0251
INSULATOR / STRUCTURE ATTACHMENTS		
5	STRAINS -STRAIN LOOP	D-WC-6022 -30-2
X-ARM STRUCTURE ATTACHMENTS		
9	STRAINS -A FRAME STEEL CROSSARM	D-WC-7336 -20-04
BONDING AND EARTHING		
	INSULATION CO-ORDINATE	D-DT-0310
STAYS		
8	STAY ATTACHMENTS	D-DT-0312
PHASING		
	PHASE CONFIGURATION	D-DT-0311
JOINTS		
J	NON-TENSION JOINTS	CHOICE

REV. 1.

NOTE : FOR CONDUCTORS UP TO HARE.

2	LOGO CHANGED AS PER NEW CORPORATE ID	BM	HH	VB	04/02/11	
1	COMPRESSION DEAD END REMOVED, HARE NOTE ADDED	CG	LC		24/4 /02	
0	FIRST ISSUE	C.G.		BM	21/11/01	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	



AUTHORISED BY: B.MEYER

DATE: 21/11/01

CHECKED BY: L.CHRISTIAANS

DATE: 21/11/01

DRAWN BY: C.GRAY

DATE: 9 /11/01

MV RETICULATION

THREE PHASE - HARE

A-FRAME/STEEL CROSSARM

ANGLE STRAIN - 0 DEG. DEVIATION

D-WC-6022

SET

SHEET

REVISION

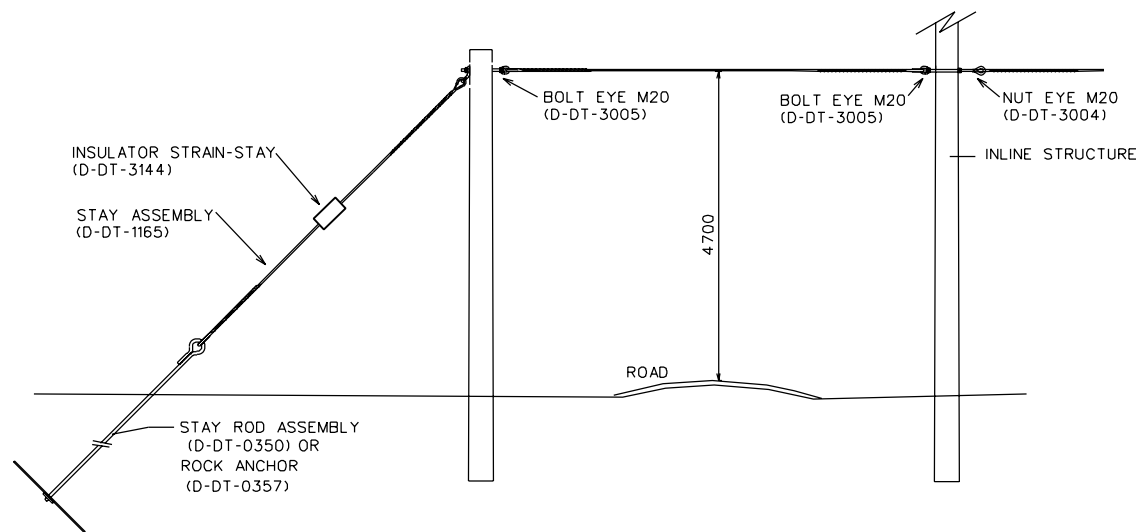
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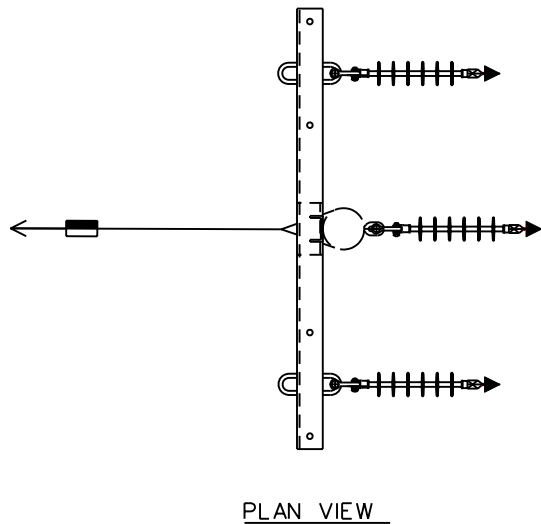
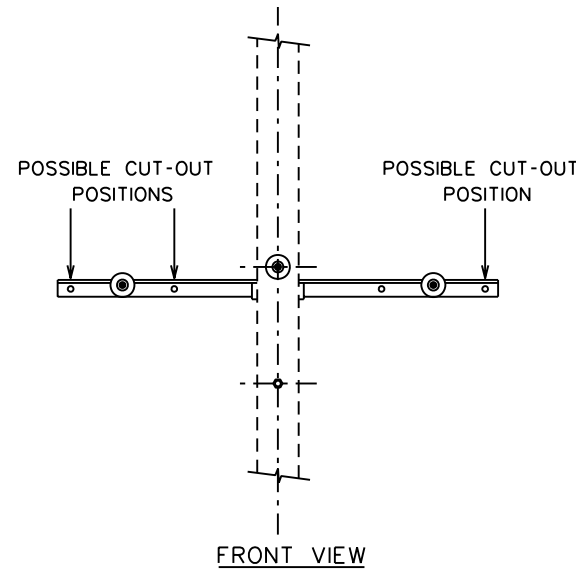
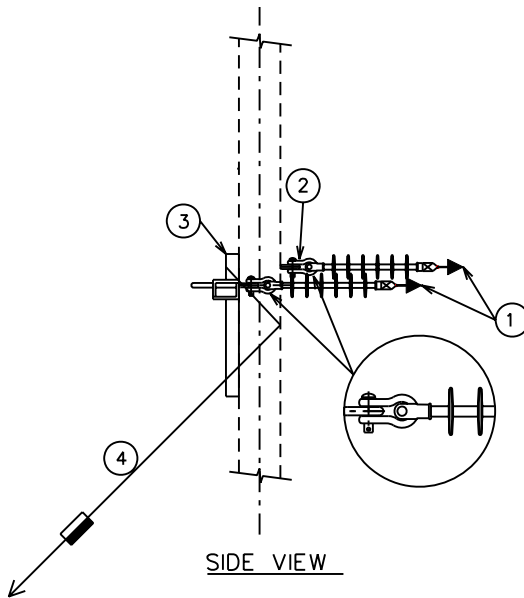
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SCALE : N.T.S

THIS DRAWING IS THE
PROPERTY OF ESKOM



3	P.CROWDY	07.12.95	VARIOUS AMMENDMENTS MADE		P.A.V.	J. SWAN		
2		12.10.94	B.O.M. REMOVED		M.N.			
1		20.10.93	B.O.M. ALTERED		R.V.R.	NJVR		
REV	AUTH MAG	DATE DATUM	REVISION/REVISES INDEX REF/INDEKSVERW		BY DEUR	CHKD NAGES	D-DT-	REFERENCE DRAWINGS VERWYSINGSTEKENINGE
DRG. TEK REGISTR			 ESKOM		ESKOM LV RETICULATION OVERHEAD (FLYING) STAY ARRANGEMENT FOR WOOD POLES			
CHKD NAGES	NJVR	3.3.93						
DRAWN GETEKEN	ETR • OTS ZW	1.9.92	APPROVED S.A. CILLIERS		CAD. REF: CHALL/URBAN		REV	
SCALE SKAAL	NTS		10.01.1994		FILE No. 1168		D-DT-1168	
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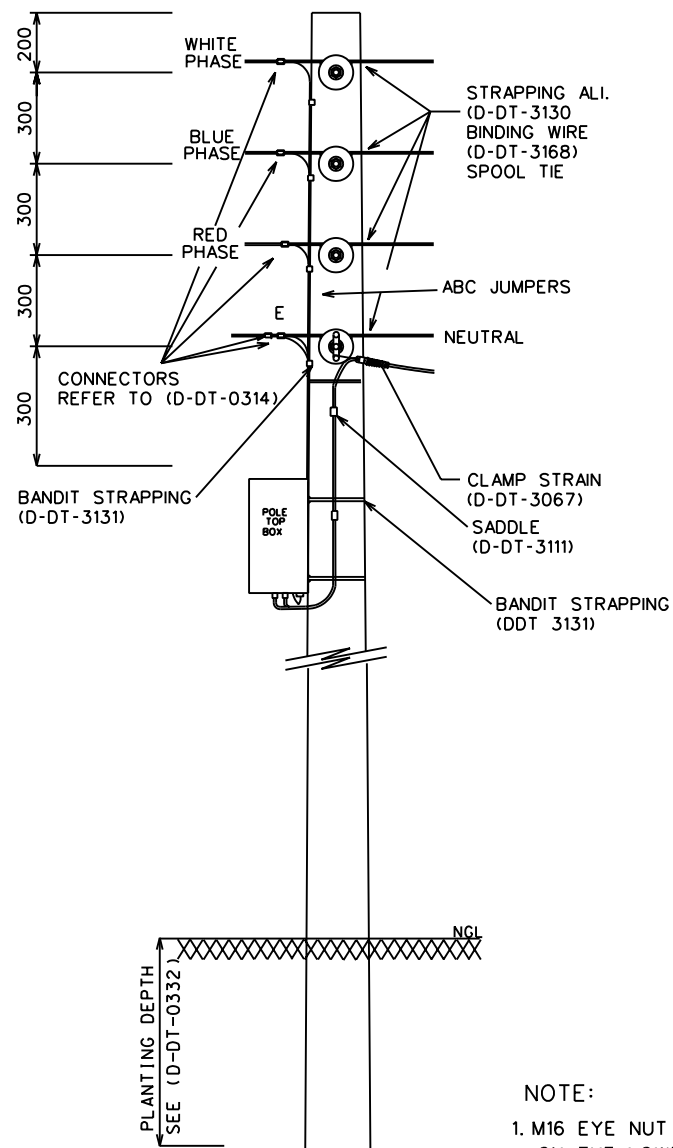


NOTE :
MAXIMUM ELECTRICAL SPAN 50m.

REFERENCE DRAWINGS

ITEM	DESCRIPTION	DWG NO
CONDUCTOR / INSULATOR ATTACHMENTS		
1	STRAINS -HELICAL DEAD-END -PISTOL GRIPS	D-DT-0250 D-DT-0251
INSULATOR / STRUCTURE ATTACHMENTS		
2	TAKE-OFF -EYEBOLT	D-DT-0398
X-ARM STRUCTURE ATTACHMENTS		
3	STRAINS -1700 STEEL CROSSARM (FOX)	D-DT-0397
BONDING AND EARTHING		
INSULATION CO-ORDINATION		D-DT-0310
STAYS		
4	STAY ATTACHMENTS STAY ASSEMBLY	D-DT-0313 D-DT-0341
PHASING		
PHASE CONFIGURATION		D-DT-0311

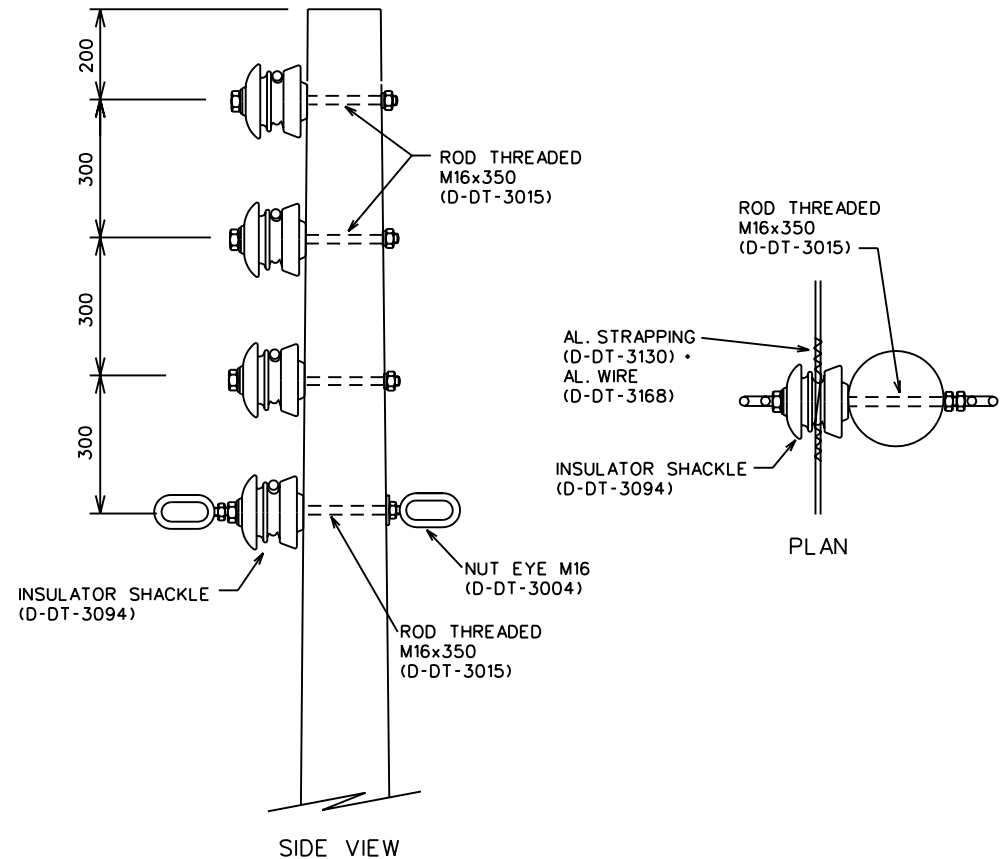
3	STAY ASSEMBLY ADDED & REF. No'S CHANGED	PBM	P.A.V.	B. HILL	18.10.05	
2	LOGO CHANGED AS PER NEW CORPORATE ID	M.T.M.	P.A. VERMAAK		11/11/04	
1	REFERENCE DRAWINGS CORRECTED	P.A.V.	B.HILL	A.BEKKER	11.01.99	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.
		ESKOM MV RETICULATION THREE PHASE TAKE - OFF 1700 STEEL CROSSARM (FOX)				
AUTH: B. BRANFIELD		D-DT-1808		SET	SHEET	REVISION
DATE: 11/01/1999				1	1	3
CHKD: B. BRANFIELD						
DATE: 11/01/1999						
DRAWN: P.A. VERMAAK						
DATE: 08/07/1998						



LV INTERMEDIATE
(4 WIRE SYSTEM)

NOTE:

1. M16 EYE NUT MAY ONLY BE USED ON THE LOWEST CONDUCTOR ON THE POLE (NEUTRAL)
2. ALL THREADS OF BOLTS MUST BE PAINTED WITH POWER THIXOTROPIC ETHCOTE FOR NUT RETENSION



5	TITLE CHANGED	CADNET	P.A.V.	P.A.V.	10.11.04	
4	TITLE CHANGED	CADNET	IAF	I.FERGUSON	7.7.97	
3	VARIOUS AMMENDMENTS MADE	P.A.V.	J.SWAN	P. CROWDY	05.12.95	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.



AUTH: S.A. CILLIERS

DATE: 10.01.1994

CHKD: NJVR

DATE: 05.03.1993

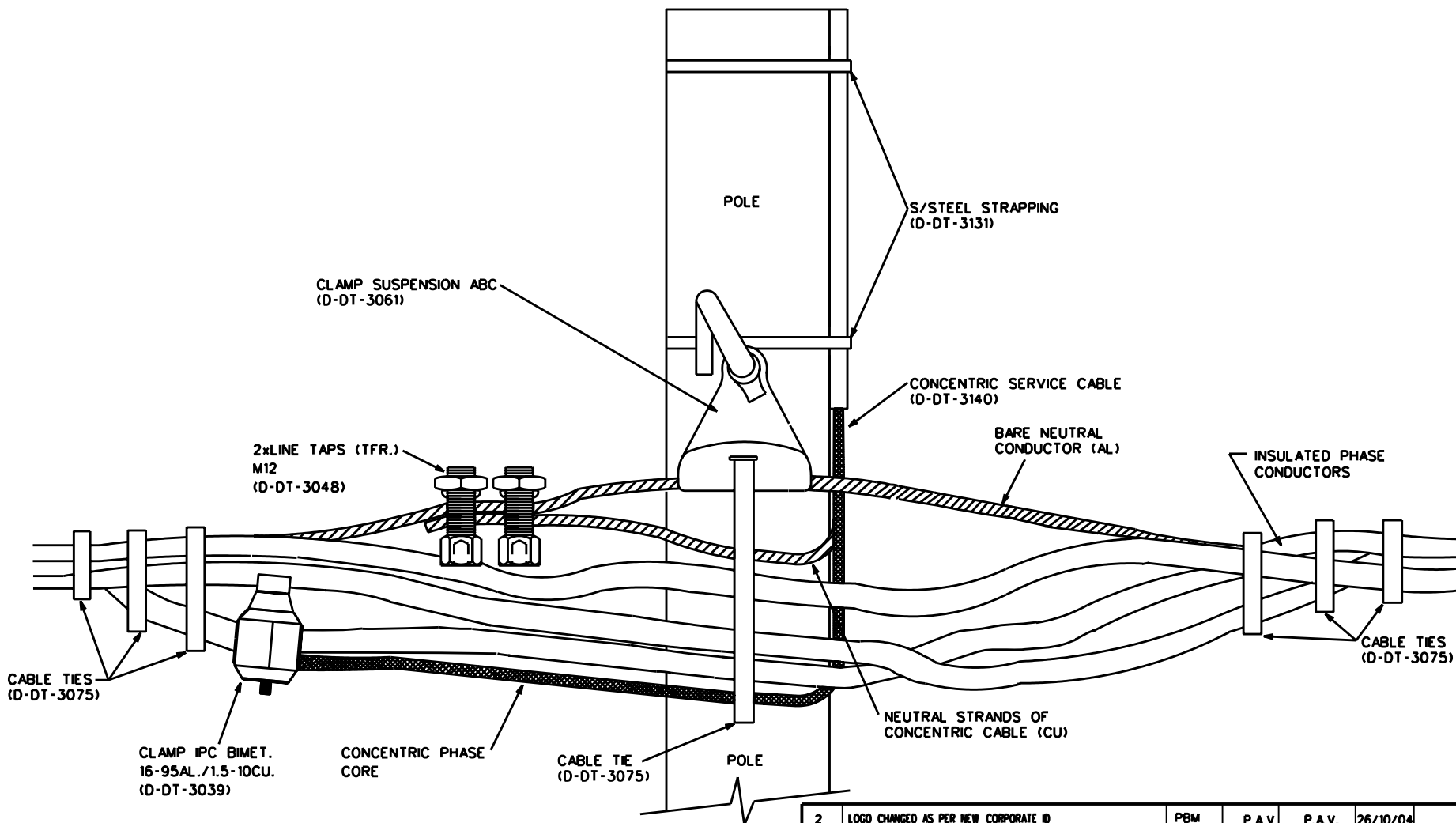
DRAWN: DT
HJVM

DATE: 29.01.1993

LV BARE WIRE SYSTEMS
THREE PHASE
INTERMEDIATE ASSEMBLY
(0 DEG.)

D-DT-0920

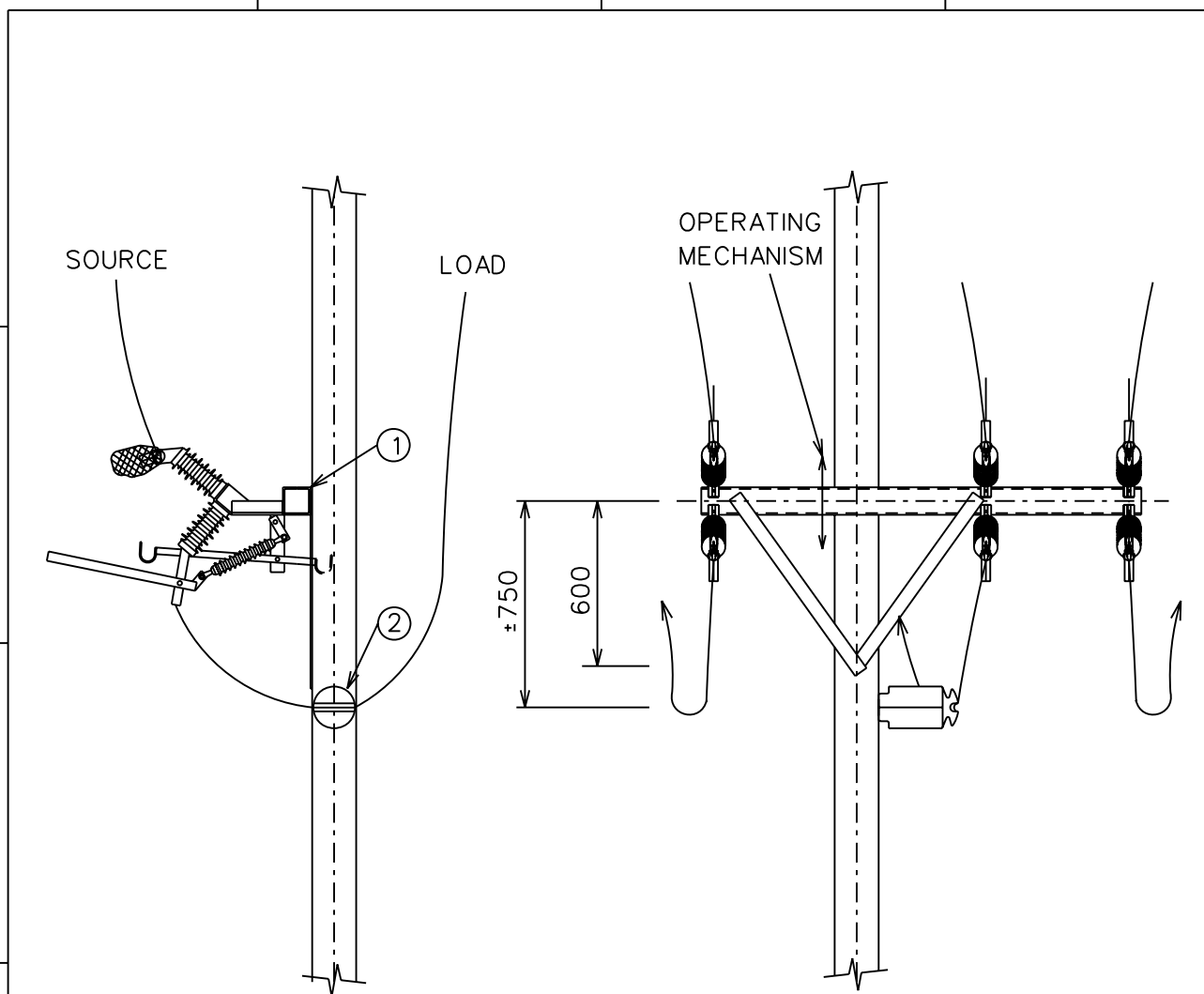
SET	SHEET	REVISION
1	1	5



NOTE :

1. ALL CONDUCTOR INSULATION MUST BE U.V. RESISTANT.
2. A DIRECT CONNECTION ONTO THE ABC SHALL ONLY BE USED WITH A SEPARATE 25mm SQ. STREET LIGHTING CONDUCTOR.
3. THE ALUMINIUM CONDUCTOR SHALL PASS THROUGH THE LINE TAPS ABOVE THE COPPER CONDUCTOR.

2	LOGO CHANGED AS PER NEW CORPORATE ID	PBM	P.A.V.	P.A.V.	26/10/04	
1	IPC'S ON NEUTRAL CHANGED TO TFR. LINE TAPS	P.A.V.	T.GILLARD	A.BEKKER	25.03.02	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.
 Eskom Distribution ESKOM STREET LIGHTING ABC / CONCENTRIC CABLE DIRECT CONNECTION DETAILS						
AUTH: P. CROWDY DATE: 29.09.1999 CHKD: A.ABROSIE DATE: 29.09.1999 DRAWN: P.A.V. DATE: 19.02.1999 D-DT-0395					SET	SHEET
					1	1
						REVISION
						2



REF		DESCRIPTION		DRAWING NO.				
1		TRI-SWITCH VERTICAL ASSEMBLY		(D-DT-0296)				
2		POST INSULATOR W/POLE ASSEMBLY		(D-DT-0392)		SCALE 1:25		
1	LOGO CHANGED AS PER NEW CORPORATE ID			M.T.M.	P.A.V.	P.A.V.	11.11.04	
0	FIRST ISSUE			P.A.V.	R.THERON	P.CROWDY	06.12.00	
REV	REVISION DESCRIPTION			BY	CHKD	AUTH	DATE	PROJECT NO.
		ESKOM SECTION / BY-PASS LOAD-BREAK SWITCH GANGED LINK STICK OPERATED SINGLE POLE MOUNTED						
AUTH: P. CROWDY								
DATE: 06/12/2000								
CHKD: R. THERON								
DATE: 06/12/2000		D-DT-1857			SET	SHEET	REVISION	
DRAWN: P.A. VERMAAK					1	1	1	
DATE: 13/07/1999								

SERVICE CONNECTION
REFER TO
(D-DT-0180)

SERVICE CABLE

POSSIBLE TELKOM
CONNECTION

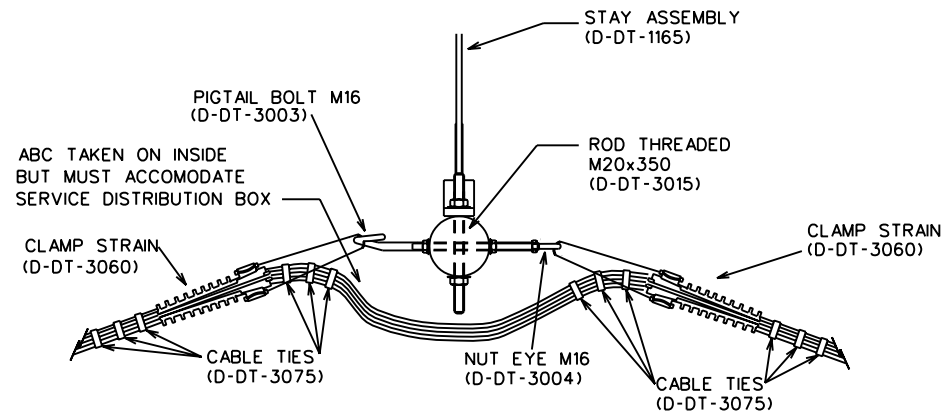
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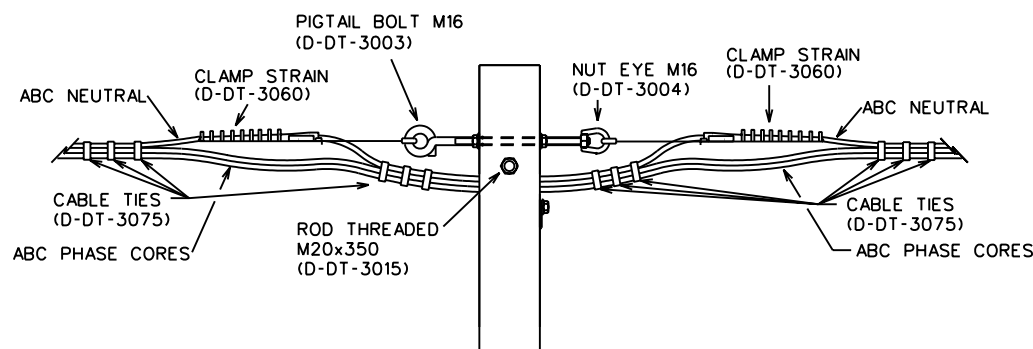
NGL

PLANTING DEPTH
SEE (D-DT-0332)

7m ANGLE STRAIN



PLAN VIEW



FRONT VIEW

NOTE :

1. EARTHING REQUIREMENTS
SEE PART 2.
2. IF TWO ABC BUNDLES ARE
USED - INSTALL MV STAY
(D-DT-0265)

5	LOGO CHANGED AS PER CORPORATE ID	M.T.M.	P.A.V.	J.SCHOLTZ	06.08.04		
4	TITLE CHANGED	CADNET	I.A.F.	I.A.F.	07/07/97		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.	
		LV RETICULATION THREE PHASE BARE NEUTRAL ABC STRAIN ASSEMBLY (0° - 60°) WOOD POLE					
AUTH: S.A. CILLIERS							
DATE: 10/01/1994							
CHKD: N.J.V.R.							
DATE: 01/03/1993		D-DT-1121			SET	SHEET	REVISION
DRAWN: ECR S.T. POOK					1	1	5
DATE: 29/09/1991							

1 2 3 4 5 6 7 8

A

B

C

D

E

F

SERVICE CABLE
SERVICE CONNECTION
REFER TO
(D-DT-0180)

900 MIN.

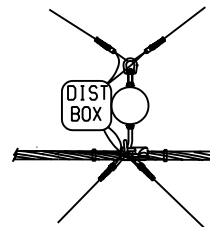
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PLANTING DEPTH
SEE (D-DT-0332)

POSSIBLE TELKOM
SERVICE

CLAMP SUSPENSION
(D-DT-3061)
CABLE TIES
(D-DT-3075)
ABC NEUTRAL
ABC PHASE CORES
CABLE TIES
(D-DT-3075)

SIDE VIEW



PLAN

NOTE:

1. EARTHING REQUIREMENTS
SEE PART 2.
2. STAY WIRE REQUIRED IF :
 - ANGLE GREATER THAN 5
 - TWO OR MORE SERVICES
FROM ONE SIDE OF POLE.

PIGTAIL BOLT M16
(D-DT-3003)

STAY ASSEMBLY
(D-DT-1165)

NUT EYE M16
(D-DT-3004)

CLAMP SUSPENSION
(D-DT-3061)

PIGTAIL BOLT M16
(D-DT-3003)

CABLE TIES
(D-DT-3075)

PLAN

4	LOGO CHANGED AS PER CORPORATE ID	M.T.M.	P.A.V.	J.SCHOLTZ	06.08.04	
3	TITLE CHANGED	P.A.V.	I.A.F.	I.A.F.	07/07/97	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.



AUTH: S.A. CILLIERS

DATE: 10/01/1994

CHKD: N.J.V.R.

DATE: 01/03/1993

DRAWN: N.J.V.R.

DATE: 15/02/1993

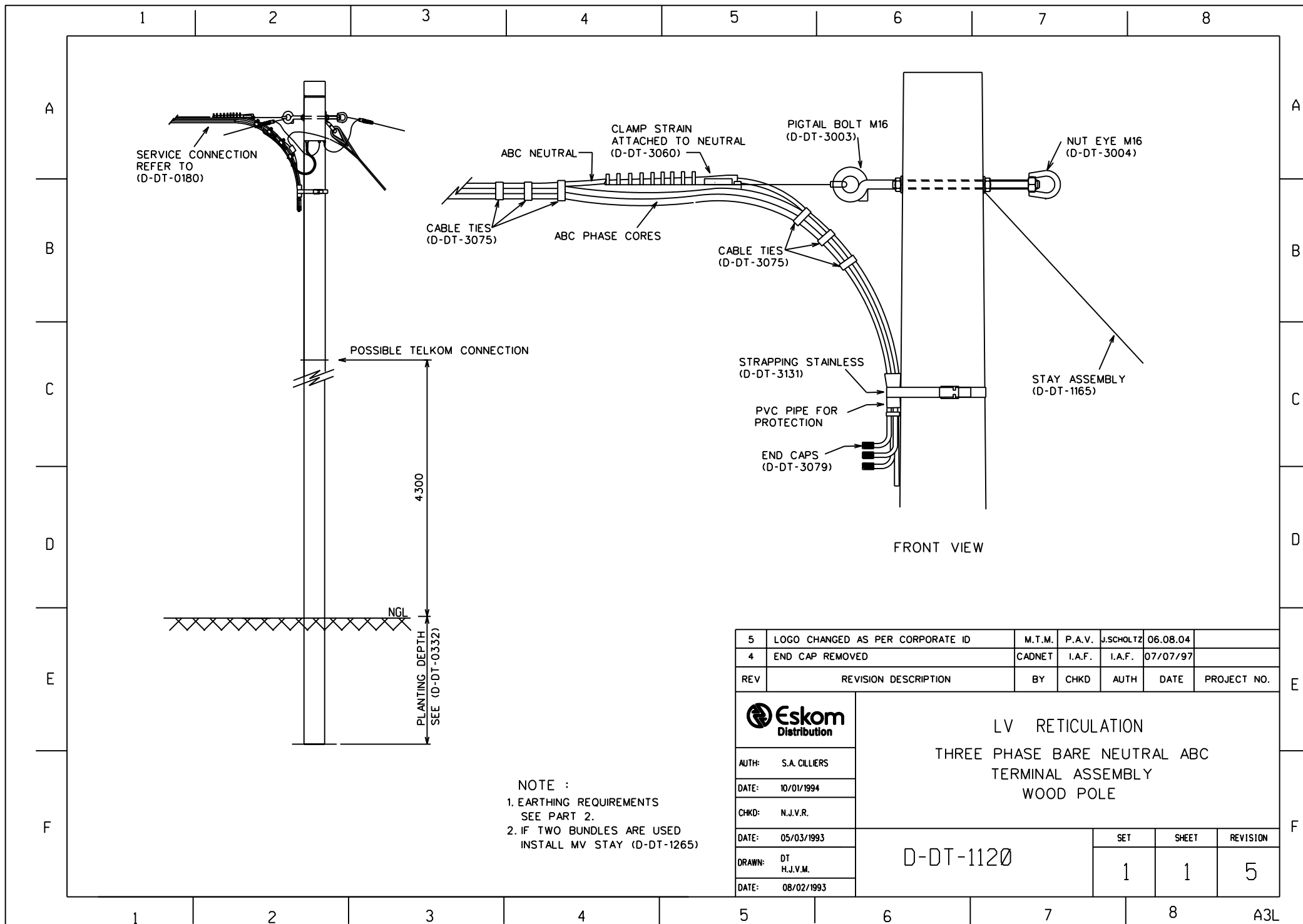
LV RETICULATION

THREE PHASE BARE NEUTRAL ABC
SUSPENSION ASSEMBLY (0° - 30°)
WOOD POLE

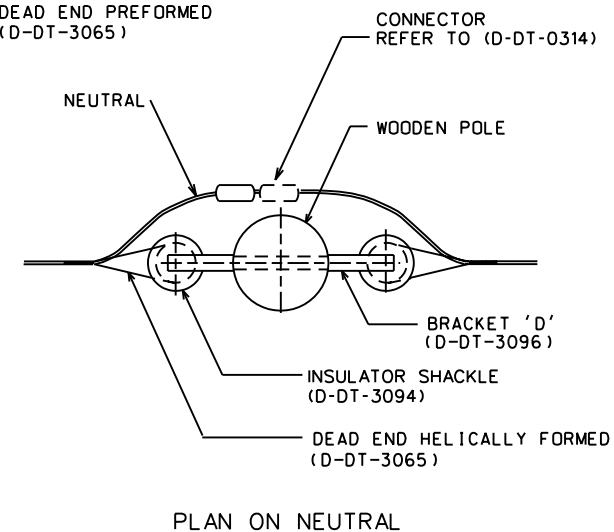
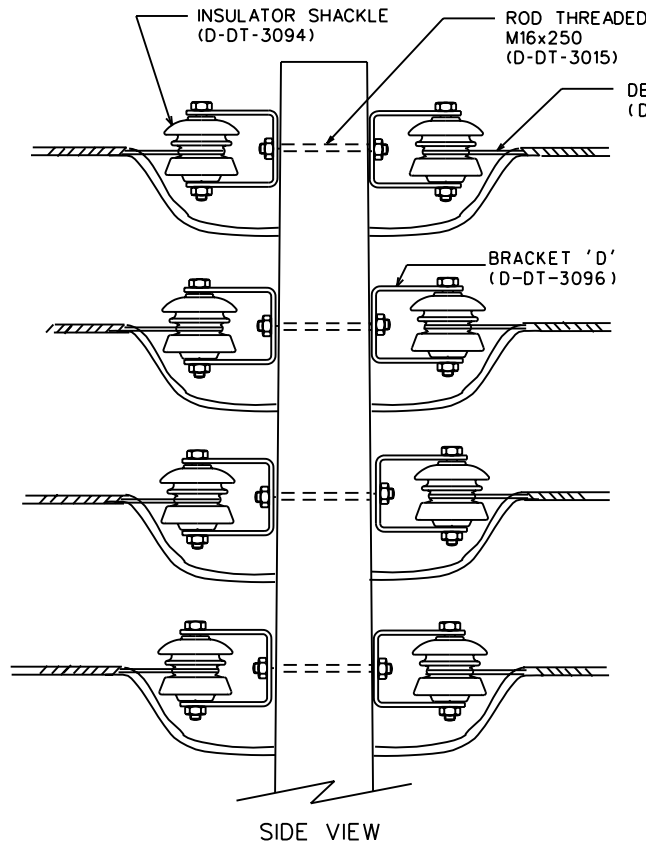
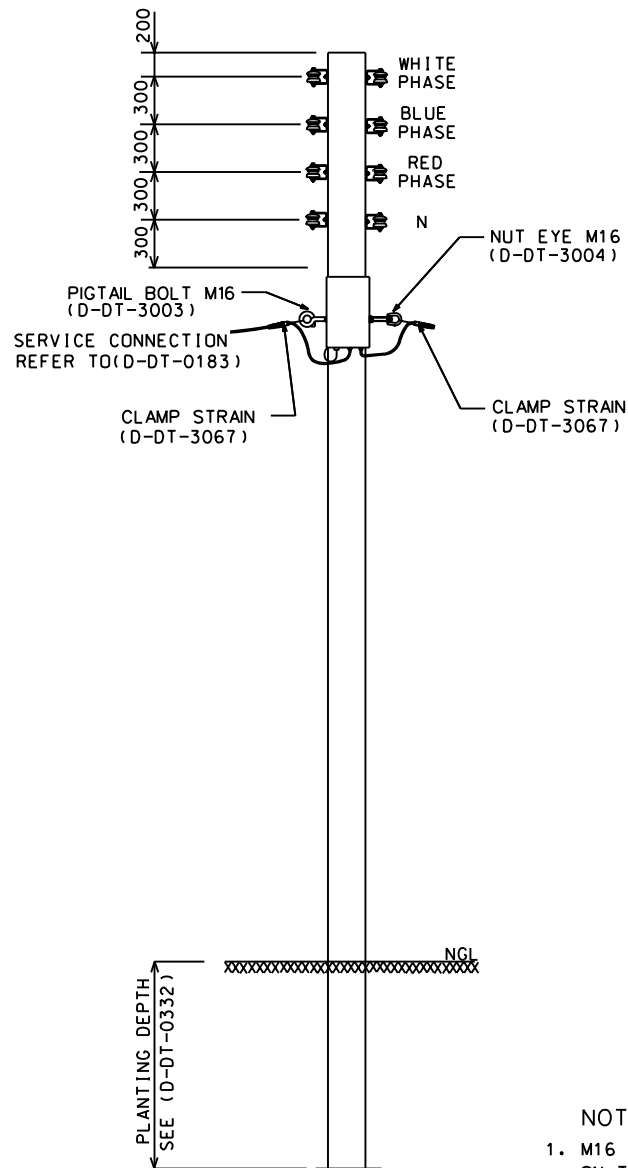
D-DT-1100

SET	SHEET	REVISION
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1 2 3 4 5 6 7 8 A3L

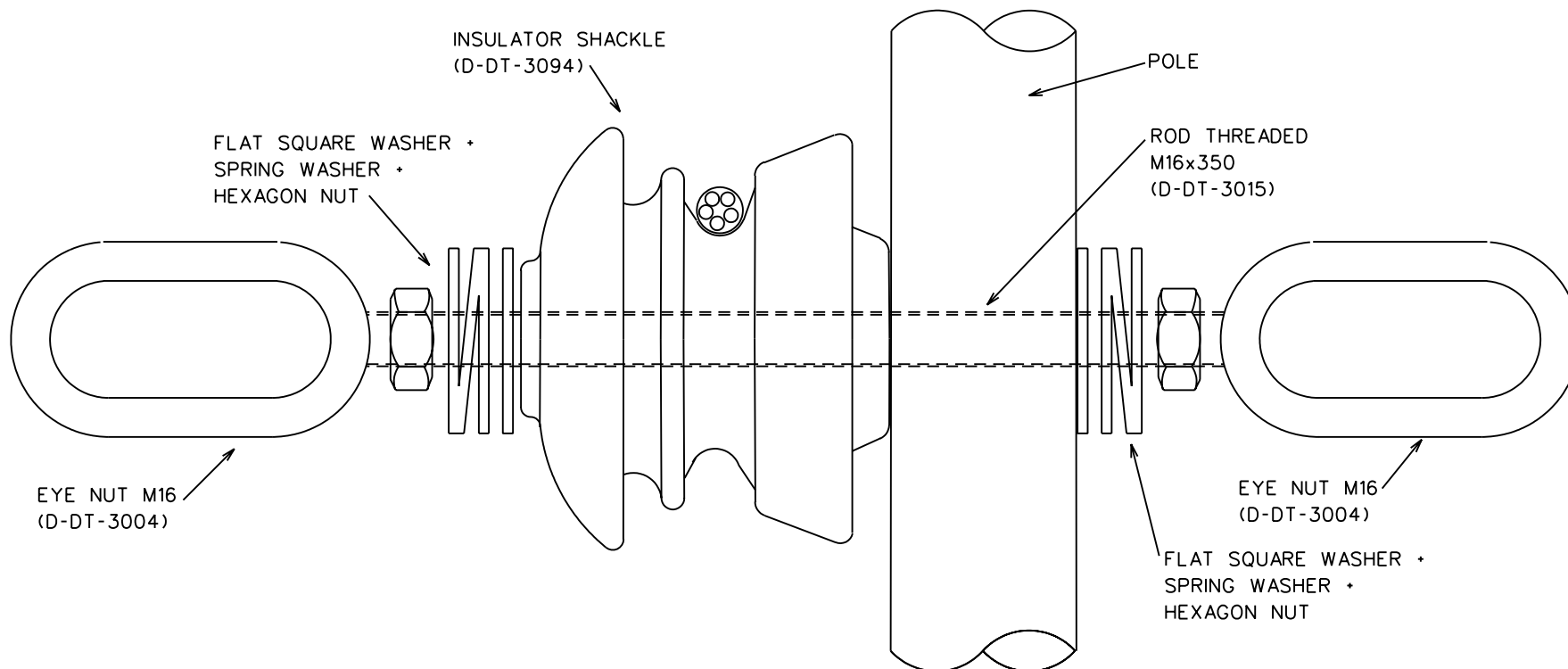


5	LOGO CHANGED AS PER CORPORATE ID	M.T.M.	P.A.V.	J.SCHOLTZ	06.08.04	
4	END CAP REMOVED	CADNET	I.A.F.	I.A.F.	07/07/97	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.
		LV RETICULATION				
		THREE PHASE BARE NEUTRAL ABC				
		TERMINAL ASSEMBLY				
		WOOD POLE				
		D-DT-1120				
DATE:	05/03/1993	SET		SHEET	REVISION	
DRAWN:	DT H.J.V.M.	1		1	5	
DATE:	08/02/1993					



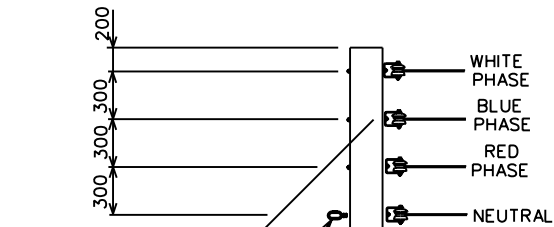
- NOTE:
1. M16 EYE NUT MAY ONLY BE USED ON THE LOWEST CONDUCTOR ON THE POLE (NEUTRAL)
 2. ALL THREAD OF BOLTS MUST BE PAINTED WITH POWER THIXOTROPIC ETHCOTE FOR NUT RETENSION

5	LOGO CHANGED AS PER NEW CORPORATE ID	AKM	P.A.V.	P.A.V.	10.11.04		
4	TITLE CHANGED	CADNET	IAF	I.FERGUSON	7.7.97		
3	VARIOUS AMMENDMENTS MADE	P.A.V.	J.SWAN	P. CROWDY	05.12.95		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.	
		ESKOM LV BARE WIRE SYSTEMS THREE PHASE IN-LINE STRAIN ASSEMBLY					
AUTH: S.A. CILLIERS							
DATE: 10.01.1994							
CHKD: NJVR							
DATE: 05.03.1993		D-DT-0921			SET	SHEET	REVISION
DRAWN: DT HJVM					1	1	5
DATE: 01.02.1993							



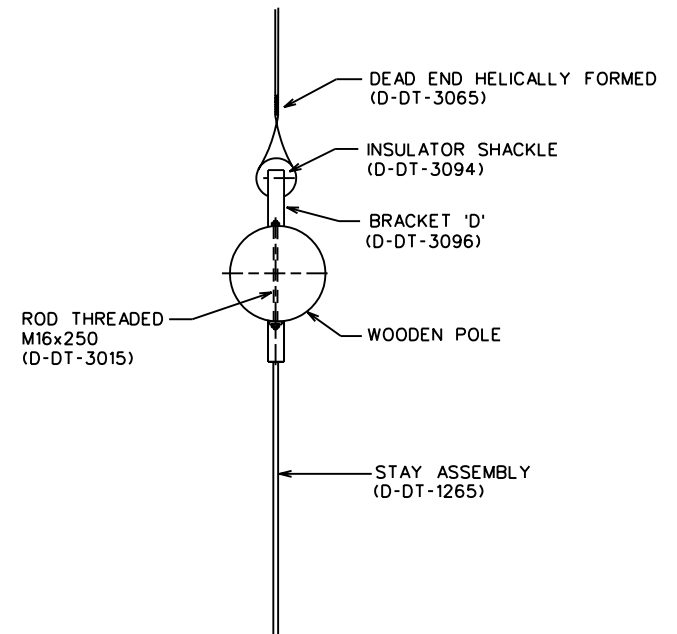
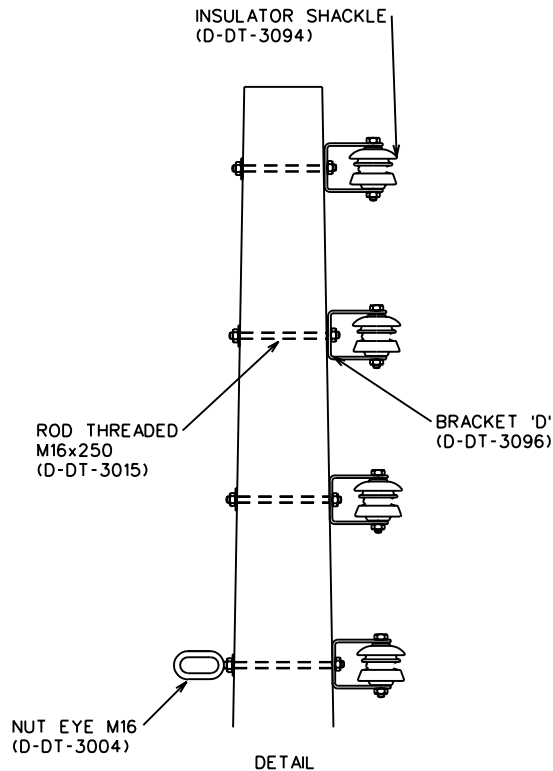
INTERMEDIATE ASSEMBLY

1	LOGO CHANGED AS PER NEW CORPORATE ID	AKM	P.A.V.	P.A.V.	10.11.04	
0	FIRST ISSUE / EERSTE UITREIKING					
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.
		ESKOM LV BARE WIRE SYSTEMS EYE NUT ASSEMBLY				
AUTH: P. CROWDY						
DATE: 07.07.1997						
CHKD: I.FERGUSON						
DATE: 07.07.1997						
DRAWN: CADNET		D-DT-0982		SET	SHEET	REVISION
DATE: 07.07.1997				1	1	1

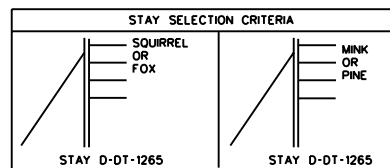
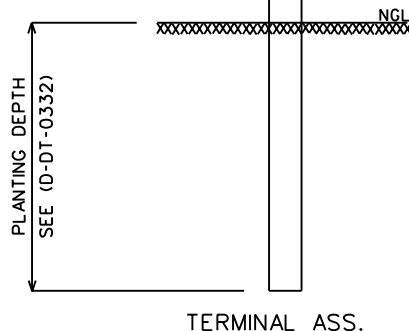


STAY ASSEMBLY
(D-DT-1265)

NUT EYE M16
(D-DT-3004)



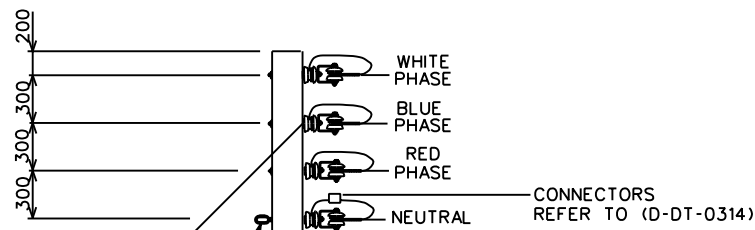
PLAN



NOTE :

- 1.M16 EYE NUT MAY ONLY BE USED ON THE LOWEST CONDUCTOR ON THE POLE (NEUTRAL)
- 2.ALL THREAD OF BOLTS MUST BE PAINTED WITH POWER THIXOTROPIC ETCHCOTE FOR NUT RETENSION

5	LOGO CHANGED AS PER NEW CORPORATE ID	AKM	P.A.V.	P.A.V.	10.11.04		
4	TITLE CHANGED	CADNET	IAF	I.FERGUSON	7.7.97		
3	VARIOUS AMMENDMENTS MADE	P.A.V.	J.SWAN	P. CROWDY	05.12.95		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.	
		ESKOM LV BARE WIRE SYSTEMS THREE PHASE TERMINAL ASSEMBLY					
AUTH: S.A. CILLIERS							
DATE: 10.01.1994							
CHKD: NJVR							
DATE: 02.03.1993		D-DT-0924			SET	SHEET	REVISION
DRAWN: DT HJVM					1	1	5
DATE: 02.02.1993							



STAY ASSEMBLY
(D-DT-1265)

NUT EYE M16
(D-DT-3004)

CONNECTORS
REFER TO (D-DT-0314)

NUT EYE M16
(D-DT-3004)

DETAIL

BRACKET 'D'
(D-DT-3096)

INSULATOR SHACKLE
(D-DT-3094)

DEAD END HELICALLY FORMED
(D-DT-3065)

INSULATOR SHACKLE
(D-DT-3094)

D-BRACKET
(D-DT-3096)

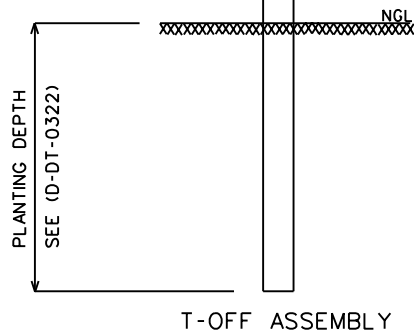
AL. STRAPPING
(D-DT-3131) •
AL. WIR
(D-DT-3168)

ROD THREADED
M16x350
(D-DT-3015)

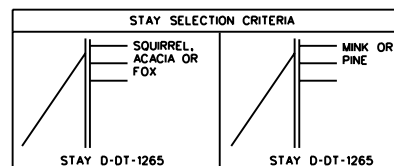
STAY ASSEMBLY
(D-DT-1265)

CONNECTORS
REFER TO (D-DT-0314)

PLAN ON THE
NEUTRAL CONDUCTOR



T-OFF ASSEMBLY



NOTE :

1. M16 EYE NUT MAY ONLY BE USED ON THE LOWEST CONDUCTOR ON THE POLE (NEUTRAL)
2. ALL THREAD OF BOLTS MUST BE PAINTED WITH POWER THIXOTROPIC ETHCOTE FOR NUT RETENSION

5	LOGO CHANGED AS PER NEW CORPORATE ID	AKM	P.A.V.	P.A.V.	10.11.04	
4	TITLE CHANGED	CADNET	IAF	I.FERGUSON	7.7.97	
3	VARIOUS AMMENDMENTS MADE	P.A.V.	J.SWAN	P. CROWDY	05.12.95	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.



AUTH: S.A. CILLIERS

DATE: 10.01.1994

CHKD: NJVR

DATE: 05.03.1993

DRAWN: DT
HJVM

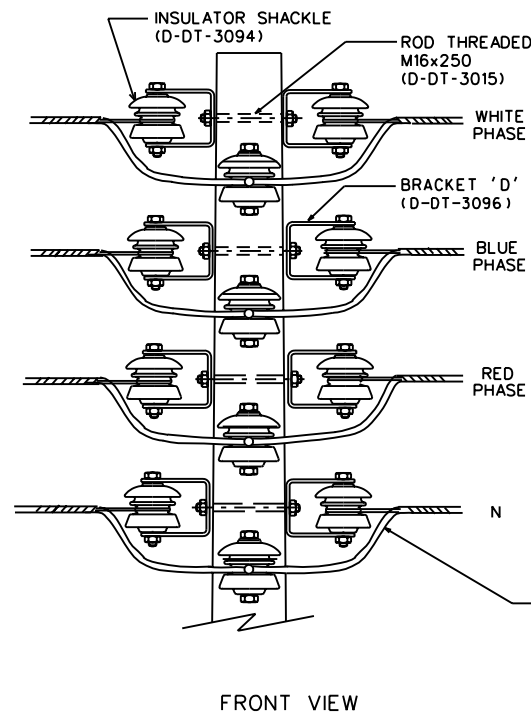
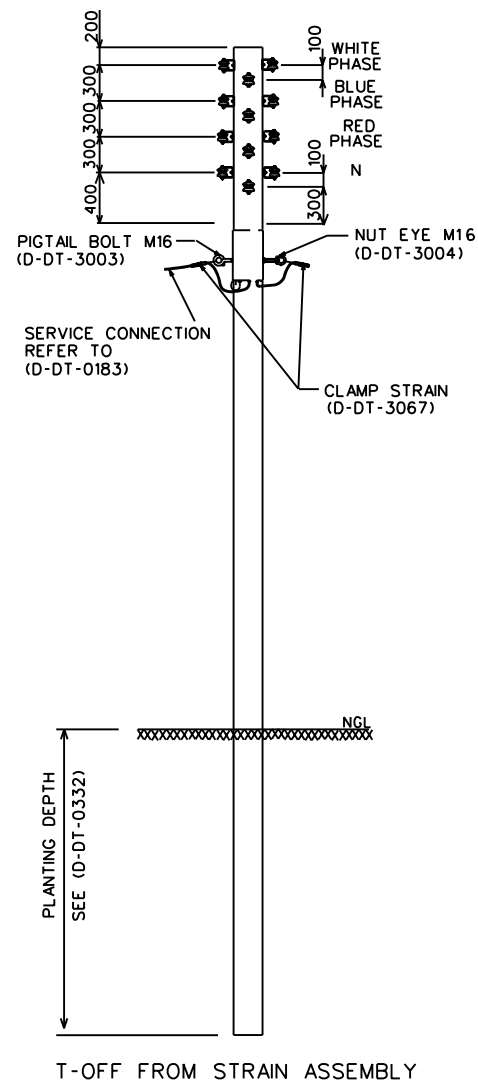
DATE: 02.02.1993

ESKOM
LV BARE WIRE SYSTEMS

THREE PHASE
T-OFF ASSEMBLY FROM INTERMEDIATE

D-DT-0925

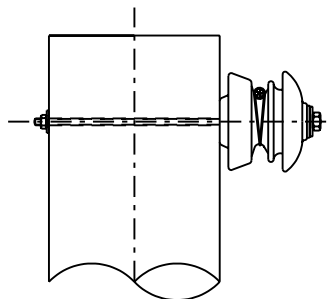
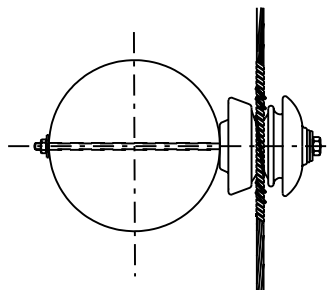
SET	SHEET	REVISION
1	1	5



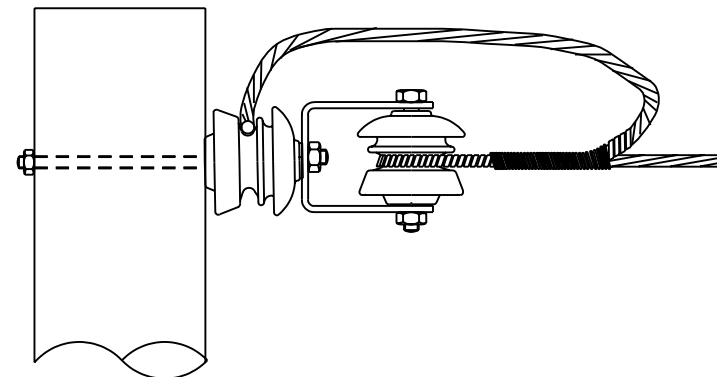
NOTE:

1. M16 EYE NUT MAY ONLY BE USED ON THE LOWEST CONDUCTOR ON THE POLE (NEUTRAL)
2. ALL THREADS OF BOLTS MUST BE PAINTED WITH POWER THIXOTROPIC ETCHCOTE FOR NUT RETENTION

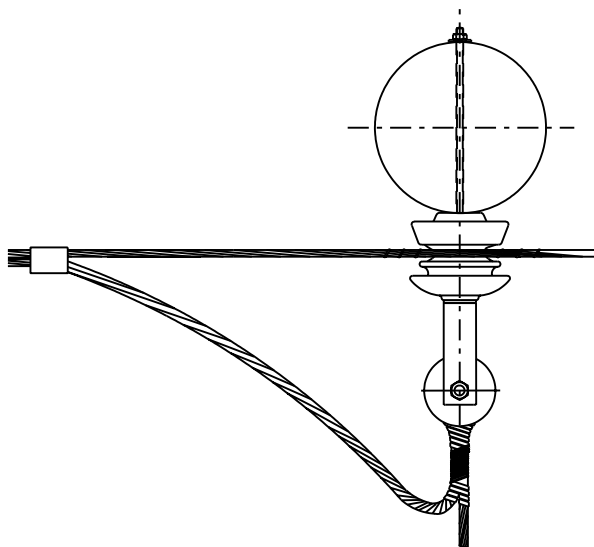
5	LOGO CHANGED AS PER NEW CORPORATE ID	AKM	P.A.V.	P.A.V.	10.11.04		
4	TITLE CHANGED	CADNET	IAF	I.FERGUSON	7.7.97		
3	VARIOUS AMMENDMENTS MADE	P.A.V.	J.SWAN	P. CROWDY	05.12.95		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.	
		ESKOM LV BARE WIRE SYSTEMS THREE PHASE T-OFF ASSEMBLY FROM STRAIN					
AUTH: S.A. CILLIERS							
DATE: 10.01.1994							
CHKD: NJVR							
DATE: 05.03.1993		D-DT-0927			SET	SHEET	REVISION
DRAWN: DT HJVM					1	1	5
DATE: 05.02.1993							



INTERMEDIATE ASSEMBLY

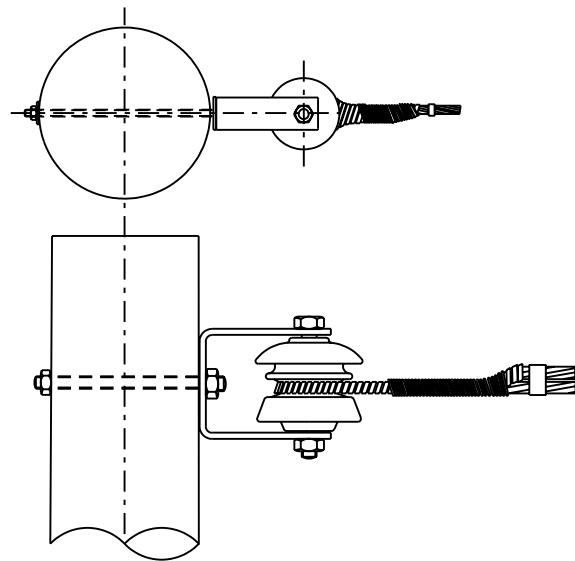


INTERMEDIATE T-OFF FROM STRAIN

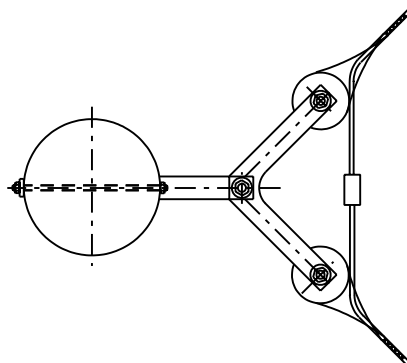


STRAIN T-OFF FROM INTERMEDIATE

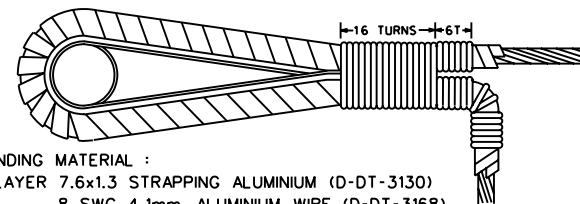
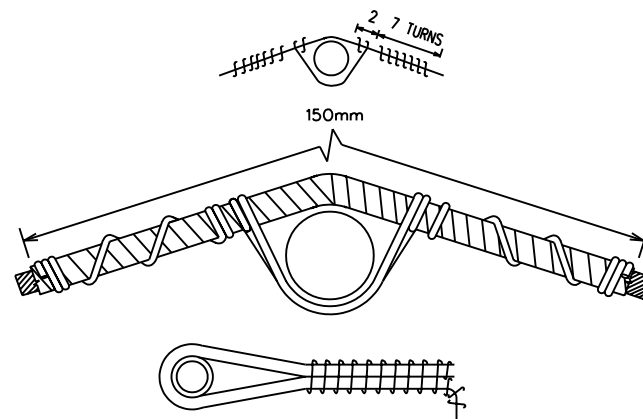
1	LOGO CHANGED AS PER NEW CORPORATE ID	AKM	P.A.V.	P.A.V.	10.11.04	
0	FIRST ISSUE / EERSTE UITREIKING					
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.
		ESKOM LV BARE WIRE SYSTEMS BINDING TECHNIQUES				
AUTH: P. CROWDY						
DATE: 07.07.1997						
CHKD: I.FERGUSON						
DATE: 07.07.1997		D-DT-0983		SET	SHEET	REVISION
DRAWN: CADNET				2	1	1
DATE: 07.07.1997						



INLINE STRAIN ASSEMBLY



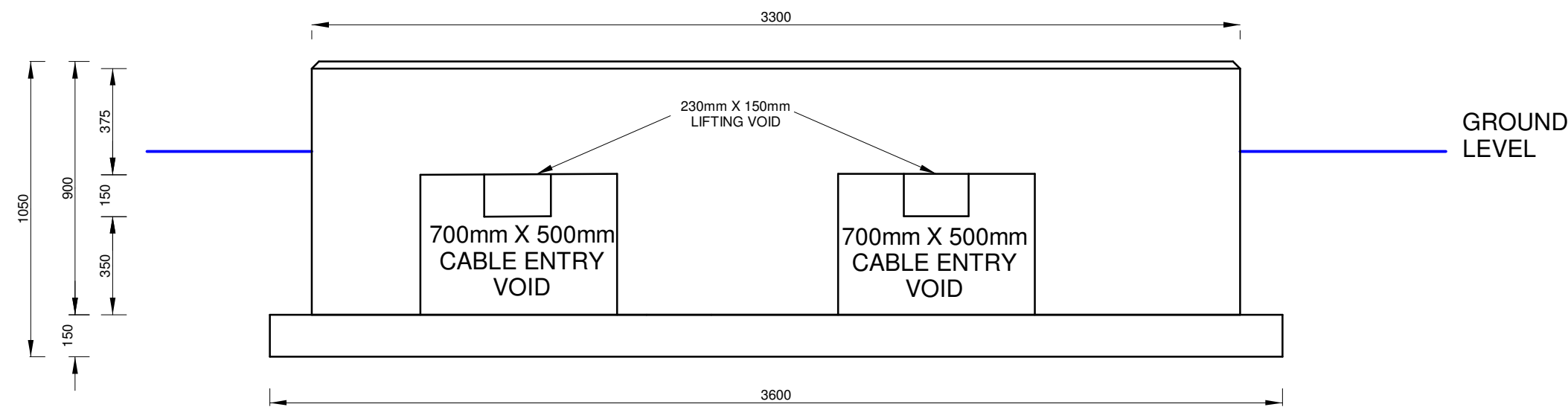
LARGE ANGLE STRAIN ASSEMBLY



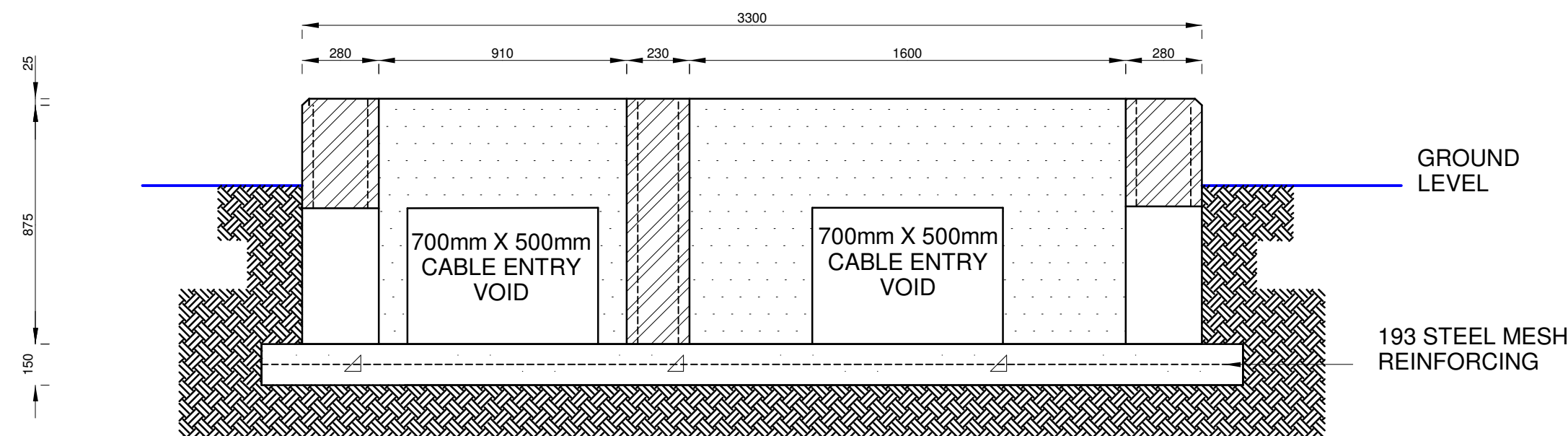
BINDING MATERIAL :
1 LAYER 7.6x1.3 STRAPPING ALUMINIUM (D-DT-3130)
8 SWG 4.1mm ALUMINIUM WIRE (D-DT-3168)
NOTE: FOR COPPER CONDUCTOR OMIT TAPE.

BINDING TECHNIQUES

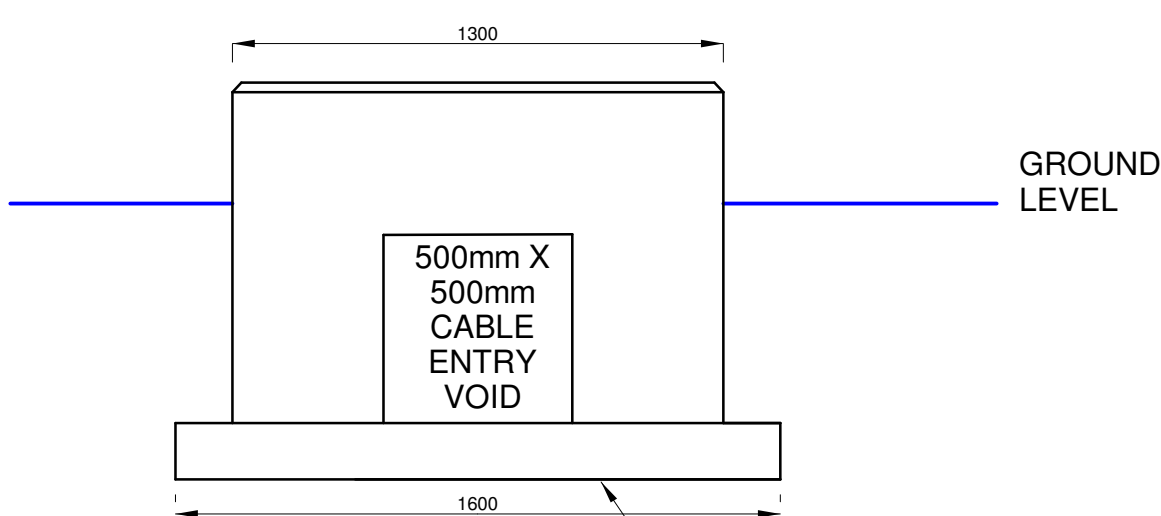
1	LOGO CHANGED AS PER NEW CORPORATE ID	AKM	P.A.V.	P.A.V.	10.11.04	
0	FIRST ISSUE / EERSTE UITREIKING					
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.
		ESKOM LV BARE WIRE SYSTEMS BINDING TECHNIQUES				
AUTH: P. CROWDY						
DATE: 07.07.1997						
CHKD: I. FERGUSON						
DATE: 07.07.1997		D-DT-0983		SET	SHEET	REVISION
DRAWN: CADNET				2	2	1
DATE: 07.07.1997						



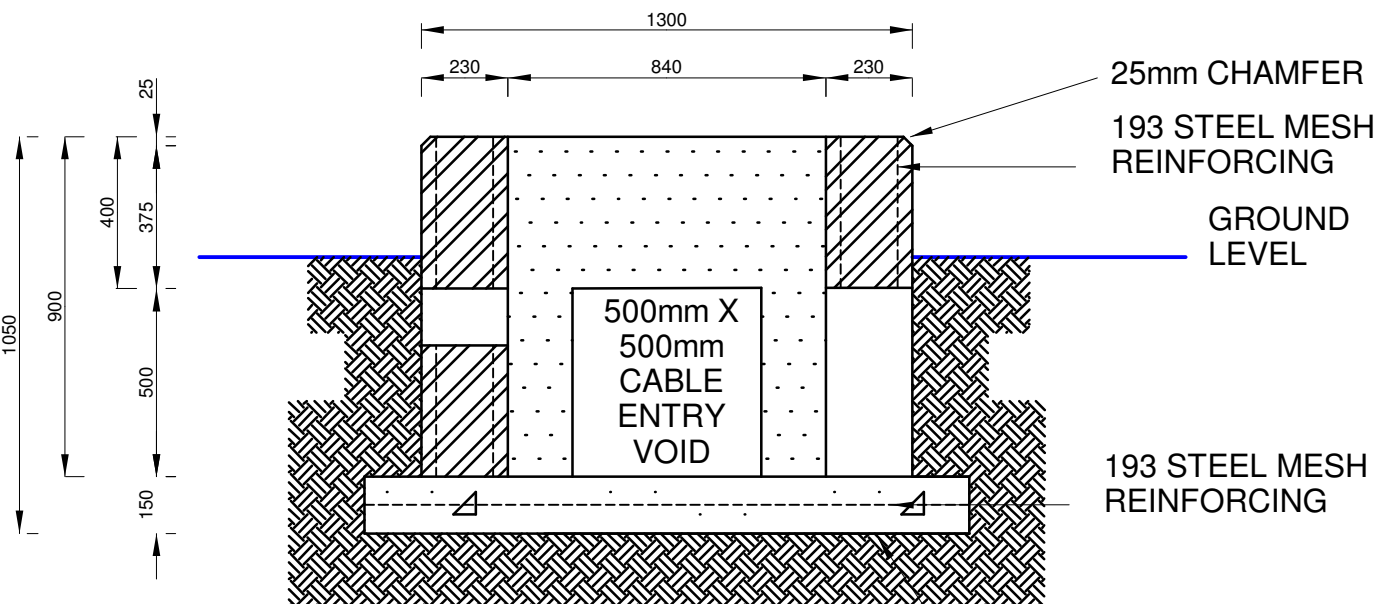
SIDE ELEVATION



SECTION X-X

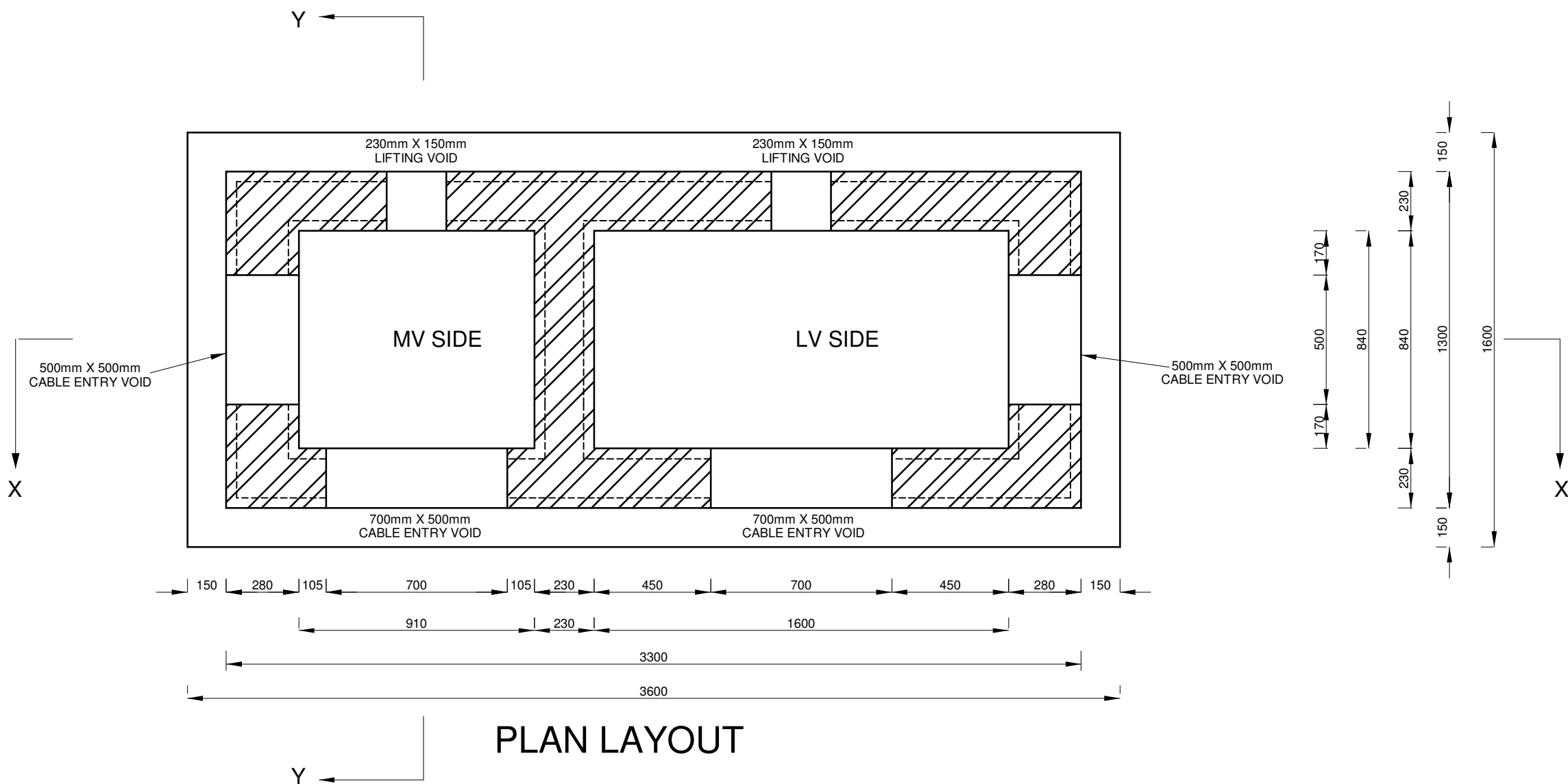


FRONT ELEVATION



SECTION Y-Y

PRE-CAST CONCRETE PLINTH
FRAME OF 30MPA CONCRETE
WITH STEEL MESH REINFORCING



PLAN LAYOUT

LEGENDE

NB. FOUNDATION SHALL BE
VISIBLE AT LEAST 300mm
FROM GROUND LEVEL.

GEORGE
MUNISIPALITEIT
MUNICIPALITY

GEORGE
THE CITY FOR ALL REASONS

ELEKTROTEGNIES AFDELING
ELECTRICAL DEPARTMENT

PROJEK / PROJECT

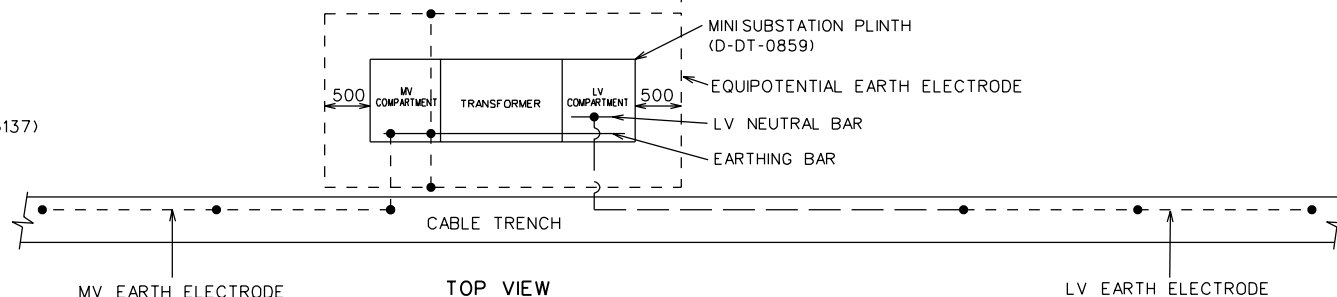
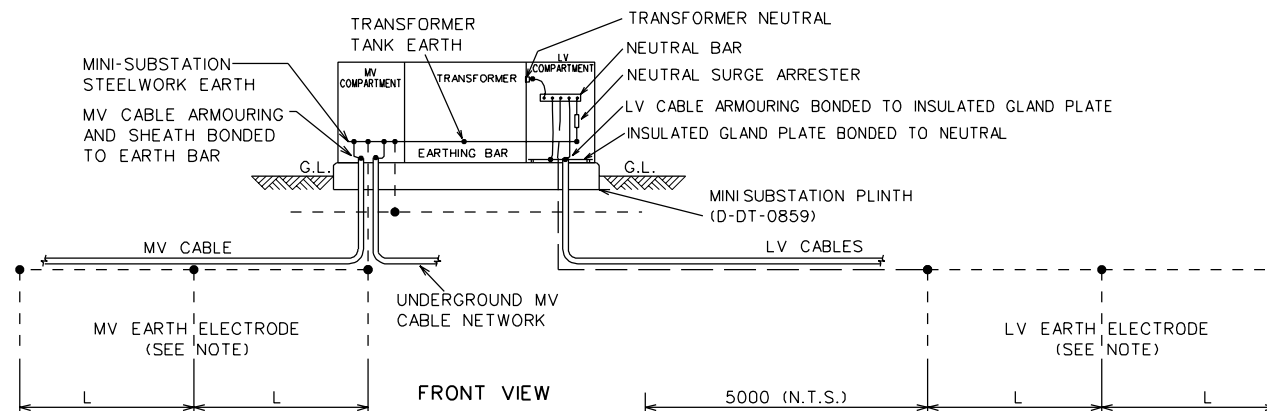
**GEORGE STANDARD
PRECAST PLINTH**

BESKRYWING / DESCRIPTION

**MINIATURE
SUBSTATION**

GETEKEN DRAWN	CDV	NAGESIEN CHECKED
ONTWERP DESIGN		INGENIEUR ENGINEER
SKAAL SCALE	1 : 20	DATUM DATE
		2023/09/13

TEKENING DRAWING	No. F - 25	WYSIGING AMENDMENT
---------------------	------------	-----------------------



LEGEND :

BARE 16mm SQ. CU (D-DT-3139)

SHOWN THUS : - - - - -

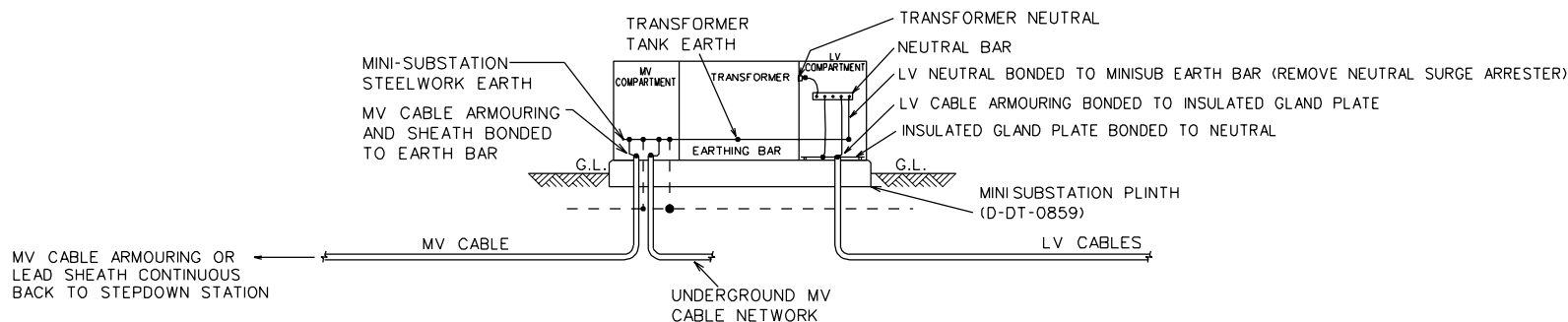
INSULATED 16mm SQ. CU (D-DT-3137)

SHOWN THUS : — — —

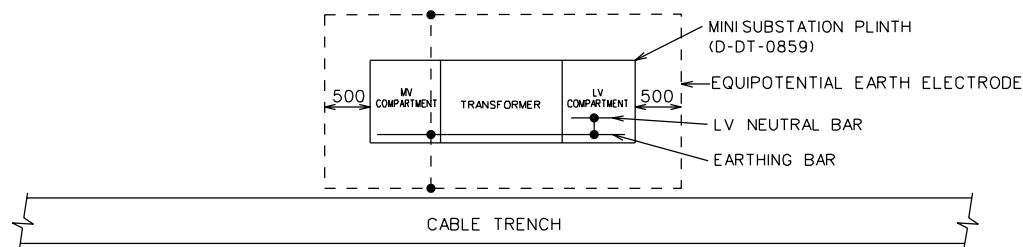
NOTE (EARTH ELECTRODE) :

1. 16mm SQ. COPPER EARTH LEAD BURIED AT 0.5m BELOW NATURAL GROUND LEVEL TO SERVE AS EQUIPOTENTIAL EARTH ELECTRODE.
2. EARTH ELECTRODE TO BE INSTALLED 0.5m FROM TRANSFORMER FOUNDATION AND TO ENCIRCLE ENTIRE TRANSFORMER
3. EACH END OF THE EQUIPOTENTIAL EARTH ELECTRODE IS TO BE BONDED TO THE MINISUB EARTH BAR.
4. MAXIMUM MV ELECTRODE RESISTANCE IS 30 OHMS
5. MAXIMUM LV ELECTRODE RESISTANCE IS DEPENDANT ON FEEDER MAIN EARTH FAULT PROTECTION SETTING AT SOURCE.
SEE TABLE 1 IN THE MV/LV RETICULATION EARTHING STANDARD PART 2 OF DISTRIBUTION STANDARD - CLAUSE 4.2.5.
6. REFER TO D-DT-0642 FOR DETAIL OF EARTH ELECTRODES CONNECTIONS.
7. DESIGN OF EARTH ELECTRODE TO BE DETERMINED BY SOIL RESISTIVITY.
SEE EARTHING STANDARD PART 2 TABLE 3a / 4a FOR TRENCH ELECTRODE DESIGN FOR 30/70 OHMS ELECTRODES.
ADJUST LENGTH 'L' AS INDICATED IN THE TABLE.
8. EQUIPOTENTIAL AND MV EARTH ELECTRODES SHALL BE BONDED.
9. 5m SEPARATION BETWEEN MV/EQUIPOTENTIAL AND LV ELECTRODE IN THE SOIL.

2	G.WHYTE	MAY '03	EQUIPOTENTIAL EARTH ADDED FOR NO ECC. INSTALLATION	P.A.V.	T.GILLARD		
1	A. BEKKER	11.06.01	SA EARTH ELECTRODE ADDED AND NOTES CHANGES	P.A.V.	G.WHYTE		
0			FIRST ISSUE / EERSTE UITREIKING				
REV	AUTH MAC	DATE DATUM	REVISION/REVISED INDEX REF/INDEXSWERW	BY DEUR	CHKD NAGES	D-DT-	REFERENCE DRAWINGS VERWYSINGSTEKENINGE
			MINI-SUBSTATION EARTHING FOR MV SYSTEMS WITHOUT CONTINUOUS EARTHING CONDUCTOR TO SOURCE SUBSTATION				
CHKD NAGES	G. WHYTE	10.12. 1999					
DRAWN GETEKEN	P.A.V.	05-10- 1995					
SCALE SKAAL	1 : 50		APPROVED P. CROWDY 21.12.1999	CAD.REF: SERIES 0800 FILE No. 0855	D-DT-0855 (Sheet 1 of 3)		REV 2



FRONT VIEW



TOP VIEW

LEGEND :

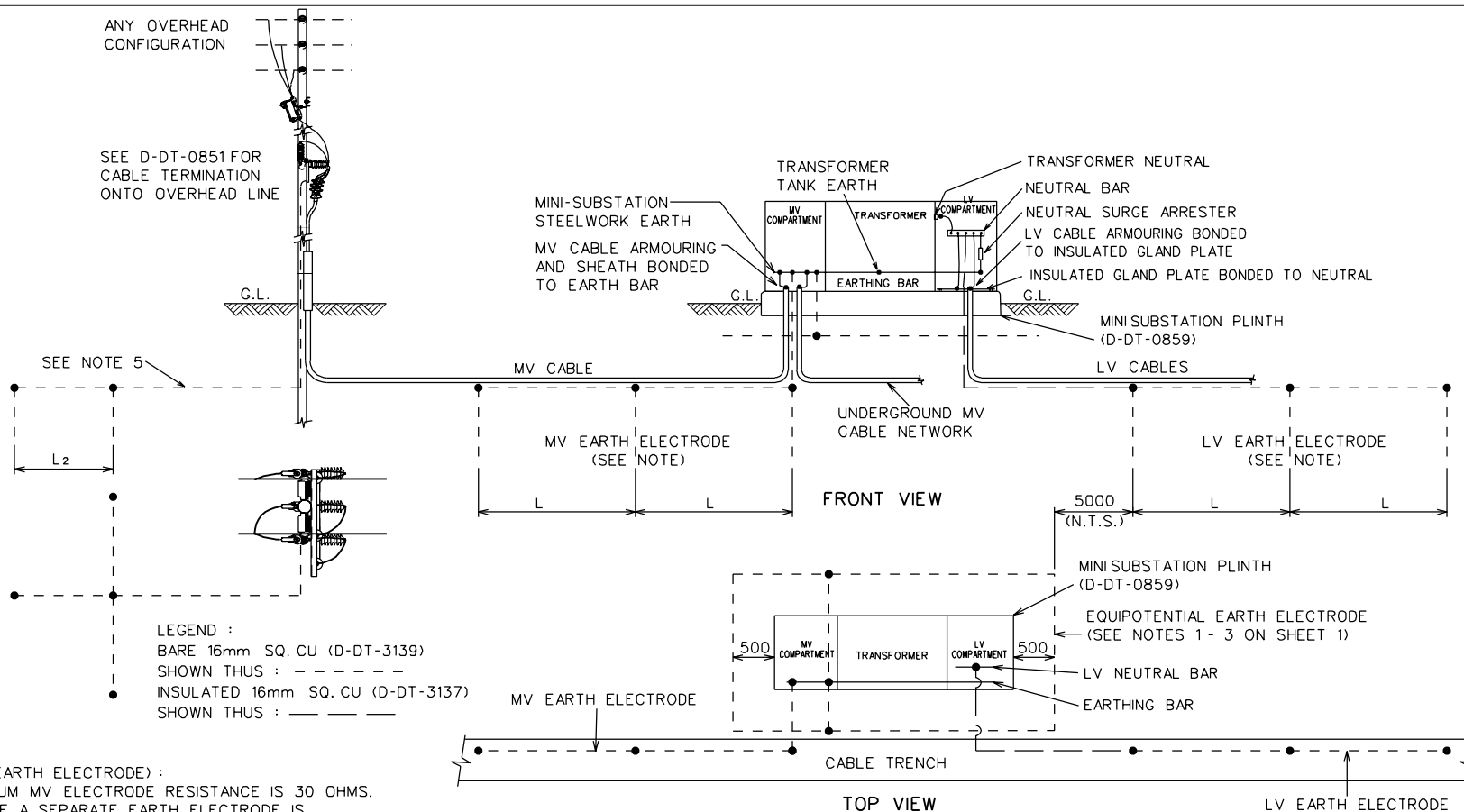
BARE 16mm SQ. CU (D-DT-3139)

SHOWN THUS : - - - - -

NOTE :

1. 16mm SQ. COPPER EARTH LEAD BURIED AT 0.5m BELOW NATURAL GROUND LEVEL TO SERVE AS EQUIPOTENTIAL EARTH ELECTRODE
2. EARTH ELECTRODE TO BE INSTALLED 0.5m FROM MINISUB FOUNDATION AND TO ENIRCLE ENTIRE MINISUB.
3. EACH END OF THE EARTH ELECTRODE IS TO BE BONDED TO THE MINISUB EARTH BAR.

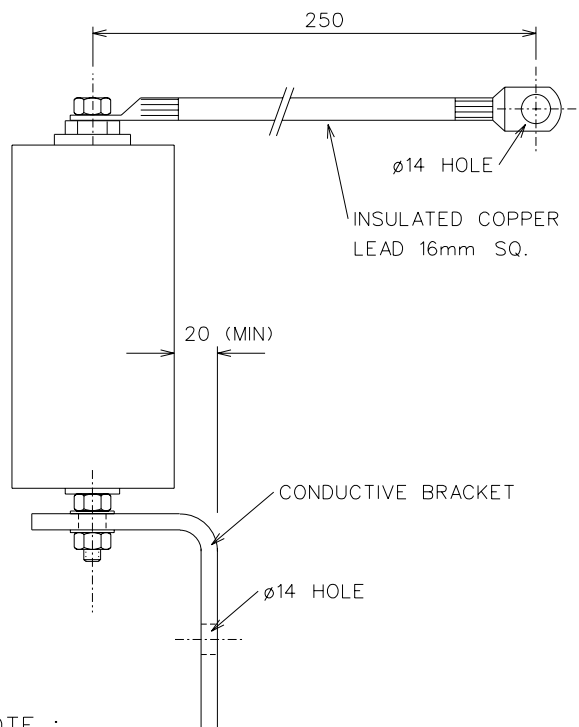
2	G.WHYTE	MAY'03	EQUIPOTENTIAL EARTH ADDED FOR NO ECC. INSTALLATION	P.A.V.	T.GILLARD		
1	A. BEKKER	11.06.01	SA EARTH ELECTRODE ADDED AND NOTES CHANGES	P.A.V.	G.WHYTE		
0			FIRST ISSUE / EERSTE UITREIKING				
REV	AUTH	DATE	REVISION/REVISIES	BY	CHKD	D-DT-	REFERENCE DRAWINGS
	MAG	DATUM	INDEX REF/INDEXVERW	DEUR	NAGES		VERWYSINGSTEKENINGE
			MINI-SUBSTATION EARTHING FOR MV SYSTEMS WITH CONTINUOUS EARTHING CONDUCTOR TO SOURCE SUBSTATION				
CHKD NAGES	G. WHYTE	10.12. 1999	APPROVED	CAD. REF:	D-DT-0855 (Sheet 2 of 3)		REV
DRAWN GETEKEN	P.A.V.	05-10 1995	P. CROWDY	SERIES 0800			2
SCALE SKAAL	1 : 50		21.12.1999	FILE No. 0855			



NOTE (EARTH ELECTRODE) :

1. MAXIMUM MV ELECTRODE RESISTANCE IS 30 OHMS.
WHERE A SEPARATE EARTH ELECTRODE IS
INSTALLED AT THE POLE (SEE NOTE 5) THE MV ELECTRODE RESISTANCE IS
DETERMINED BY THE TWO ELECTRODE RESISTANCES IN PARALLEL.
2. MAXIMUM LV ELECTRODE RESISTANCE IS DEPENDANT ON FEEDER MAIN
EARTH FAULT PROTECTION SETTING AT SOURCE.
SEE TABLE 1 IN THE MV/LV RETICULATION EARTHING STANDARD PART 2
OF DISTRIBUTION STANDARD - CLAUSE 4.2.5.
3. DESIGN OF EARTH ELECTRODE TO BE DETERMINED BY SOIL RESISTIVITY.
SEE EARTHING STANDARD PART 2 TABLE 3a / 4a FOR TRENCH ELECTRODE
DESIGN FOR 30/70 OHMS ELECTRODES.
ADJUST LENGTH 'L' AS INDICATED IN THE TABLE.
4. REFER TO D-DT-0642 FOR DETAIL OF EARTH ELECTRODES CONNECTIONS.
5. IF THE SEPARATION BETWEEN THE TERMINAL POLE AND THE TRANSFORMER
IS >10m A SEPARATE EARTH ELECTRODE FOR THE SURGE ARRESTERS SHALL BE
INSTALLED AT THE POLE, REFER TO MV/LV RETICULATION STANDARD PART 2
OF DISTRIBUTION STANDARD - CLAUSE 4.2.4 AND 4.2.5.
6. EQUIPOTENTIAL AND MV EARTH ELECTRODES SHALL BE BONDED.
7. 5m SEPARATION BETWEEN MV/EQUIPOTENTIAL AND LV ELECTRODE IN THE SOIL.

2	G.WHYTE	MAY'03	EQUIPOTENTIAL EARTH ADDED FOR NO ECC. INSTALLATION	P.A.V.	T.GILLARD		
1	A. BEKKER	11.06.01	SA EARTH ELECTRODE ADDED AND NOTES CHANGES	P.A.V.	G.WHYTE		
0			FIRST ISSUE / EERSTE UITREIKING				
REV	AUTH MAG	DATE DATUM	REVISION/REVISED INDEX REF/INDEXSWERW	BY DEUR	CHKD NAGES	D-DT-	REFERENCE DRAWINGS VERWYSINGSTEKENINGE
			MINI-SUBSTATION EARTHING FOR MINI-SUBSTATION CONNECTED TO OVERHEAD LINE				
CHKD NAGES	G. WHYTE	10.12. 1999	D-DT-0855 (Sheet 3 of 3)				
DRAWN GETEKEN	P.A.V.	05-10 1995					
SCALE SKAAL	1 : 50	APPROVED P. CROWDY	CAD.REF: SERIES 0800 FILE No. 0855	REV 2			
		21.12.1999					



NOTE :
MINIMUM CREEPAGE
DISTANCE 140mm

SAP MATERIAL No.:		0165094							
SHORT DESCRIPTION:		S/ARR,NEUTRAL 6kV 10kA O/BUSH D3088							
TECH. DESCRIPTION:									
DISTRIBUTION CLASS GAPLESS SURGE ARRESTER *									
USED FOR SEPARATION OF IV AND LV OR MV AND LV EARTHS ON									
OPEN BUSHING TRANSFORMERS *									
CLASS 1 * DISCHARGE CURRENT 10kA *									
MCOV 5kV * MAXIMUM RESIDUAL VOLTAGE 19.5kV *									
MINIMUM CREEPAGE 140mm * COMPLETE WITH CONDUCTIVE MOUNTING									
BRACKET AND 16mm SQ.x250mm LONG INSULATED COPPER TAIL *									
ESKOM DRAWING No. D-DT-3088 *									
ITEM		:- NEUTRAL S/ARR,6kV 10kA (OPEN BUSHING)							
MATERIAL SPECIFICATION		:-							
CORROSION SPECIFICATION		:-							
STANDARD SPECIFICATION		:- IEC 99-4							
ESKOM SPECIFICATION		:-							
TEST & CERTIFICATION REQUIREMENTS :-									
INSPECTION		Yes	No	ESKOM RELEASE NOTE		Yes	No		
IDENTIFICATION:- INDELIBLE MANUFACTURES TRADEMARK & PART No. ON ALL ITEMS									
9	LOGO CHANGED AS PER CORPORATE I.D.			D.D.N.	P.VERMAAK	J.SCHOLTZ	15.06.04		
8	IV APPLICATION ADDED			P.A.V.	R. THERON	P. CROWDY	22.11.99		
7	CSP NEUTRAL SA REMOVED			P.A.V.	M.RAPAPA	R. THERON	03.09.98		
REV	REVISION DESCRIPTION			BY	CHKD	AUTH	DATE		
AUTH:	P. CROWDY	DATE:	26-05-94	SCALE			SAP No:		
				NTS			0165094		
CHKD:	J. SWAN	DATE:	26-05-94	CAD REF:					
				SERIES 3000			SET	SHEET	REV
				FILE No:			1	1	9
DRAWN:	A.STEWART	DATE:	08-09-92	3088					
					D-DT- 3088				

1 2 3 4 5 6 7 8

A

B

C

D

E

F

T-OFF

BARE WIRE TO ABC

BARE WIRE PHASE
CONDUCTOR

LUGTAP
(D-DT-3156)

INSULATED LUG
(D-DT-)

ABC PHASE

BARE WIRE
NEUTRAL
CONDUCTOR

ABC BARE NEUTRAL

H-CRIMP + COVER
(D-DT-3019) OR
PG CLAMP
(D-DT-3058)

T-OFF

ABC TO ABC

IPC
(D-DT-3039)

ABC PHASE
CONDUCTOR

ABC PHASE

ABC BARE NEUTRAL
CONDUCTOR

ABC BARE NEUTRAL

H-CRIMP + COVER
(D-DT-3019) OR
PG CLAMP
(D-DT-3058)

T-OFF

BARE WIRE TO BARE WIRE

BARE WIRE
PHASE CONDUCTOR

BARE WIRE PHASE

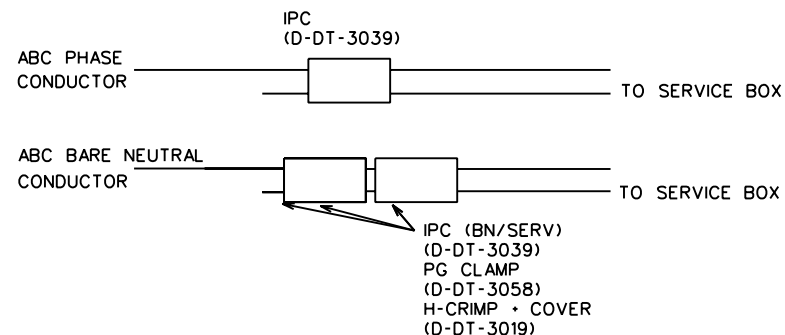
C-CONNECTOR
(D-DT-3162)
PG CLAMP
(D-DT-3058)
H-CRIMP + COVER
(D-DT-3019)

BARE WIRE NEUTRAL
CONDUCTOR

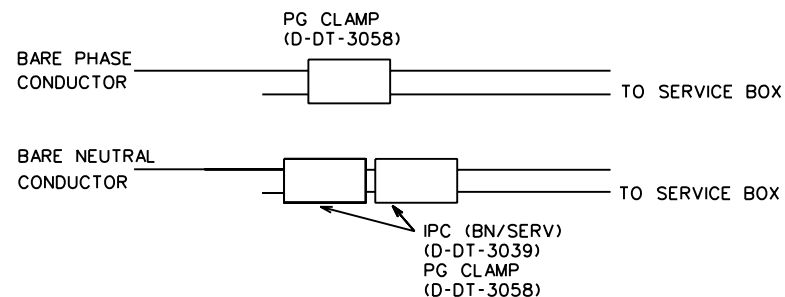
BARE WIRE NEUTRAL

C-CONNECTOR
(D-DT-3162)
PG CLAMP
(D-DT-3058)
H-CRIMP + COVER
(D-DT-3019)

SERVICE CONNECTION TAKE OFF FROM ABC

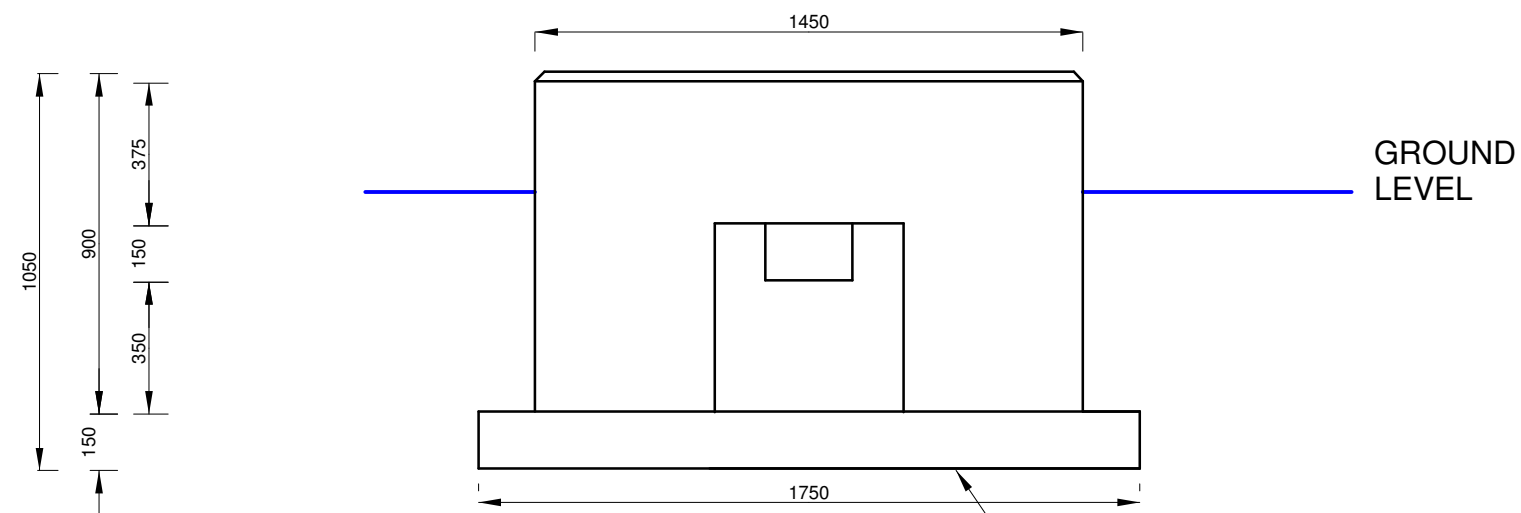


SERVICE CONNECTION TAKE OFF FROM BARE WIRE

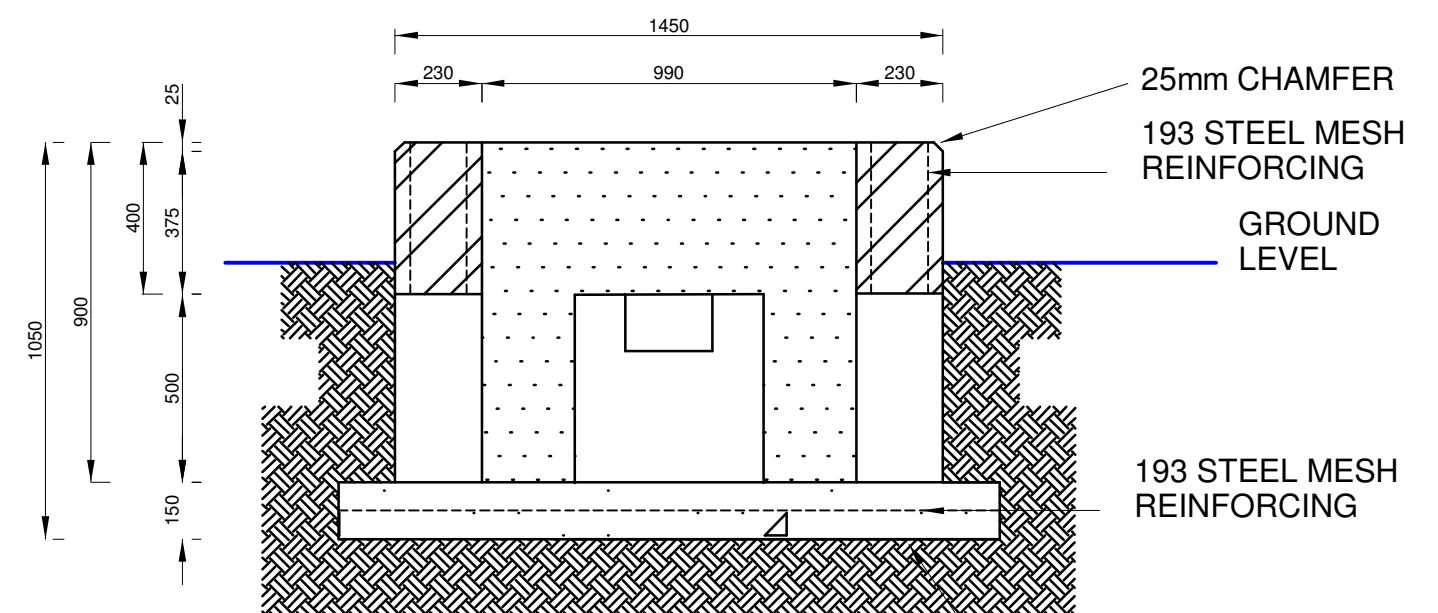


1	LOGO CHANGED AS PER NEW CORPORATE ID	PBM	P.A.V.	P.A.V.	26/10/2004	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.
		ESKOM LV RETICULATION PHASE AND NEUTRAL CONNECTION DETAILS				
AUTH: I. FERGUSON						
DATE: 27.02.1998						
CHKD: D.PILLAY						
DATE: 27.02.1998		D-DT-0314		SET	SHEET	REVISION
DRAWN: P.VERMAAK				1	1	1
DATE: 16.02.1998						

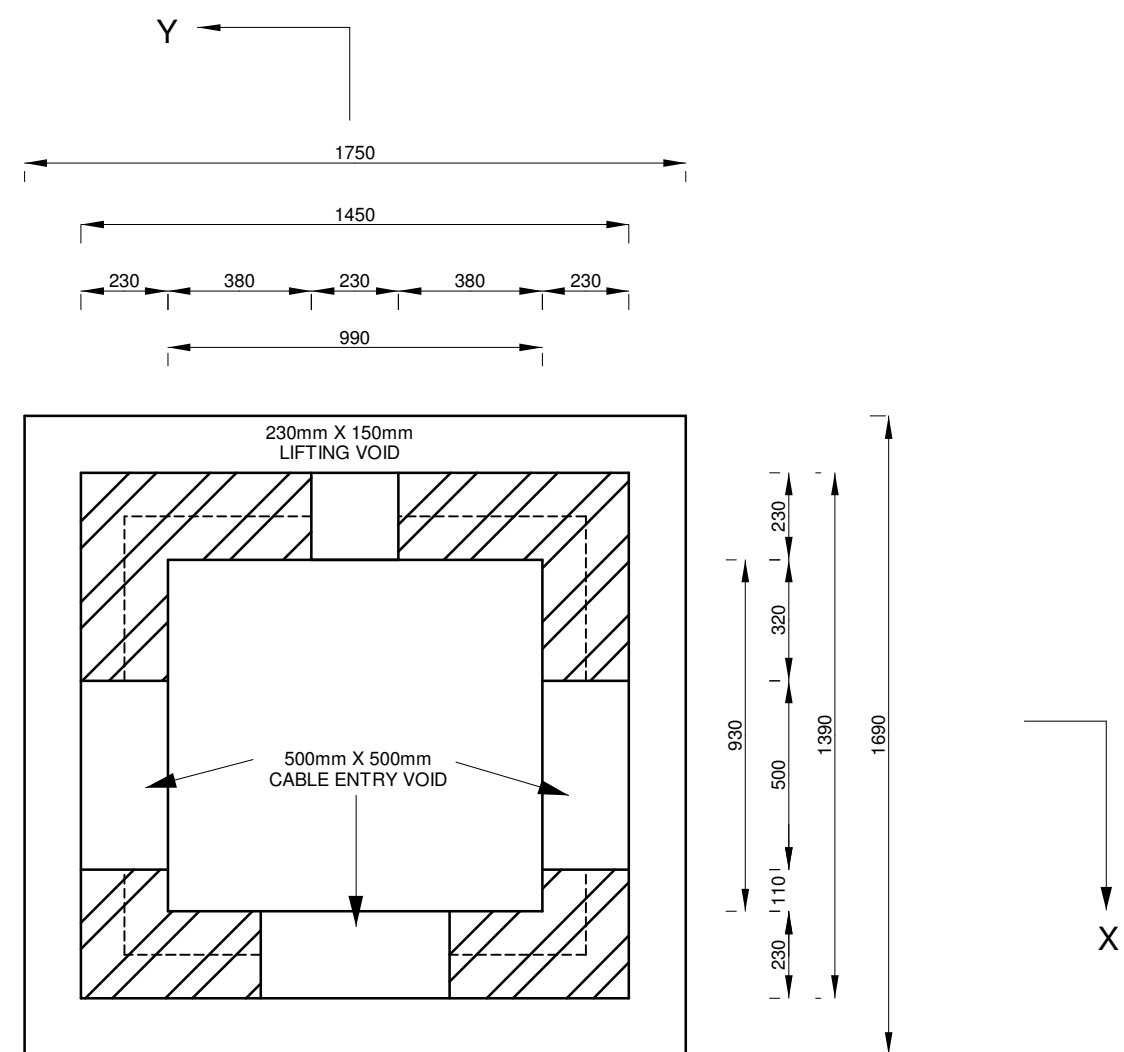
1 2 3 4 5 6 7 8 A3L



FRONT ELEVATION

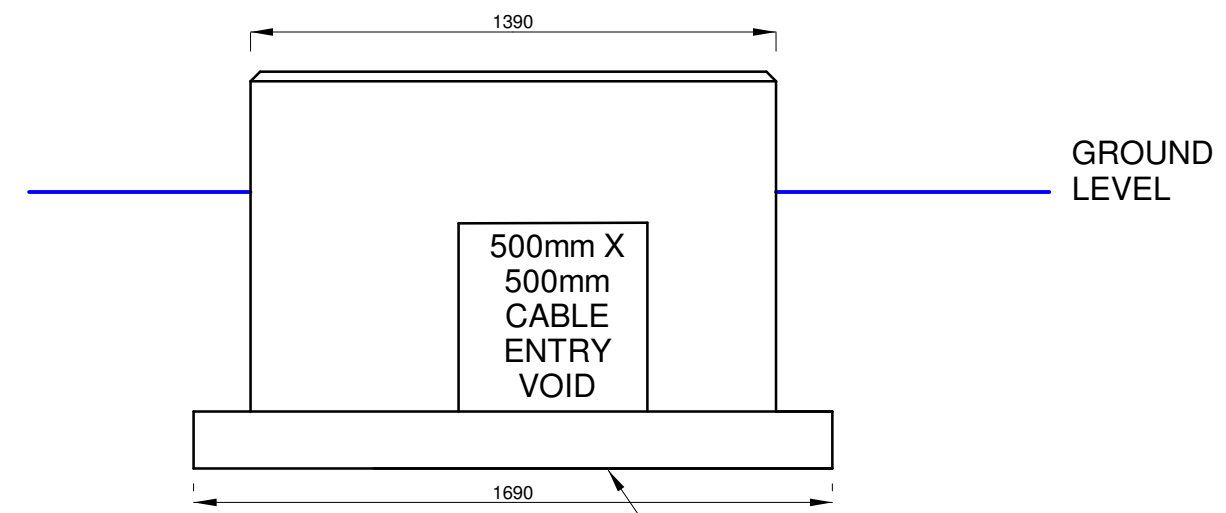


SECTION X-X

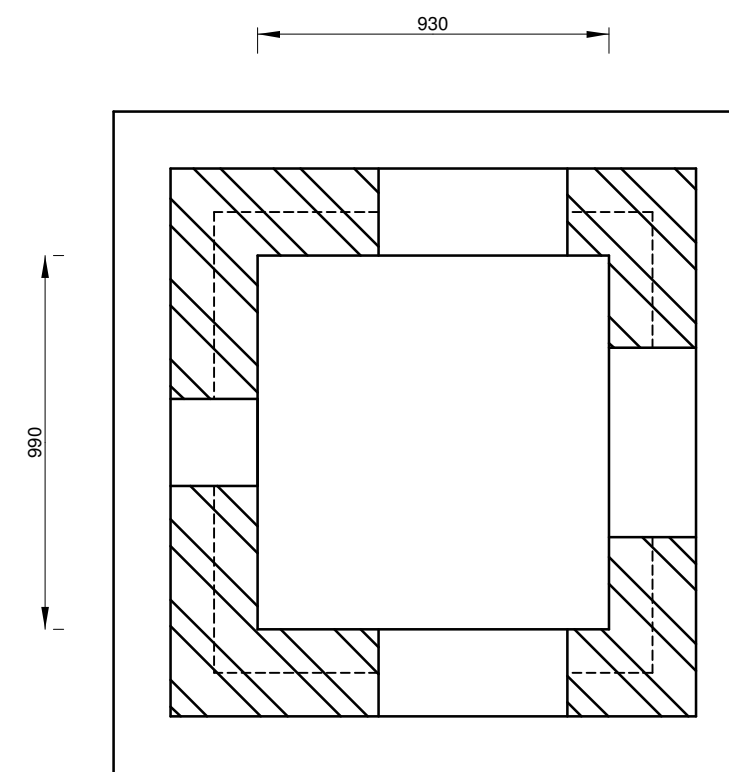


PLAN LAYOUT

PRE-CAST CONCRETE PLINTH
FRAME OF 30MPA CONCRETE
WITH STEEL MESH REINFORCING



SIDE ELEVATION



LEGENDE

NB. FOUNDATION SHALL BE
VISIBLE AT LEAST 300mm
FROM GROUND LEVEL.

GEORGE
MUNISIPALITEIT
MUNICIPALITY



ELEKTROTEGNIES AFDELING
ELECTRICAL DEPARTMENT

PROJEK / PROJECT

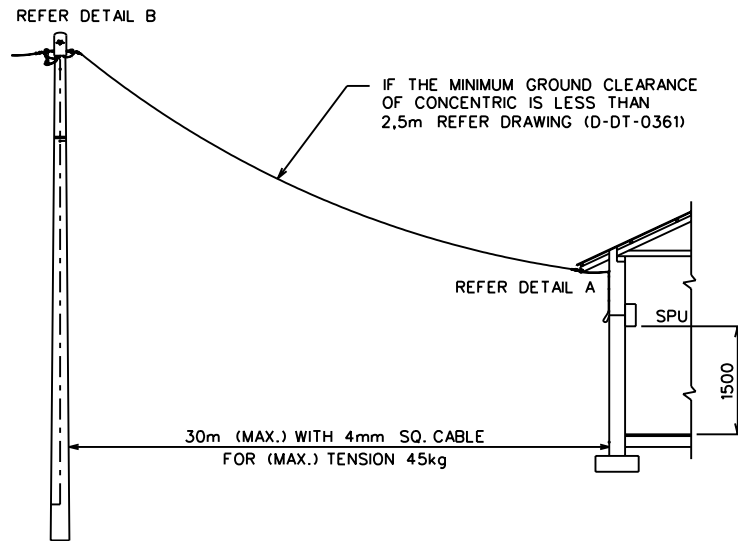
GEORGE STANDARD
PRECAST PLINTH

BESKRYWING / DESCRIPTION

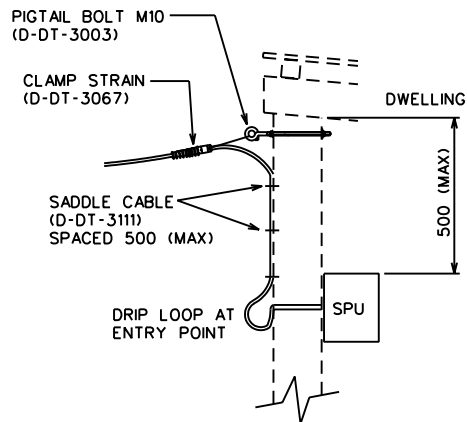
THREE WAY RMU
PLINTH FOR LUCY RMU

GETEKEN DRAWN	CDV	NAGESIEN CHECKED
ONTWERP DESIGN		INGENIEUR ENGINEER
SKAAL SCALE	1 : 20	DATUM DATE 2023/09/21

TEKENING DRAWING	No. F - 26	WYSIGING AMENDMENT
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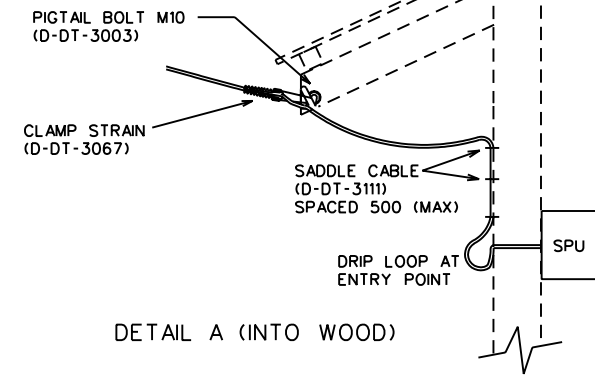
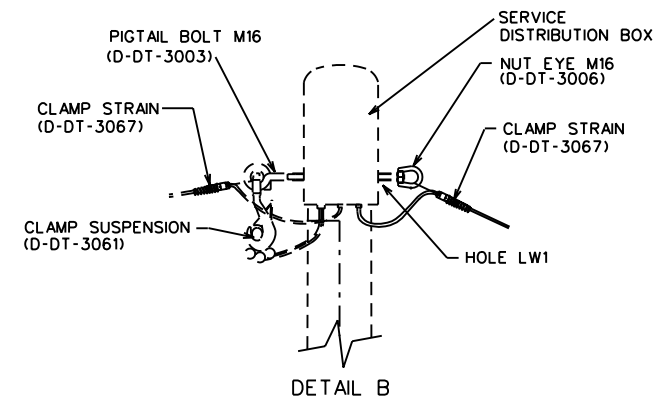
HOUSE CONNECTION FROM 7m POLE



DETAIL A (INTO BRICK WALL)

NOTE:

1. SITE CONDITIONS TO DETERMINE HOW CONNECTION WILL BE MADE.
2. BRICK AND WOOD WALL MUST BE SUITABLE FOR A MAX. LOAD OF 45kg.
3. METER MAY BE MOUNTED INSIDE OR OUTSIDE THE DWELLING.



DETAIL A (INTO WOOD)

12	LOGO CHANGED AS PER NEW CORPORATE ID	AKM	P.A.V.	P.A.V.	26/10/04	
11	DRIP LOOP ADDED FOR GALV. PIPE CONNECTION	P.A.V.	T.GILLARD	A. BEKKER	13/12/2001	
10	REED HOUSE ECU/ED ATTACHMENT DETAILS ADDED	P.A.V.	T.GILLARD	A. BEKKER	07/06/2001	
9	GRASS ROOF ATTACHMENT DETAILS ADDED	P.A.V.	T.GILLARD	A. BEKKER	07/02/2001	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.



LV /SERVICE RETICULATION

AUTH: S.A. CILLIERS

DATE: 10/01/1994

CHKD: NJVR

DATE: 01/03/1993

DRAWN: v BOSMAN

DATE: 10/10/1991

SERVICE CONNECTION TO HOUSE

D-DT-0360

SET

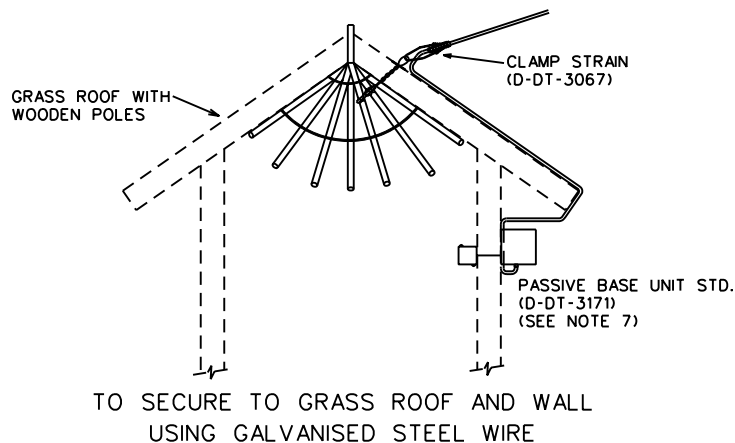
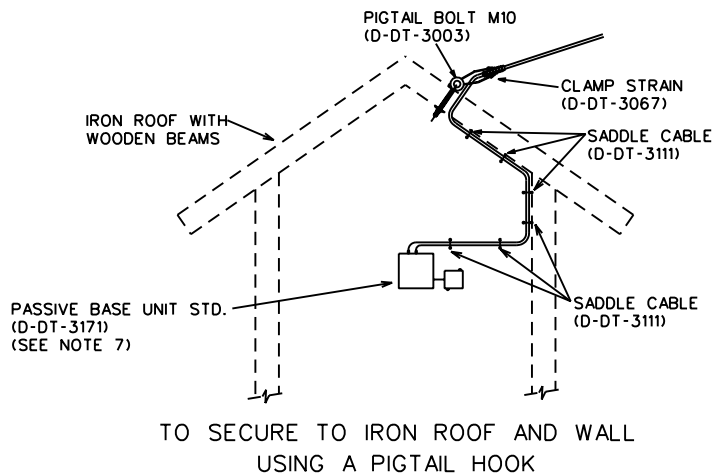
SHEET

REVISION

5

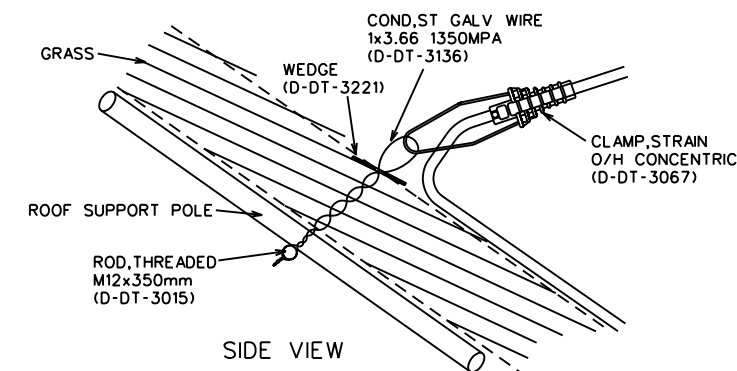
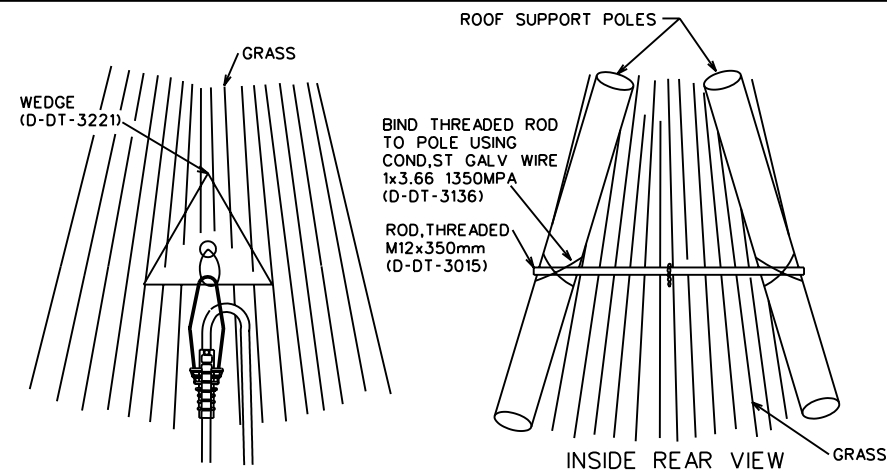
1

12



NOTE:

1. PRIOR APPROVAL NEEDS TO BE OBTAINED FROM THE LOCAL ESKOM ENGINEERING DEPARTMENT BEFORE THIS METHOD IS APPLIED IN EACH REGION.
2. ATTACH TO THE ROOF THEREBY ELIMINATING THE USE OF A SERVICE POLE.
3. ROOF STRUCTURE MUST BE SUITABLE FOR MAXIMUM SPAN TENSION.
4. SILICONE SEALANT SHALL BE APPLIED AT THE ENTRY POINT ON THE ROOF TO PREVENT WATER INGRESS INTO THE PREMISES.
5. NO SECONDARY DAMAGE SHALL OCCUR TO THE PREMISES.
6. METER MAY BE MOUNTED INSIDE OR OUTSIDE THE DWELLING.



12	LOGO CHANGED AS PER NEW CORPORATE ID	AKM	P.A.V.	P.A.V.	26/10/04	
11	DRIP LOOP ADDED FOR GALV. PIPE CONNECTION	P.A.V.	T.GILLARD	A. BEKKER	13/12/2001	
10	REED HOUSE ECU/ED ATTACHMENT DETAILS ADDED	P.A.V.	T.GILLARD	A. BEKKER	07/06/2001	
9	GRASS ROOF ATTACHMENT DETAILS ADDED	P.A.V.	T.GILLARD	A. BEKKER	07/02/2001	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.



AUTH: S.A. CILLIERS

DATE: 10/01/1994

CHKD: NJVR

DATE: 01/03/1993

DRAWN: v BOSMAN

DATE: 10/10/1991

LV /SERVICE RETICULATION

SERVICE CONNECTION TO HOUSE

D-DT-0360

SET

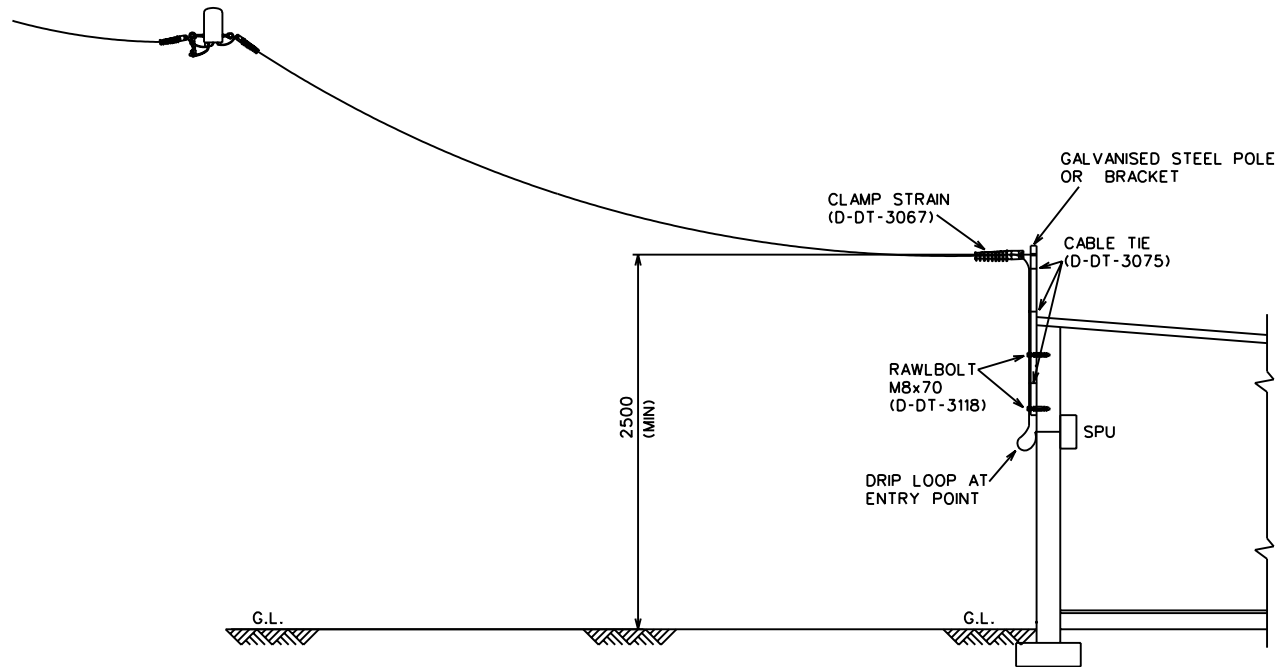
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SHEET

2

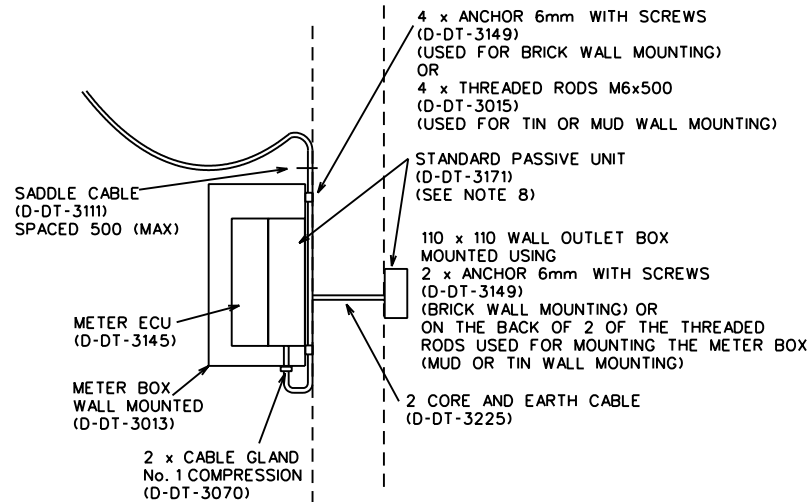
REVISION

12

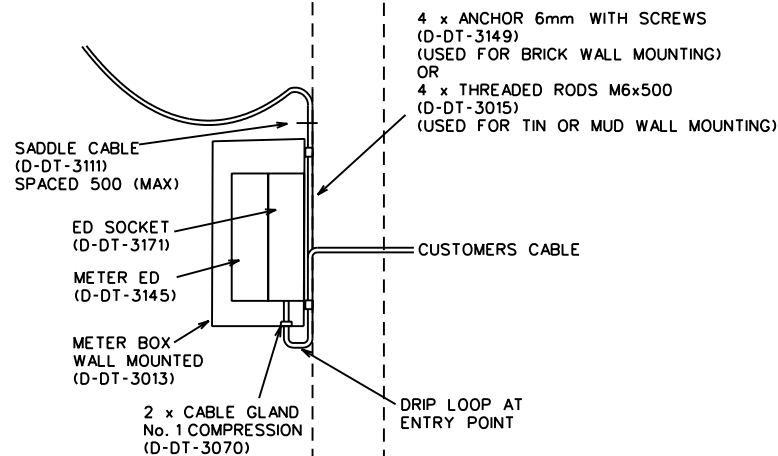


NOTE:
1. ON BRICK WALL AND CONCRETE WALL A GALVANISED STEEL POLE OR BRACKET CAN BE ATTACHED TO THE CUSTOMERS HOUSE TO MAINTAIN THE 2,5m CLEARANCE, WITHOUT THE USE OF A SERVICE POLE.
2. METER MAY BE MOUNTED INSIDE OR OUTSIDE THE DWELLING.

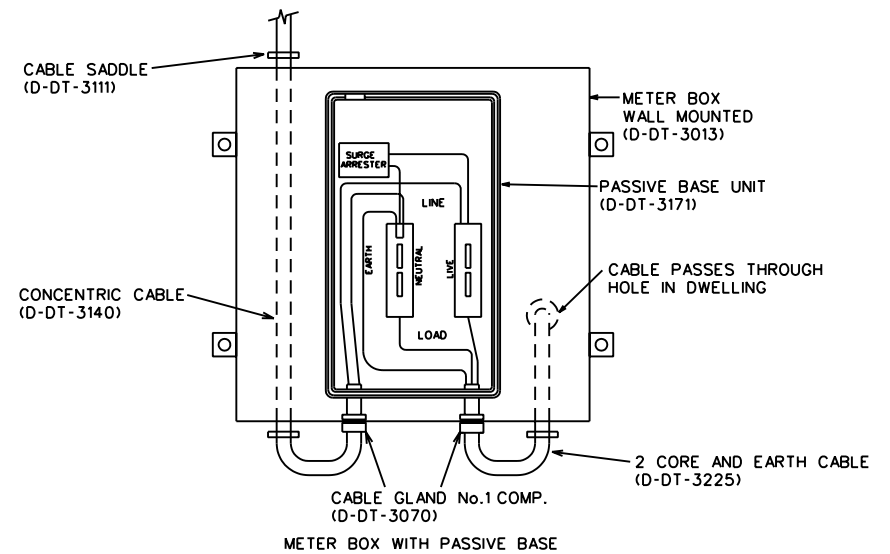
12	LOGO CHANGED AS PER NEW CORPORATE ID	AKM	P.A.V.	P.A.V.	26/10/04	
11	DRIP LOOP ADDED FOR GALV. PIPE CONNECTION	P.A.V.	T.GILLARD	A. BEKKER	13/12/2001	
10	REED HOUSE ECU/ED ATTACHMENT DETAILS ADDED	P.A.V.	T.GILLARD	A. BEKKER	07/06/1999	
9	GRASS ROOF ATTACHMENT DETAILS ADDED	P.A.V.	T.GILLARD	A. BEKKER	07/02/2001	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.
		LV /SERVICE RETICULATION SERVICE CONNECTION TO HOUSE (GALVANISED PIPE TO GAIN HEIGHT)				
AUTH: S.A. CILLIERS						
DATE: 10/01/1994						
CHKD: NJVR						
DATE: 01/03/1993		D-DT-0360		SET	SHEET	REVISION
DRAWN: v BOSMAN				5	3	12
DATE: 10/10/1991						



MOUNTING OF ECU OUTSIDE OF DWELLING



MOUNTING OF ED OUTSIDE OF DWELLING



NOTE:

1. CABLE ENTRY INTO METER BOX VIA NON-METALLIC CABLE GLAND AT THE BASE OF BOX.
2. THIS METHOD SHALL ONLY BE APPLIED WHERE THE WALL CONSTRUCTION CAN WITHSTAND THE WEIGHT OF THE METER BOX.
3. 2 CORE AND EARTH CABLE TO BE USED FROM THE ED BASE TO THE WALL OUTLET BOX.
4. THE STANDARD PASSIVE UNIT IS SPLIT WITH THE ED BASE OUTSIDE THE PREMISES AND THE WALL OUTLET BOX INSIDE THE PREMISES.
5. THE ENTRY/EXIT POINTS FROM THE METER BOX AND WALL OUTLET BOX SHALL BE WATER PROOF.
6. A FULL CERTIFICATE OF COMPLIANCE IS REQUIRED FOR THIS INSTALLATION.
7. FOR CONCENTRIC CABLE ATTACHMENT REFER TO D-DT-0360 SHEETS 1 AND 2.
8. THE STANDARD PASSIVE UNIT CONSISTS OF : 1x PASSIVE BASE AND 1x WALL OUTLET BOX.

12	LOGO CHANGED AS PER NEW CORPORATE ID	AKM	P.A.V.	P.A.V.	26/10/04	
11	DRIP LOOP ADDED FOR GALV. PIPE CONNECTION	P.A.V.	T.GILLARD	A. BEKKER	13/12/2001	
10	REED HOUSE ECU/ED ATTACHMENT DETAILS ADDED	P.A.V.	T.GILLARD	A. BEKKER	07/06/2001	
9	GRASS ROOF ATTACHMENT DETAILS ADDED	P.A.V.	T.GILLARD	A. BEKKER	07/02/2001	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.



AUTH: S.A. CILLIERS

DATE: 10/01/1994

CHKD: NJVR

DATE: 01/03/1993

DRAWN: v BOSMAN

DATE: 10/10/1991

LV /SERVICE RETICULATION
SERVICE CONNECTION TO
BRICK, TIN AND MUD HOUSES
WITH METER OUTSIDE

D-DT-0360

SET

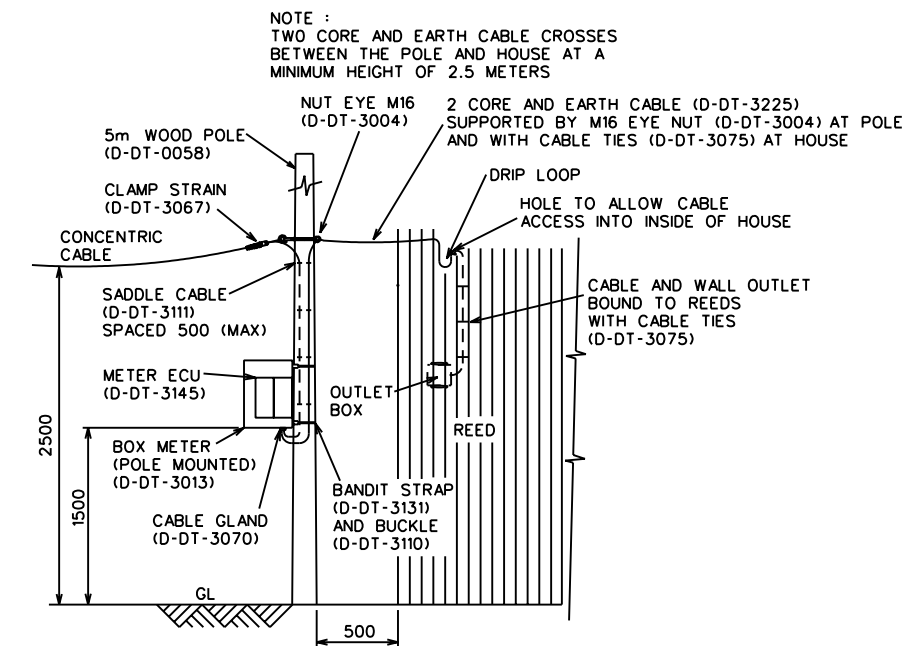
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SHEET

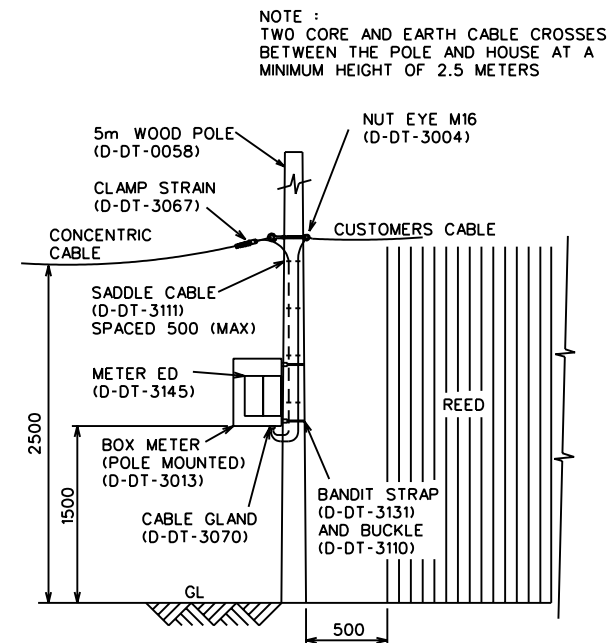
4

REVISION

12



MOUNTING OF ECU OUTSIDE OF DWELLING



MOUNTING OF ED OUTSIDE OF DWELLING

12	LOGO CHANGED AS PER NEW CORPORATE ID	AKM	P.A.V.	P.A.V.	26/10/04	
11	DRIP LOOP ADDED FOR GALV. PIPE CONNECTION	P.A.V.	T.GILLARD	A. BEKKER	13/12/2001	
10	REED HOUSE ECU/ED ATTACHMENT DETAILS ADDED	P.A.V.	T.GILLARD	A. BEKKER	07/08/2001	
9	GRASS ROOF ATTACHMENT DETAILS ADDED	P.A.V.	T.GILLARD	A. BEKKER	07/02/2001	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.



AUTH: S.A. CILLIERS

DATE: 10/01/1994

CHKD: NJVR

DATE: 01/03/1993

DRAWN: v BOSMAN

DATE: 10/10/1991

LV /SERVICE RETICULATION

SERVICE CONNECTION TO REED HOUSE
WITH METER OUTSIDE

D-DT-0360

SET

SHEET

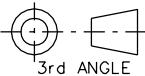
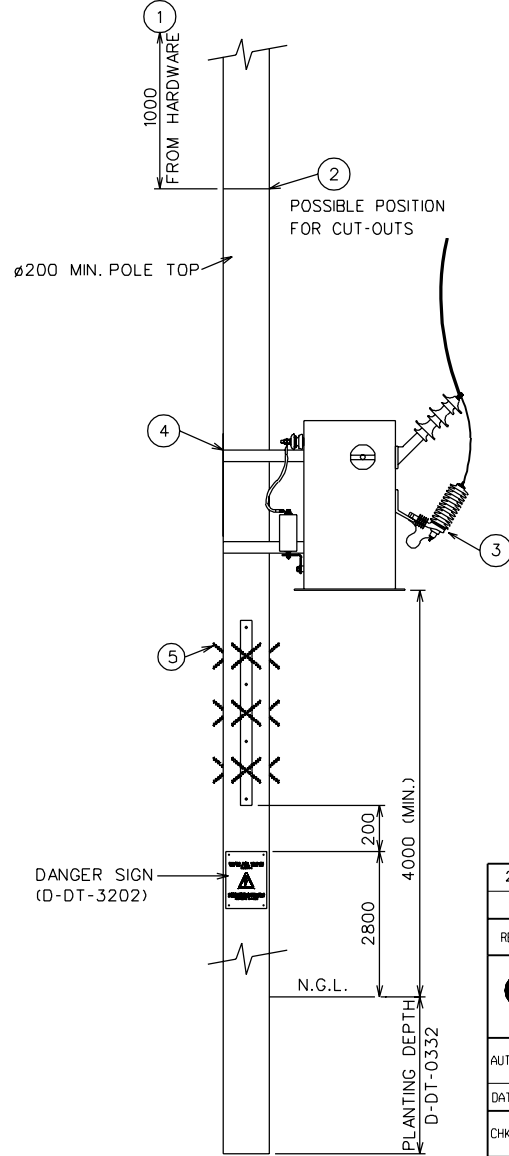
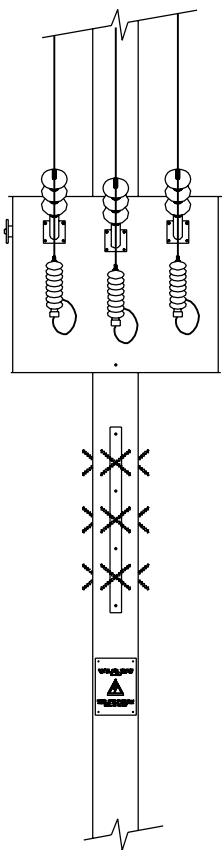
REVISION

5

5

12

A
B
C
D
E
F



- NOTE :
- 1. SUITABLE FOR TRANSFORMERS UPTO 100kVA.
 - 2. THREE PHASE TRANSFORMERS MUST NOT BE INSTALLED ON VERTICAL CONFIGURATION STRUCTURES.
 - 3. JUMPERS TO BE COVERED CONDUCTOR.

REFERENCE DRAWINGS		
ITEM	DESCRIPTION	DWG NO
STRUCTURES		
1	SINGLE POLES	D-DT-1700 TO D-DT-1749
EQUIPMENT ATTACHMENTS		
2	-EQUIPMENT LINKS	D-DT-1849 D-DT-1850 D-DT-1869
3	-SURGE ARRESTERS	D-DT-0261
4	-TRANSFORMER MOUNTING SINGLE POLE	D-DT-0270
5	-ANTI-CLIMBING DEVICE	D-DT-0399
EQUIPMENT EARTHING		
	-TRANSFORMER SINGLE POLE MOUNTED - EARTHING DETAIL	D-DT-1860 (Sheet 2)

2	VARIOUS CHANGED DONE, ANTI-CLIMBING AND DANGER SIGNS ADDED	P.A.V.	R.THERON	R.THERON	06.06.2003	
1	SA CONNECTIONS MODIFIED	P.A.V.	R.THERON	P.CROWDY	06.12.2000	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.

AUTH: B. BRANFIELD
DATE: 13/01/1999
CHKD: B. BRANFIELD
DATE: 13/01/1999
DRAWN: P. VERMAAK
DATE: 09/07/1998

MV RETICULATION TRANSFORMER
5-100kVA / SINGLE POLE MOUNTED
GENERAL ARRANGEMENT

D-DT-1860

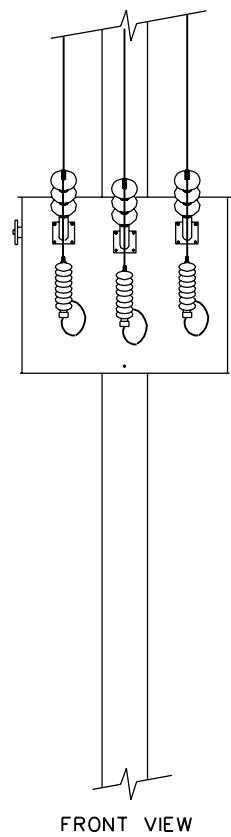
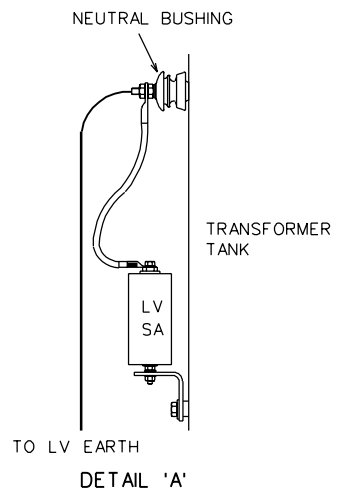
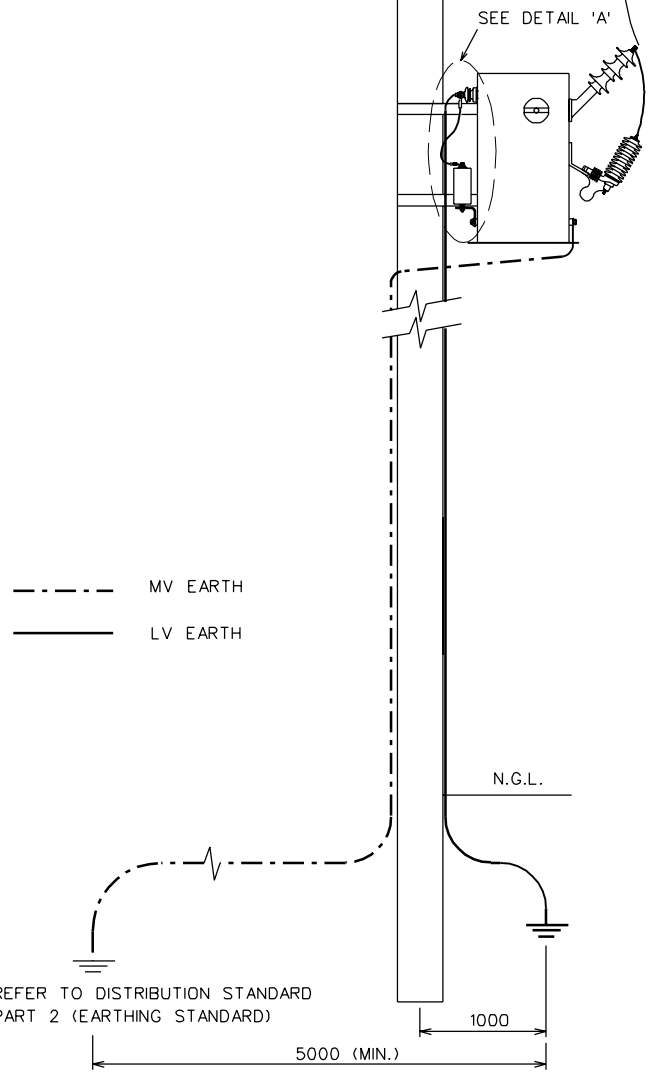
SET	SHEET	REVISION
2	1	2

A
B
C
D
E
F

1 2 3 4 5 6 7 8

A
B
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D
E

Page No. 2DC47



2	VARIOUS CHANGED DONE, ANTI-CLIMBING AND DANGER SIGNS ADDED	P.A.V.	R.THERON	R.THERON	06.06.2003	
1	SA CONNECTIONS MODIFIED	P.A.V.	R.THERON	P.CROWDY	06.12.2000	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.

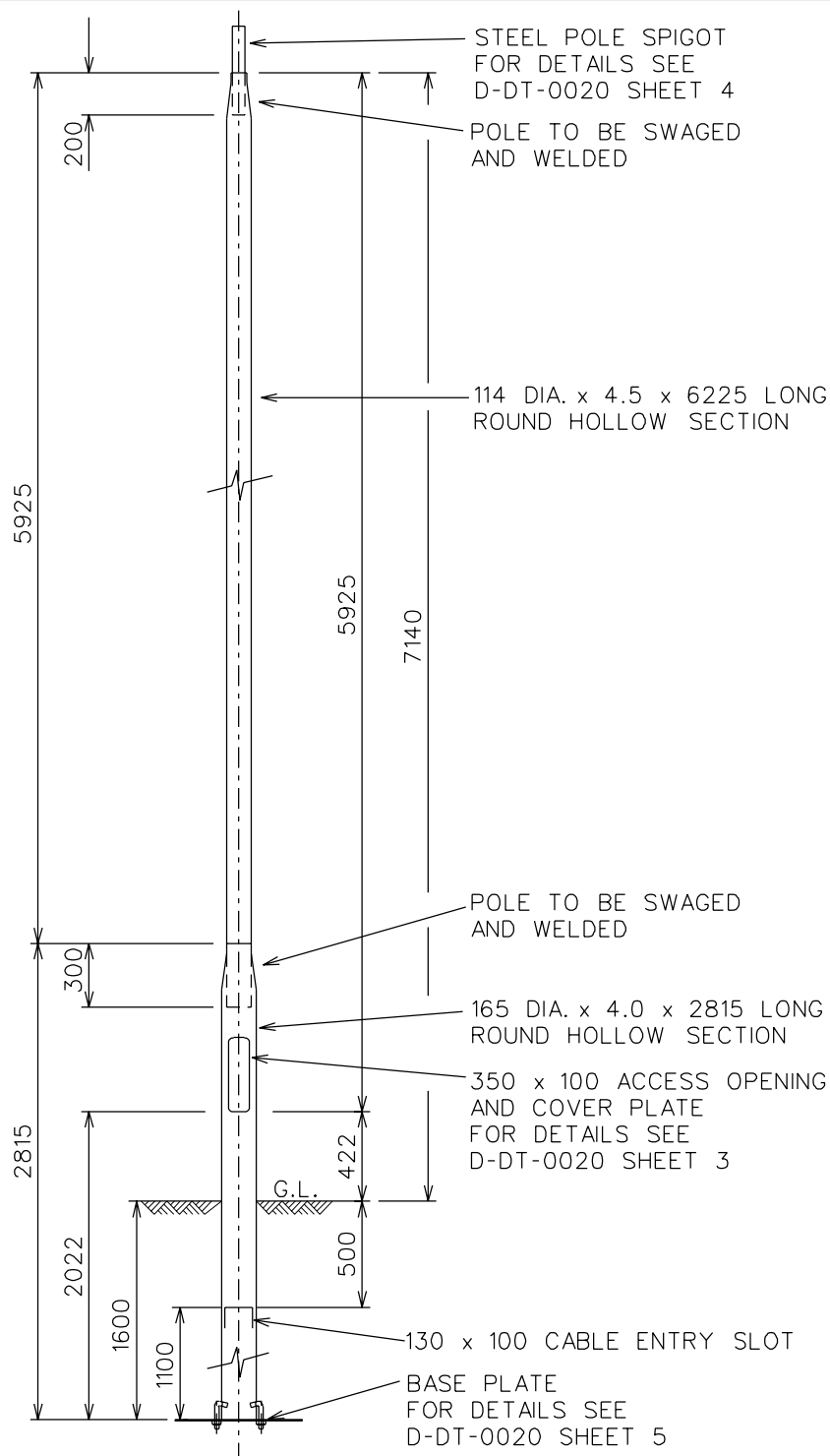
	MV RETICULATION TRANSFORMER 5-100kVA / SINGLE POLE MOUNTED EARTHING DETAILS					
	AUTH: B. BRANFIELD					
	DATE: 13/01/1999					
	CHKD: B. BRANFIELD					
	DATE: 13/01/1999					
DRAWN: P. VERMAAK						
DATE: 09/07/1998						
D-DT-1860				SET	SHEET	REVISION
				2	2	2

DRAWING DETAILS SEE SHEET 2

SAP MATERIAL No. 0164661
 SHORT DESCRIPTION POLE,ST 8.74m STREET LIGHT ASSY D0020
 TECH. DESCRIPTION

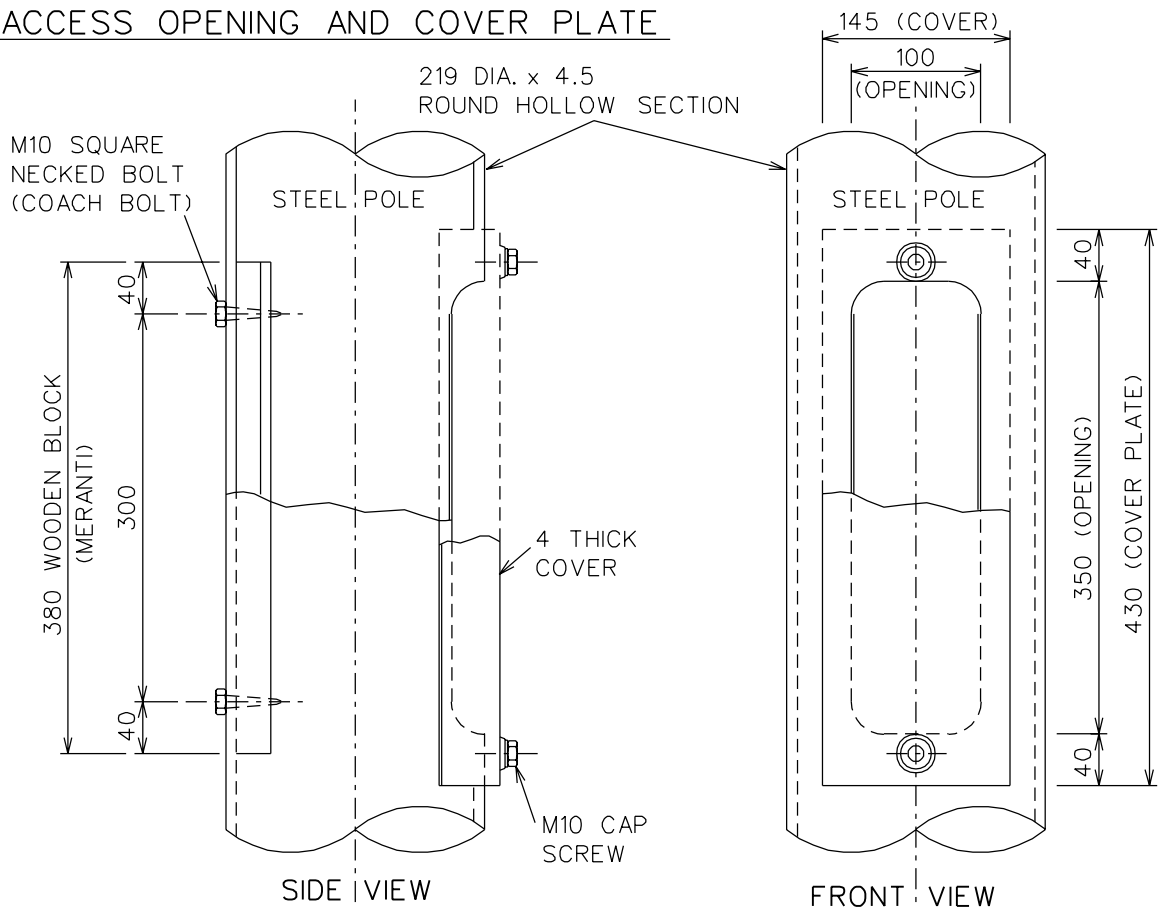
STEEL POLE (STREET LIGHTING) TO TAKE SINGLE OR DOUBLE
 3000 OUTREACH * OVERALL LENGTH 8,74m *
 ROUND HOLLOW SECTIONS * HOT DIPPED GALVANISED *
 FABRICATION SHALL CONFORM TO SABS 0214 *
 POLE STRUCTURAL LOADING AND DESIGN TO SABS 0225
 (TERRAIN CATEGORY 2, CLASS B AT SEA LEVEL *
 WELDING TO SABS 044-1, 2 AND 3 *
 CONSISTING OF :
 114 DIA. x 4.5 x 6225 LONG ROUND HOLLOW SECTION (1 OFF),
 165 DIA. x 4.0 x 2815 LONG ROUND HOLLOW SECTION (1 OFF),
 BASE PLATE DETAILS SEE D-DT-0020 SHEET 5 (1 OFF),
 350 x 100 ACCESS OPENING AND COVER PLATE DETAILS
 SEE D-DT-0020 SHEET 3 (1 OFF),
 STEEL POLE SPIGOT DETAILS SEE D-DT-0020 SHEET 4 (1 OFF) AND
 FOR SINGLE OR DOUBLE 3000 OUTREACH SEE D-DT-3403 FOR DETAILS *
 ESKOM DRAWING No. D-DT-0020 *

ITEM		:- POLE,ST 8.74m STREET LIGHT ASSY					
MATERIAL SPECIFICATION		:- SABS 657					
CORROSION SPECIFICATION		:- SABS 763					
STANDARD SPECIFICATION		:- SABS 0214, SABS 0225					
ESKOM SPECIFICATION		:-					
TEST AND CERTIFICATION REQUIREMENTS		:-					
INSPECTION		yes	no	ESKOM RELEASE NOTE		yes	no
IDENTIFICATION		:- INDELIBLE MANUFACTURERS TRADEMARK & PART No. ON ALL ITEMS					
0			FIRST ISSUE / EERSTE UITREIKING				
REV	AUTH MAG	DATE DATUM	REVISION/REVISIES		BY DEUR	CHKD NAGES	D-DT- REFERENCE DRAWINGS VERWYSINGSTEKENINGE
			INDEX REF/INDEKSVERW				
DRAWN BY P.A. VERMAAK		DATE 19.01.1999	CHECKED A. ABROSIE		DATE 30.08.1999		N.S.N. No. SEE ABOVE
APPROVED P. CROWDY		DATE 30.08.1999	SCALE 1 : 30	CAD REF. CHALL\BUY3000 FILE No. 0020			D-DT-0020 (Sheet 1 of 5)



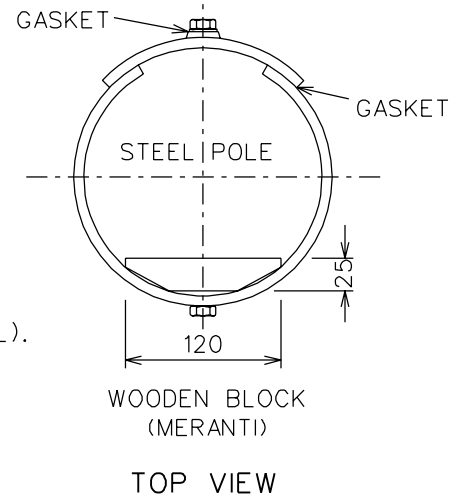
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			INDEX REF/INDEKSVERW				
DRAWN BY P.A. VERMAAK		DATE 19.01.1999	CHECKED A. ABROSIE		DATE 30.08.1999	 ESKOM	N.S.N. No. SEE SHEET 1
APPROVED P. CROWDY		DATE 30.08.1999	SCALE 1 : 30	CAD REF. CHALL\BUY3000 FILE No. 0020			D-DT-0020 (Sheet 2 of 5)

ACCESS OPENING AND COVER PLATE

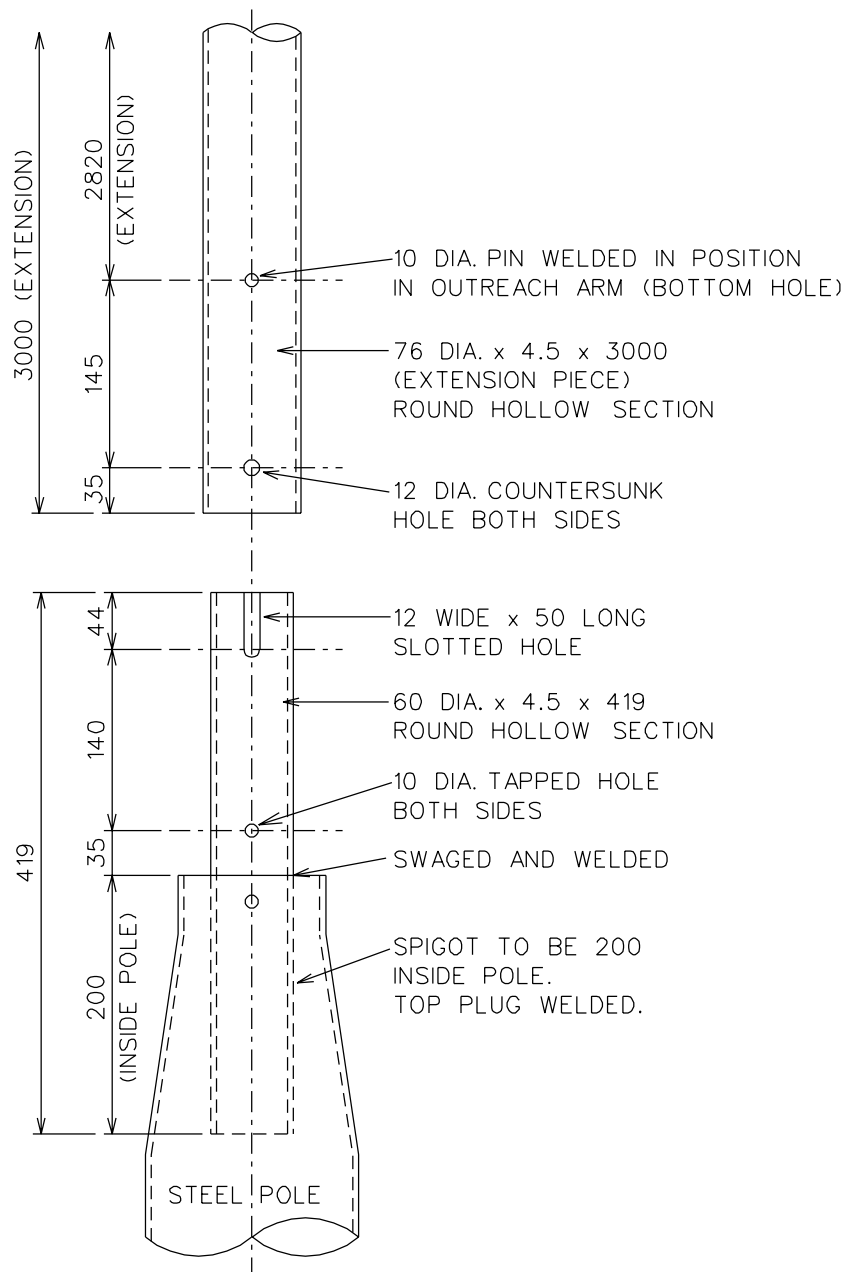


NOTES :

1. GALVANISING OF BASE PLATES AND STEEL POLE SHALL BE ACCORDING TO SABS 763.
2. ALL STEEL TUBING SHALL CONFORM TO SABS 657 GRADE 300W UTS = 450MPA.
3. FABRICATION SHALL CONFORM TO SABS 0214.
4. POLE STRUCTURAL LOADING AND DESIGN SHALL CONFORM TO SABS 0225 (TERRAIN CATEGORY 2, CLASS B AT SEA LEVEL).
5. WELDING SHALL CONFORM TO SABS 044 PARTS 1, 2 AND 3.
6. FITTING REQUIREMENTS FOR POST TOP ENTRY SHALL BE 76 DIA. x 100mm LONG.

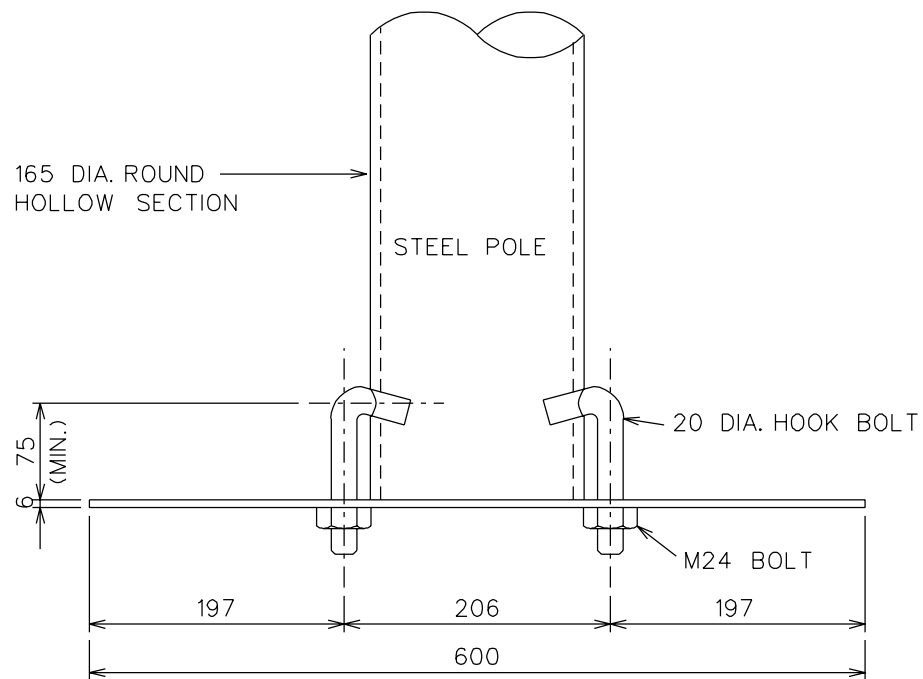


0			FIRST ISSUE / EERSTE UITREIKING				
REV	AUTH MAG	DATE DATUM	REVISION/REVISIES		BY DEUR	CHKD NAGES	D-DT- REFERENCE DRAWINGS VERWYSINGSTEKENINGE
			INDEX REF/INDEKSVERW				
DRAWN BY P.A. VERMAAK		DATE 19.01.1999	CHECKED A. ABROSIE		DATE 30.08.1999	 ESKOM	N.S.N. No. SEE SHEET 1
APPROVED P. CROWDY		DATE 30.08.1999	SCALE 1 : 50	CAD REF. CHALL\BUY3000 FILE No. 0020			D-DT-0020 (Sheet 3 of 5)



STEEL POLE SPIGOT DETAILS

0			FIRST ISSUE / EERSTE UITREIKING				
REV	AUTH MAG	DATE DATUM	REVISION/REVISIES INDEX REF/INDEXVERW	BY DEUR	CHKD NAGES	D-DT-	REFERENCE DRAWINGS VERWYSINGSTEKENINGE
DRAWN BY P.A. VERMAAK		DATE 19.01.1999	CHECKED A. ABROSIE	DATE 30.08.1999	N.S.N. No. SEE SHEET 1		
APPROVED P. CROWDY		DATE 30.08.1999	SCALE 1 : 50	CAD REF. CHALL\BUY3000 FILE No. 0020	 D-DT-0020 (Sheet 4 of 5)	REV 0	



BASE PLATE DETAILS

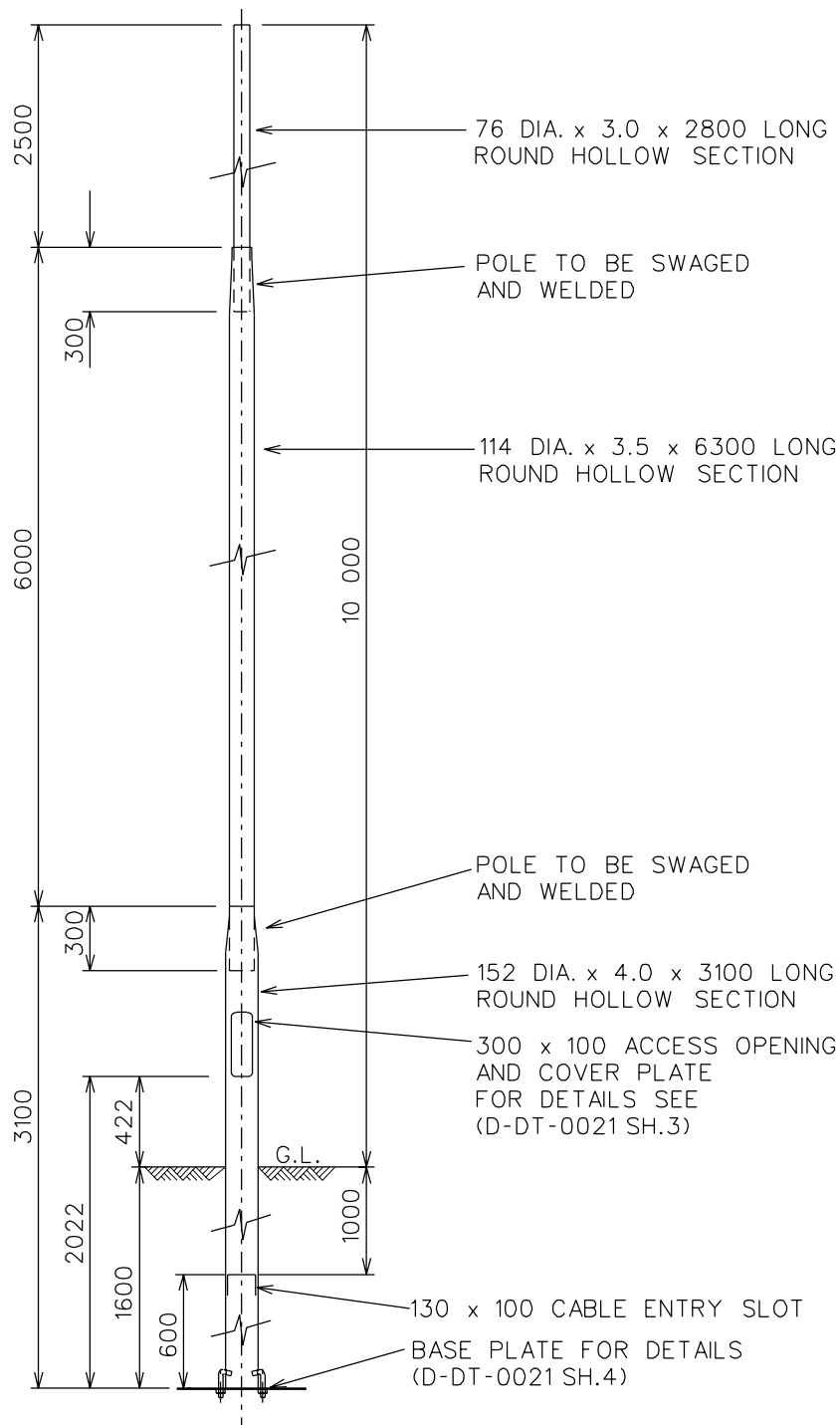
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REV	AUTH MAG	DATE DATUM	REVISION/REVISIES		BY DEUR	CHKD NAGES	D-DT- REFERENCE DRAWINGS VERWYSINGSTEKENINGE
			INDEX REF/INDEKSVERW				
DRAWN BY P.A. VERMAAK		DATE 19.01.1999	CHECKED A. ABROSIE		DATE 30.08.1999	 N.S.N. No. SEE SHEET 1	
APPROVED P. CROWDY		DATE 30.08.1999	SCALE 1 : 50	CAD REF. CHALL\BUY3000 FILE No. 0020		 D-DT-0020 (Sheet 5 of 5) REV 0	

DRAWING DETAILS SEE SHEET 2

SAP MATERIAL No. 0164672
 SHORT DESCRIPTION POLE,ST 10.0m STREET LIGHT ASSY D0021
 TECH. DESCRIPTION

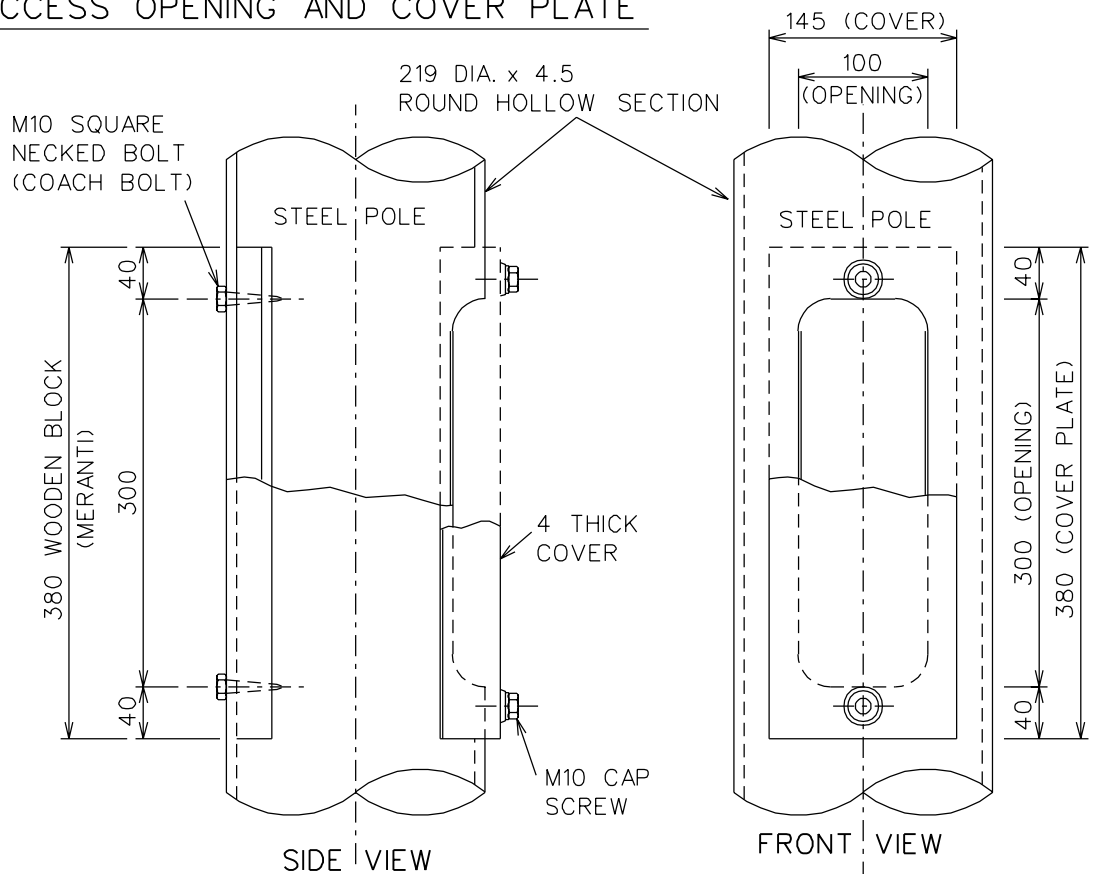
STEEL POLE (STREET LIGHTING) * OVERALL LENGTH 10m *
 ROUND HOLLOW SECTIONS * HOT DIPPED GALVANISED *
 FABRICATION SHALL CONFORM TO SABS 0214 *
 POLE STRUCTURAL LOADING AND DESIGN TO SABS 0225
 (TERRAIN CATEGORY 2, CLASS B AT SEA LEVEL *
 WELDING TO SABS 044-1, 2 AND 3 *
 CONSISTING OF :
 76 DIA. x 3.0 x 2800 LONG ROUND HOLLOW SECTION (1 OFF),
 114 DIA. x 3.5 x 6300 LONG ROUND HOLLOW SECTION (1 OFF),
 152 DIA. x 4.0 x 3100 LONG ROUND HOLLOW SECTION (1 OFF),
 BASE PLATE DETAILS SEE D-DT-0021 SHEET 4 (1 OFF) AND
 300 x 100 ACCESS OPENING AND COVER PLATE DETAILS
 SEE D-DT-0021 SHEET 3 (1 OFF) *
 ESKOM DRAWING No. D-DT-0021 *

ITEM		:- POLE,ST 10.0m STREET LIGHT ASSY					
MATERIAL SPECIFICATION		:- SABS 657					
CORROSION SPECIFICATION		:- SABS 763					
STANDARD SPECIFICATION		:- SABS 0214, SABS 0225					
ESKOM SPECIFICATION		:-					
TEST AND CERTIFICATION REQUIREMENTS		:-					
INSPECTION	yes	no	ESKOM RELEASE NOTE			yes	no
IDENTIFICATION		:- INDELIBLE MANUFACTURERS TRADEMARK & PART No. ON ALL ITEMS					
0	FIRST ISSUE / EERSTE UITREIKING						
REV	AUTH MAG	DATE DATUM	REVISION/REVISIES INDEX REF/INDEKSVERW		BY DEUR	CHKD NAGES	D-DT- REFERENCE DRAWINGS VERWYSINGSTEKENINGE
DRAWN BY P.A. VERMAAK		DATE 19.01.1999	CHECKED A. ABROSIE		DATE 30.08.1999	N.S.N. No. SEE ABOVE	
APPROVED P. CROWDY		DATE 30.08.1999	SCALE 1 : 30	CAD REF. CHALL\BUY3000 FILE No. 0021		 D-DT-0021 (Sheet 1 of 4)	
						REV	0



0			FIRST ISSUE / EERSTE UITREIKING				
REV	AUTH MAG	DATE DATUM	REVISION/REVISIES		BY DEUR	CHKD NAGES	D-DT- REFERENCE DRAWINGS VERWYSINGSTEKENINGE
			INDEX REF/INDEKSVERW				
DRAWN BY P.A. VERMAAK		DATE 19.01.1999	CHECKED A. ABROSIE		DATE 30.08.1999	 ESKOM	N.S.N. No. SEE SHEET 1
APPROVED P. CROWDY		DATE 30.08.1999	SCALE 1 : 30	CAD REF. CHALL\BUY3000 FILE No. 0021			D-DT-0021 (Sheet 2 of 4)

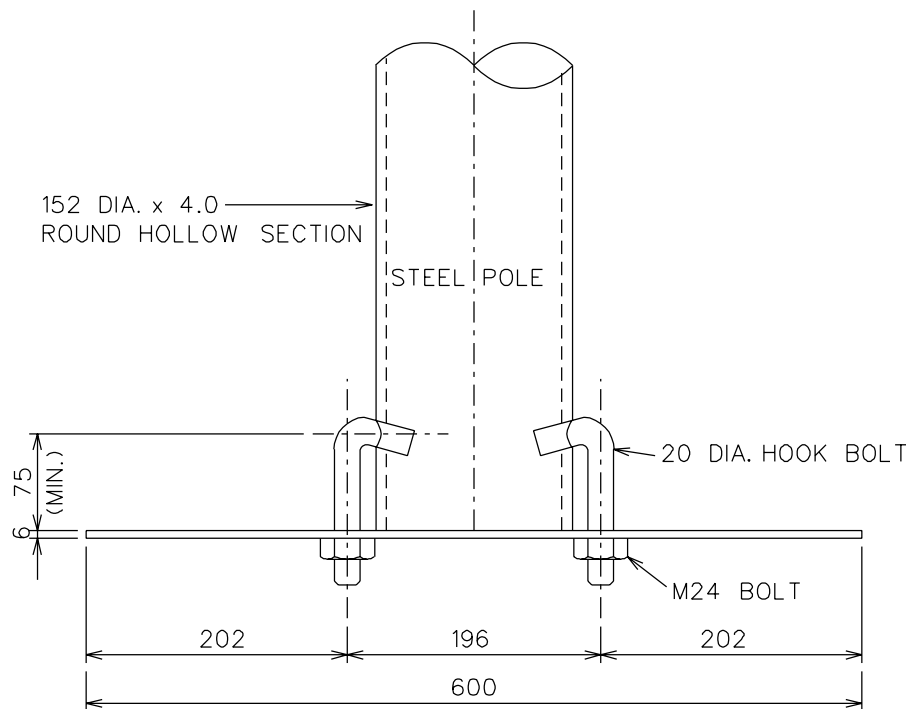
ACCESS OPENING AND COVER PLATE



NOTES :

1. GALVANISING OF BASE PLATES AND STEEL POLE SHALL BE ACCORDING TO SABS 763.
2. ALL STEEL TUBING SHALL CONFORM TO SABS 657 GRADE 300W UTS = 450MPA.
3. FABRICATION SHALL CONFORM TO SABS 0214.
4. POLE STRUCTURAL LOADING AND DESIGN SHALL CONFORM TO SABS 0225 (TERRAIN CATEGORY 2, CLASS B AT SEA LEVEL).
5. WELDING SHALL CONFORM TO SABS 044 PARTS 1, 2 AND 3.
6. FITTING REQUIREMENTS FOR POST TOP ENTRY SHALL BE 76 DIA. x 100mm LONG.

0			FIRST ISSUE / EERSTE UITREIKING				
REV	AUTH MAG	DATE DATUM	REVISION/REVISIES		BY DEUR	CHKD NAGES	D-DT- REFERENCE DRAWINGS VERWYSINGSTEKENINGE
			INDEX REF/INDEKSVERW				
DRAWN BY P.A. VERMAAK		DATE 19.01.1999	CHECKED A. ABROSIE		DATE 30.08.1999		N.S.N. No. SEE SHEET 1
APPROVED P. CROWDY		DATE 30.08.1999	SCALE 1 : 50	CAD REF. CHALL\BUY3000 FILE No. 0021			D-DT-0021 (Sheet 3 of 4)



BASE PLATE DETAILS

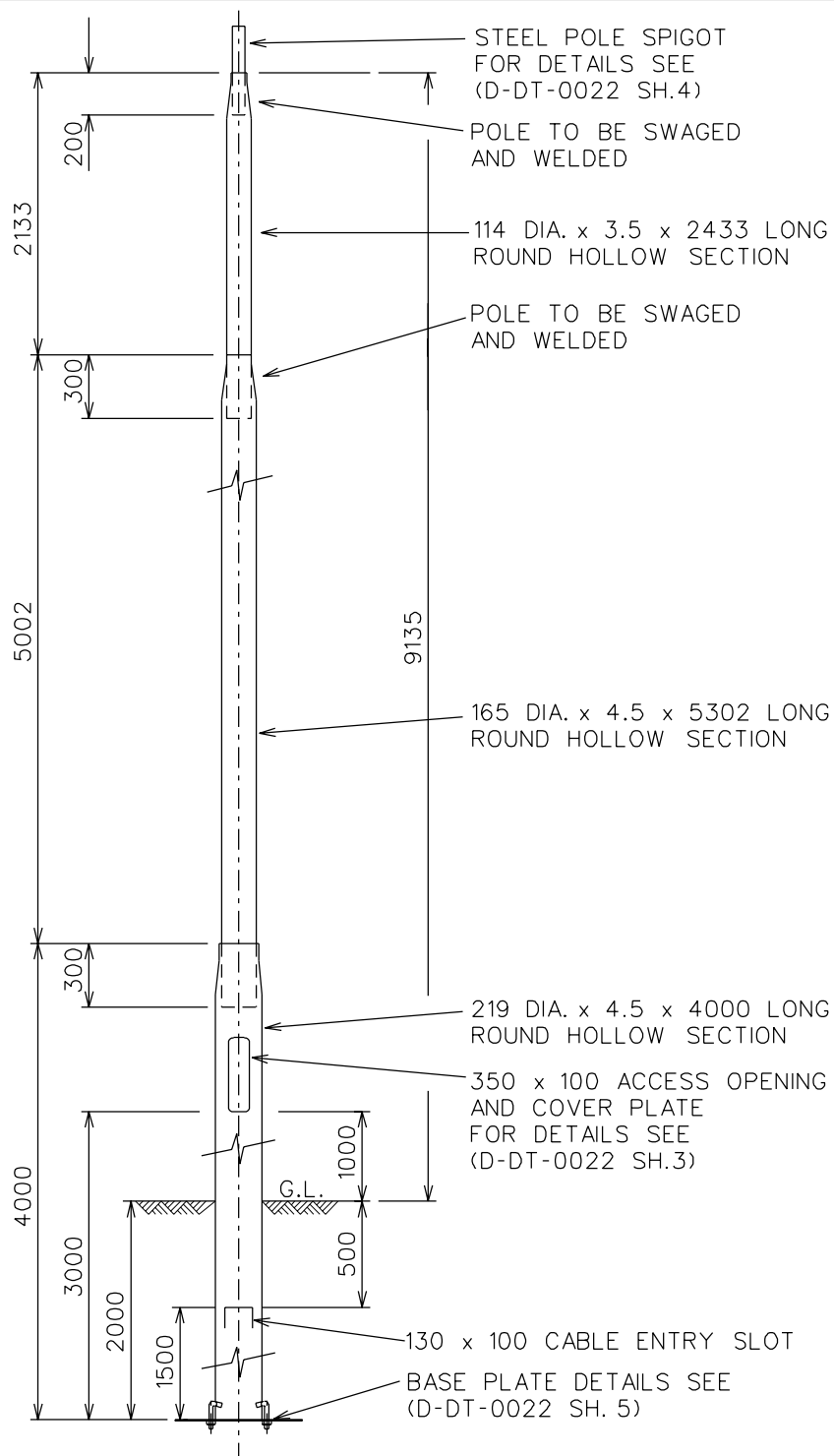
0			FIRST ISSUE / EERSTE UITREIKING				
REV	AUTH MAG	DATE DATUM	REVISION/REVISIES		BY DEUR	CHKD NAGES	D-DT- REFERENCE DRAWINGS VERWYSINGSTEKENINGE
			INDEX REF/INDEKSVERW				
DRAWN BY P.A. VERMAAK		DATE 19.01.1999	CHECKED A. ABROSIE		DATE 30.08.1999		N.S.N. No. SEE SHEET 1
APPROVED P. CROWDY		DATE 30.08.1999	SCALE 1 : 50	CAD REF. CHALL\BUY3000 FILE No. 0021			D-DT-0021 (Sheet 4 of 4)

DRAWING DETAILS SEE SHEET 2

SAP MATERIAL No. 0164662
 SHORT DESCRIPTION POLE,ST 11.135m STREET LIGHT ASSY D0022
 TECH. DESCRIPTION

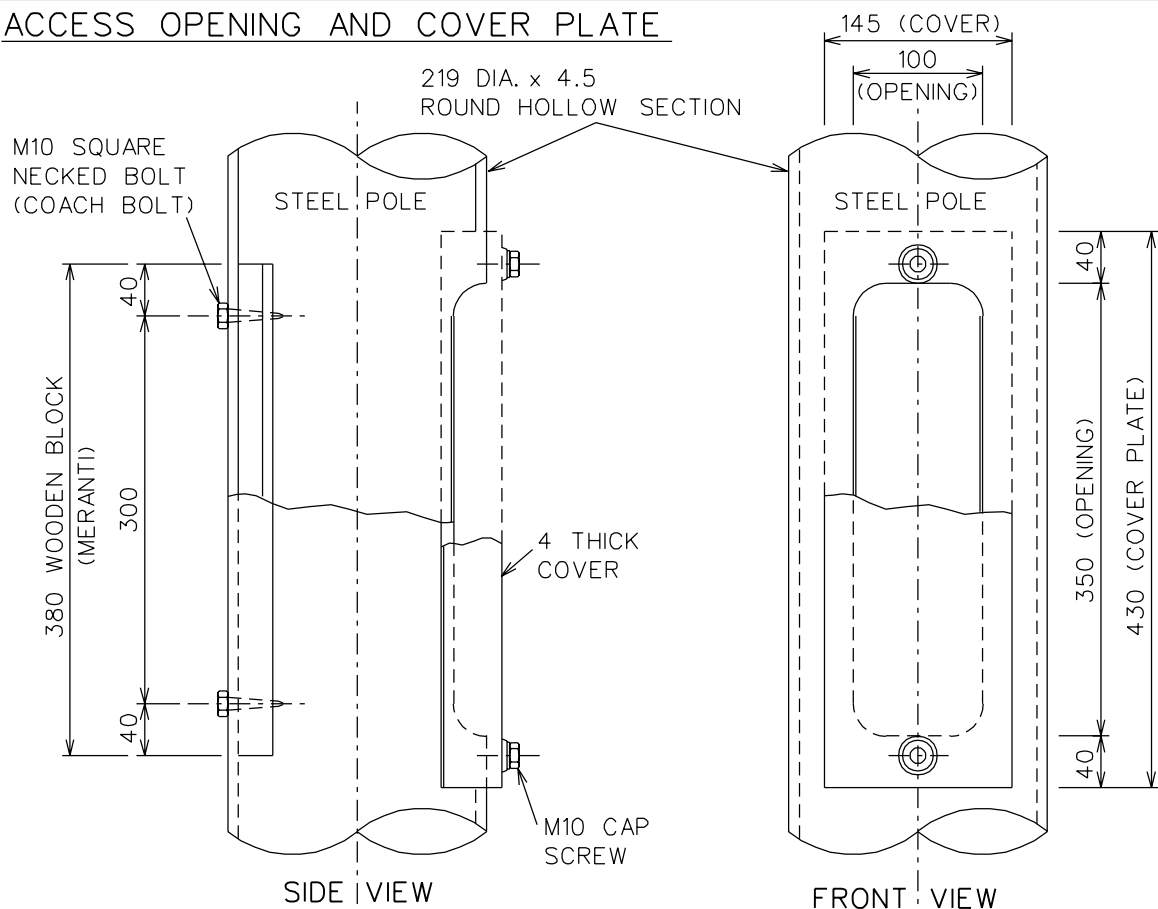
STEEL POLE (STREET LIGHTING) TO TAKE SINGLE OR DOUBLE
 3000 OUTREACH * OVERALL LENGTH 11,135m *
 ROUND HOLLOW SECTIONS * HOT DIPPED GALVANISED *
 FABRICATION SHALL CONFORM TO SABS 0214 *
 POLE STRUCTURAL LOADING AND DESIGN TO SABS 0225
 (TERRAIN CATEGORY 2, CLASS B AT SEA LEVEL *
 WELDING TO SABS 044-1, 2 AND 3 *
 CONSISTING OF :
 114 DIA. x 3.5 x 2433 LONG ROUND HOLLOW SECTION (1 OFF),
 165 DIA. x 4.5 x 5302 LONG ROUND HOLLOW SECTION (1 OFF),
 219 DIA. x 4.5 x 4000 LONG ROUND HOLLOW SECTION (1 OFF),
 BASE PLATE DETAILS SEE D-DT-0022 SHEET 5 (1 OFF),
 350 x 100 ACCESS OPENING AND COVER PLATE DETAILS
 SEE D-DT-0022 SHEET 3 (1 OFF),
 STEEL POLE SPIGOT DETAILS SEE D-DT-0022 SHEET 4 (1 OFF) AND
 FOR SINGLE OR DOUBLE 3000 OUTREACH SEE D-DT-3403 FOR DETAILS *
 ESKOM DRAWING No. D-DT-0022 *

ITEM		:- POLE,ST 11.135m STREET LIGHT ASSY					
MATERIAL SPECIFICATION		:- SABS 657					
CORROSION SPECIFICATION		:- SABS 763					
STANDARD SPECIFICATION		:- SABS 0214, SABS 0225					
ESKOM SPECIFICATION		:-					
TEST AND CERTIFICATION REQUIREMENTS		:-					
INSPECTION	yes	no	ESKOM RELEASE NOTE		yes	no	
IDENTIFICATION		:- INDELIBLE MANUFACTURERS TRADEMARK & PART No. ON ALL ITEMS					
0			FIRST ISSUE / EERSTE UITREIKING				
REV	AUTH MAG	DATE DATUM	REVISION/REVISED INDEX REF/INDEKSVERW		BY DEUR	CHKD NAGES	D-DT- REFERENCE DRAWINGS VERWYSINGSTEKENINGE
DRAWN BY P.A. VERMAAK		DATE 19.01.1999	CHECKED A. ABROSIE		DATE 30.08.1999	N.S.N. No. SEE ABOVE	
APPROVED P. CROWDY		DATE 30.08.1999	SCALE 1 : 30	CAD REF. CHALL\BUY3000 FILE No. 0022			D-DT-0022 (Sheet 1 of 5)
						REV	0



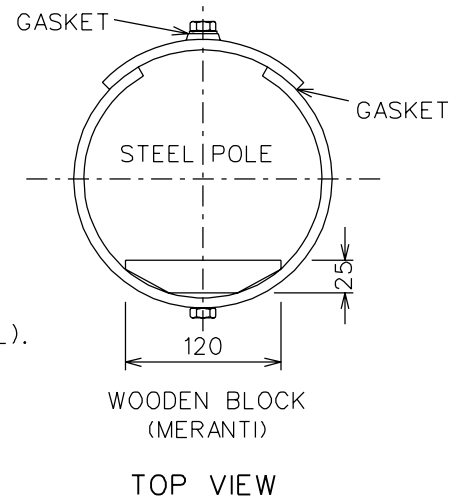
0			FIRST ISSUE / EERSTE UITREIKING				
REV	AUTH MAG	DATE DATUM	REVISION/REVISIES		BY DEUR	CHKD NAGES	D-DT- REFERENCE DRAWINGS VERWYSINGSTEKENINGE
			INDEX REF/INDEKSVERW				
DRAWN BY P.A. VERMAAK		DATE 19.01.1999	CHECKED A. ABROSIE		DATE 30.08.1999	 ESKOM	N.S.N. No. SEE SHEET 1
APPROVED P. CROWDY		DATE 30.08.1999	SCALE 1 : 30	CAD REF. CHALL\BUY3000 FILE No. 0022			D-DT-0022 (Sheet 2 of 5)

ACCESS OPENING AND COVER PLATE

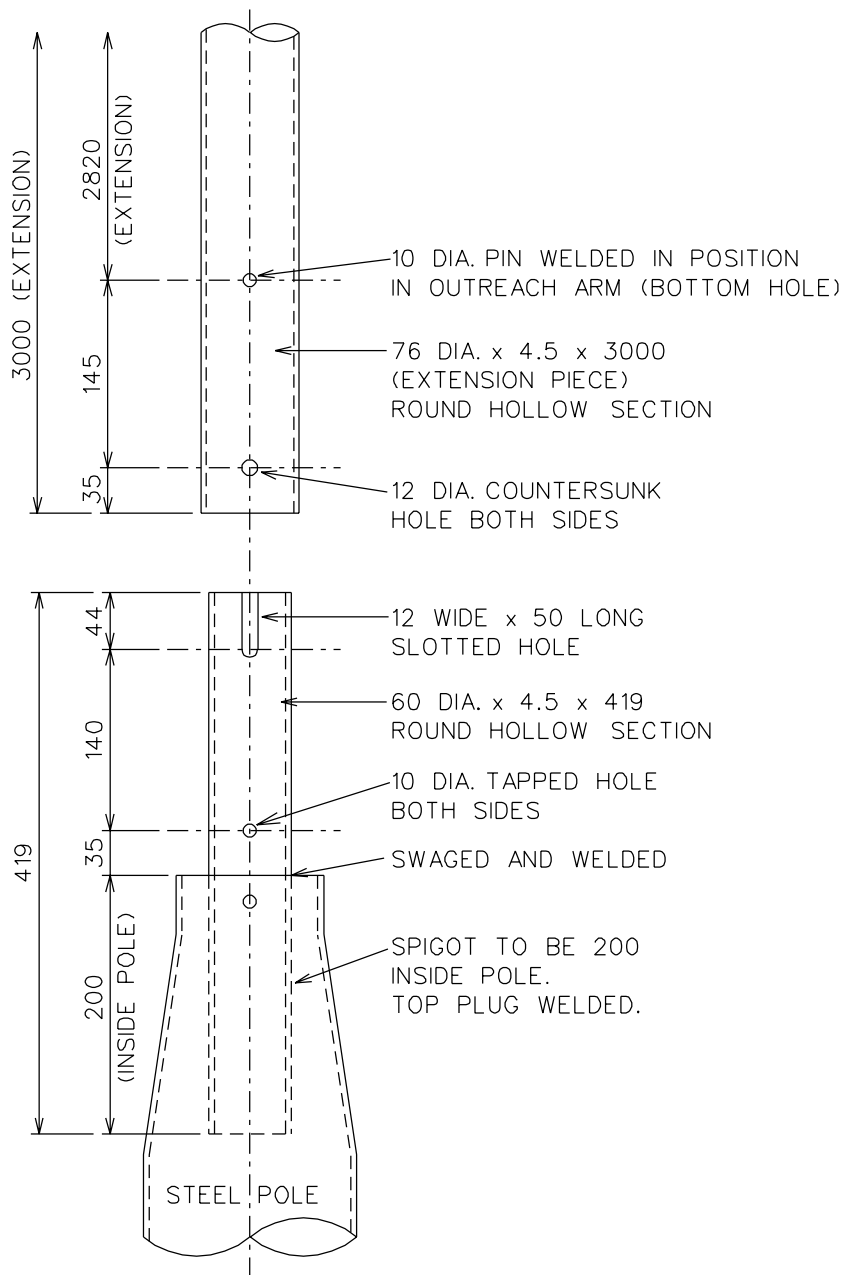


NOTES :

1. GALVANISING OF BASE PLATES AND STEEL POLE SHALL BE ACCORDING TO SABS 763.
2. ALL STEEL TUBING SHALL CONFORM TO SABS 657 GRADE 300W UTS = 450MPA.
3. FABRICATION SHALL CONFORM TO SABS 0214.
4. POLE STRUCTURAL LOADING AND DESIGN SHALL CONFORM TO SABS 0225 (TERRAIN CATEGORY 2, CLASS B AT SEA LEVEL).
5. WELDING SHALL CONFORM TO SABS 044 PARTS 1, 2 AND 3.
6. FITTING REQUIREMENTS FOR POST TOP ENTRY SHALL BE 76 DIA. x 100mm LONG.

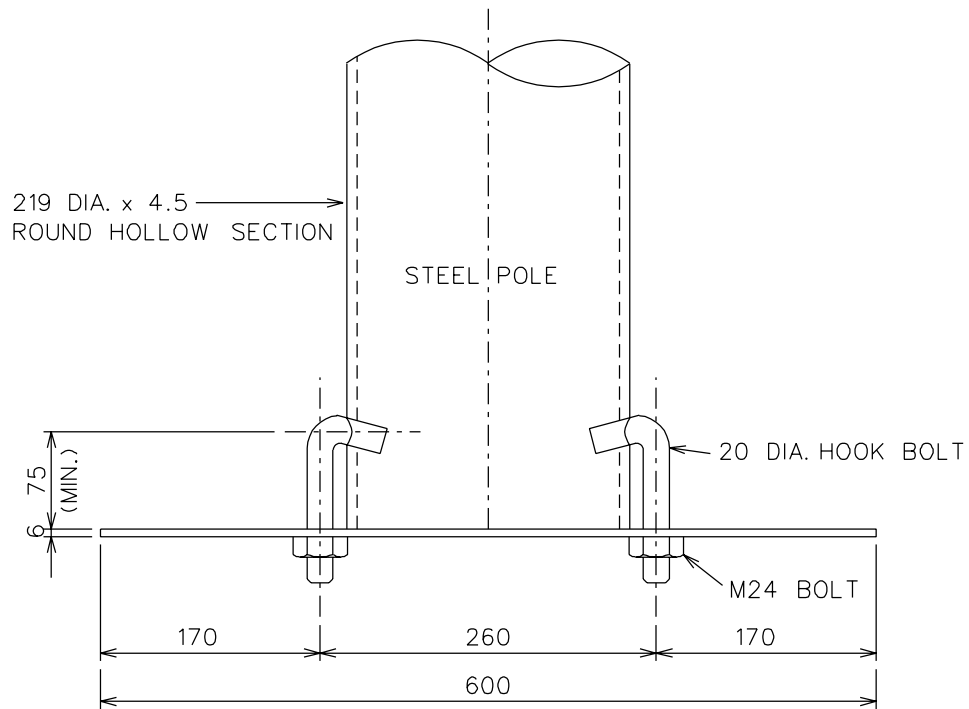


0			FIRST ISSUE / EERSTE UITREIKING						
REV	AUTH MAG	DATE DATUM	REVISION/REVISIES		BY DEUR	CHKD NAGES	D-DT-	REFERENCE DRAWINGS VERWYSINGSTEKENINGE	
			INDEX REF/INDEKSVERW						
DRAWN BY P.A. VERMAAK		DATE 19.01.1999	CHECKED A. ABROSIE		DATE 30.08.1999			N.S.N. No.	SEE SHEET 1
APPROVED P. CROWDY		DATE 30.08.1999	SCALE 1 : 50	CAD REF. CHALL\BUY3000 FILE No. 0022			D-DT-0022 (Sheet 3 of 5)	REV	0



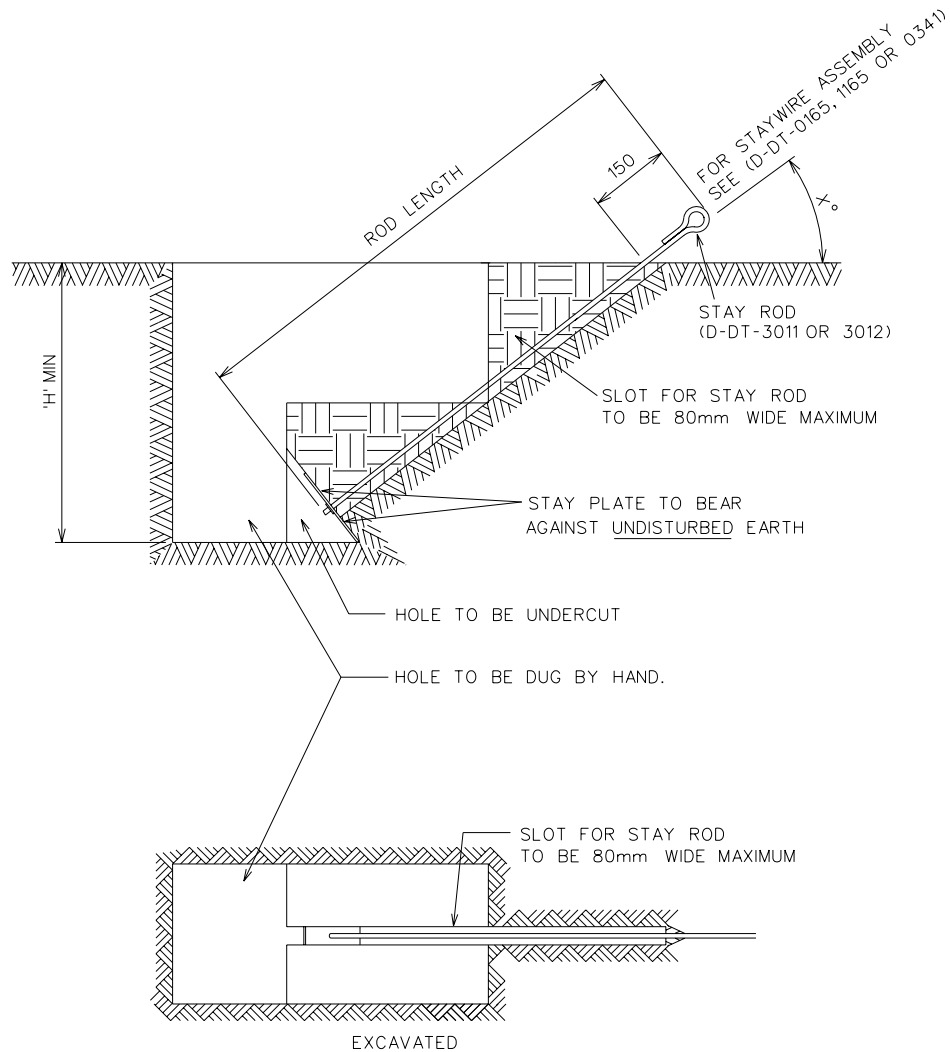
STEEL POLE SPIGOT DETAILS

0			FIRST ISSUE / EERSTE UITREIKING				
REV	AUTH MAG	DATE DATUM	REVISION/REVISIES		BY DEUR	CHKD NAGES	D-DT-REFERENCE DRAWINGS VERWYSINGSTEKENINGE
			INDEX REF/INDEXSVIEW				
DRAWN BY P.A. VERMAAK		DATE 19.01.1999	CHECKED A. ABROSIE		DATE 30.08.1999	N.S.N. No. SEE SHEET 1	
APPROVED P. CROWDY		DATE 30.08.1999	SCALE 1 : 50	CAD REF. CHALL\BUY3000 FILE No. 0022		D-DT-0022 (Sheet 4 of 5)	
						REV 0	



BASE PLATE DETAILS

0			FIRST ISSUE / EERSTE UITREIKING				
REV	AUTH MAG	DATE DATUM	REVISION/REVISIES		BY DEUR	CHKD NAGES	D-DT-REFERENCE DRAWINGS VERWYSINGSTEKENINGE
			INDEX REF/INDEKSVERW				
DRAWN BY P.A. VERMAAK		DATE 19.01.1999	CHECKED A. ABROSIE		DATE 30.08.1999		N.S.N. No. SEE SHEET 1
APPROVED P. CROWDY		DATE 30.08.1999	SCALE 1 : 50	CAD REF. CHALL\BUY3000 FILE No. 0022			D-DT-0022 (Sheet 5 of 5)



NOTE :

1. COMPACTION :- **MOISTENED** SOIL TO BE BACKFILLED IN **150mm** LAYERS, EACH LAYER COMPACTED WITH HAND COMPACTOR **WEIGHING NOT LESS THAN 12kg** OR MECHANICAL COMPACTOR, UNTIL GROUND IS HARD, THEN PLACE NEXT LAYER.
2. FOR SINGLE AND MULTIPLE CONDUCTORS ATTACHED TO THE POLE WITH DEVIATION ANGLES, THE MAX. HORIZONTAL LOAD kN IS TO BE WORKED OUT AND NOT TO EXCEED THE ALLOWABLE HORIZONTAL LOAD.
DERIVED FROM THE FACTORED STAY CAPACITY.
3. STAY SIZE TO MATCH CONDUCTOR AND NOT VOLTAGE.
4. **STAYS GREATER THAN 45 DEGREES TO BE DESIGNED BY A PROFESSIONAL ENGINEER.**

PLANTING DEPTH TABLE					
ROD DIA. mm	ROD LENGTH mm	MAX. UTS OF STAY ROD - kN	'H' MIN. mm	'H' MAX. mm	MAX. WORKING LOAD OF STAY ROD - kN
12	1500	33	1050	1300	13.2
20	2000	94	1450	1750	38
24	2400	135	1950	2150	54

* SOME OPEN WIRE LV AND DOUBLE ABC
REQUIRES THE USE OF MV (20mm) STAYS.

6	NOTE 1 & 3 ALTERED, NOTE 4 ADDED AND PLANTING DEPTH TABLE CHANGED	N.M.	B.HILL	B.HILL	16/07/08	
5	LOGO CHANGED AS PER NEW CORPORATE ID	AKM	P.A.V.	P.A.V.	26/10/04	
4	VARIOUS AMMENDMENTS MADE AND MULE STAY REMOVED	P.A.V.	B.BRANFIELD	B.BRANFIELD	11/01/1999	
3	PLANTING DEPTH TABLE AND NOTE CHANGED ON SHT.1	P.A.V.	B. HILL	P.CROWDY	30/09/1997	
2	TABLE DIMENSIONS CHANGED & SHT.2 ADDED	P.A.V.	J. SWAN	P.CROWDY	28/08/1995	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.



AUTH: S.A. CILLIERS

DATE: 10/01/1994

CHKD: NJVR

DATE: 01/03/1993

DRAWN: ETR • OTS
ZW

DATE: 01/09/1992

**MV & LV RETICULATION
STAY ROD INSTALLATION
NON-AUGURED HOLES**

D-DT-0350

SET

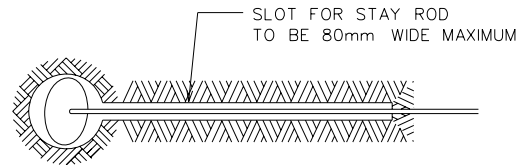
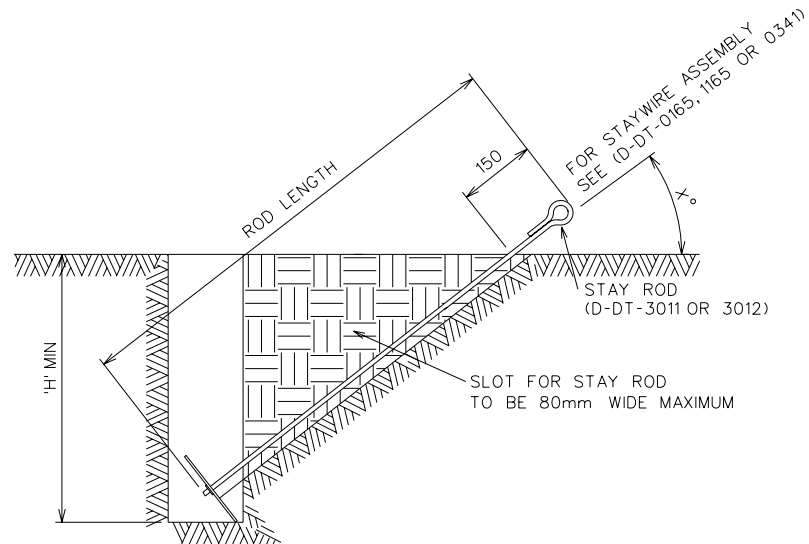
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SHEET

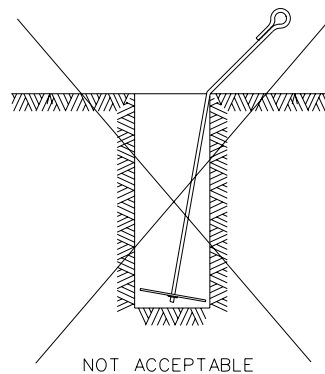
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REVISION

6

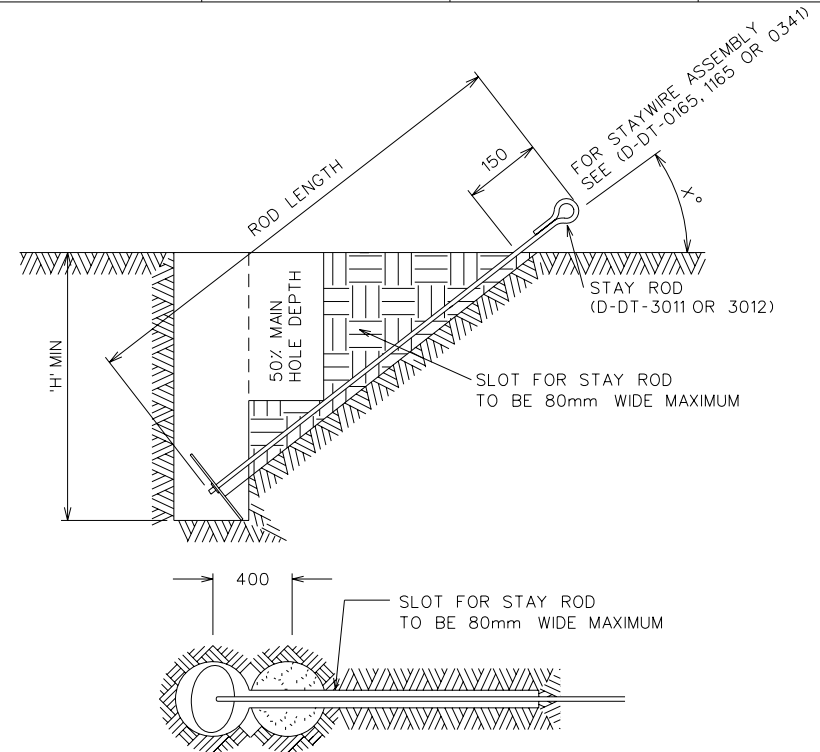


SINGLE AUGURED HOLE



NOTE :

1. COMPACTION AND PLANTING DEPTH TABLE REFER TO SHEET 1.
2. SPECIAL ATTENTION MUST BE TAKEN WITH THE COMPACTION OF BACKFILL AS IT IS NOT POSSIBLE TO UNDERCUT THE HOLE.



DOUBLE AUGURED HOLE

6	NOTE 1 & 3 ALTERED, NOTE 4 ADDED AND PLANTING DEPTH TABLE CHANGED	N.M.	B.HILL	B.HILL	16/07/08	
5	LOGO CHANGED AS PER NEW CORPORATE ID	AKM	P.A.V.	P.A.V.	26/10/04	
4	VARIOUS AMMENDMENTS MADE AND MULE STAY REMOVED	P.A.V.	B.BRANFIELD	B.BRANFIELD	11/01/1999	
3	PLANTING DEPTH TABLE AND NOTE CHANGED ON SHT. 1	P.A.V.	B. HILL	P.CROWDY	30/09/1997	
2	TABLE DIMENSIONS CHANGED & SHT.2 ADDED	P.A.V.	J. SWAN	P.CROWDY	28/08/1995	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.
		MV & LV RETICULATION STAY ROD INSTALLATION NON-AUGURED HOLES				
AUTH: S.A. CILLIERS						
DATE: 10/01/1994						
CHKD: NJVR						
DATE: 01/03/1993						
DRAWN: ETR + OTS ZW		D-DT-0350		SET	SHEET	REVISION
DATE: 01/09/1992				2	2	6

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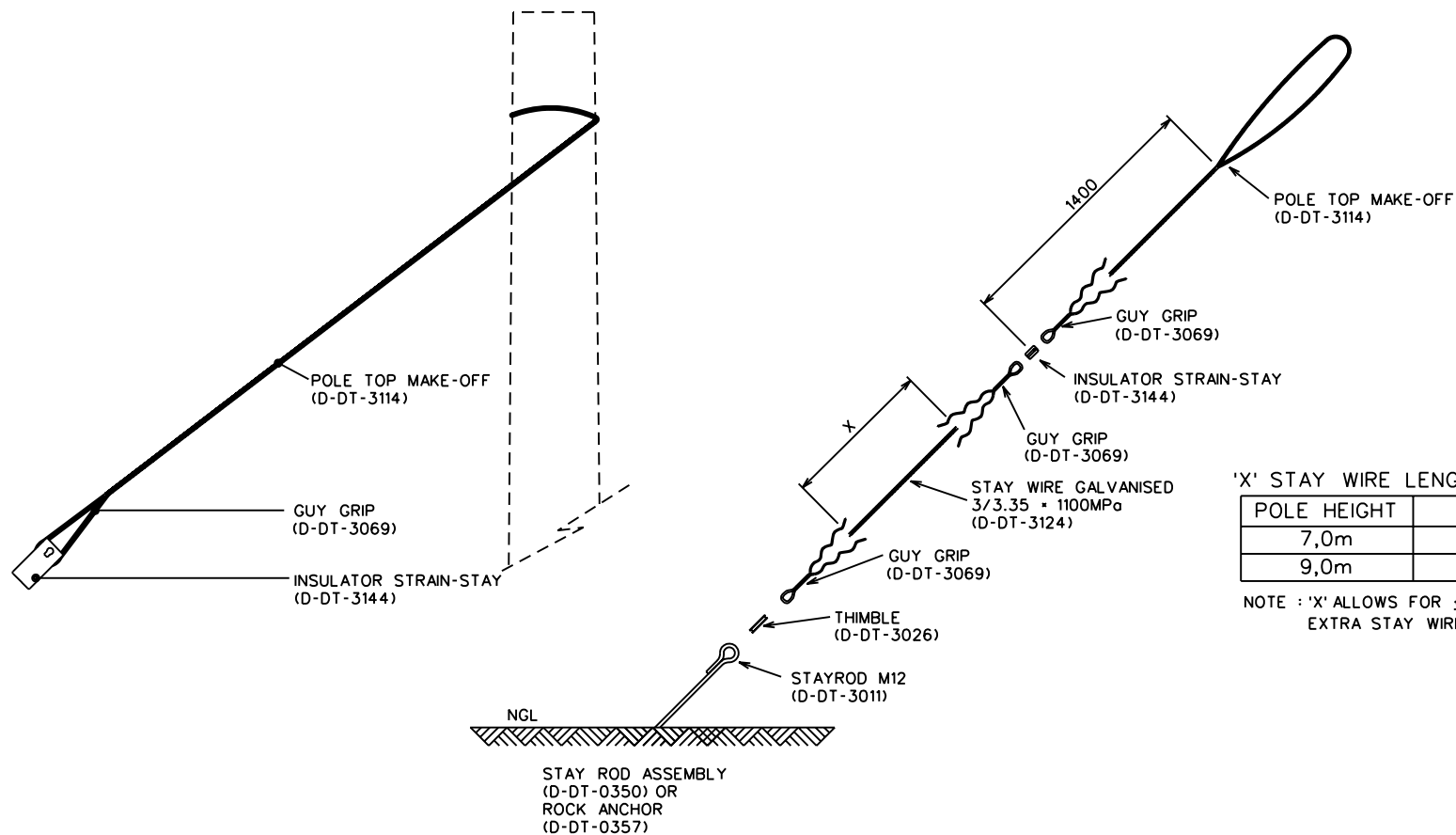
D

E

E

F

F



LV STAY ASSEMBLY

4	LOGO CHANGED AS PER CORPORATE ID	M.T.M.	P.A.V.	J.SCHOLTZ	06.08.04	
3	M16 EYENUT FOR TERAFASTROCK ANCHOR REMOVED AND STAY WIRE TABLE ADDED	P.A.V.	J.S.	B.H.	05/07/98	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.
		LV RETICULATION WOOD POLE STAY ASSEMBLY UWS ZZZZZA ZZZZ UWS ZZZZZB ZZZZ				
AUTH:	P. CROWDY	D-DT-1165		SET	SHEET	REVISION
DATE:						
CHKD:	J. SWAN					
DATE:						
DRAWN:	P. VERMAAK			1	1	4
DATE:	28/11/1994					

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A3L

1 2 3 4 5 6 7 8

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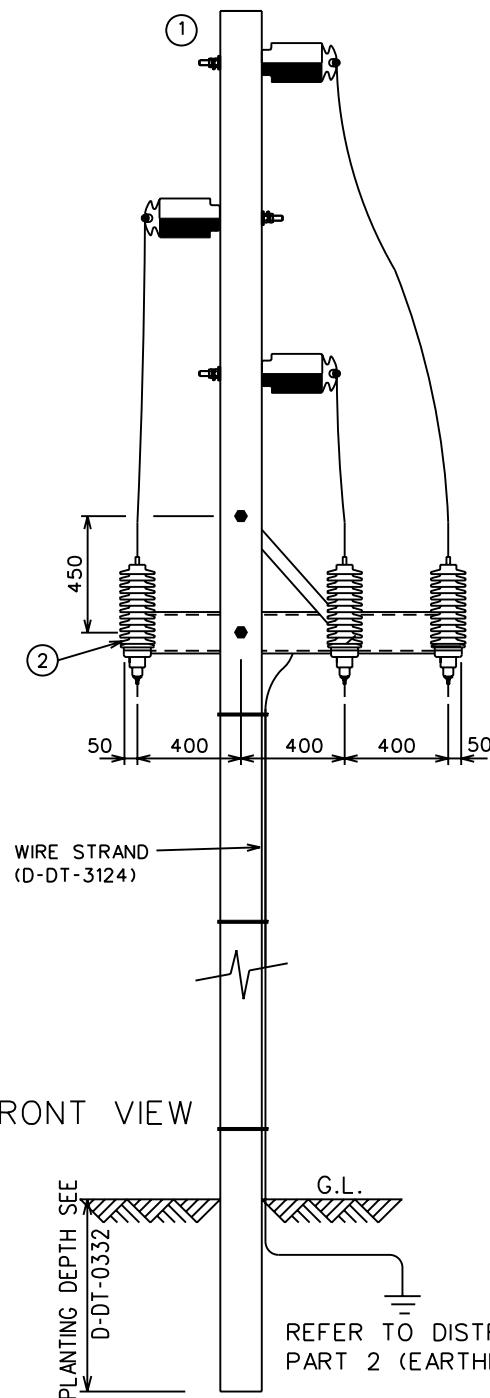
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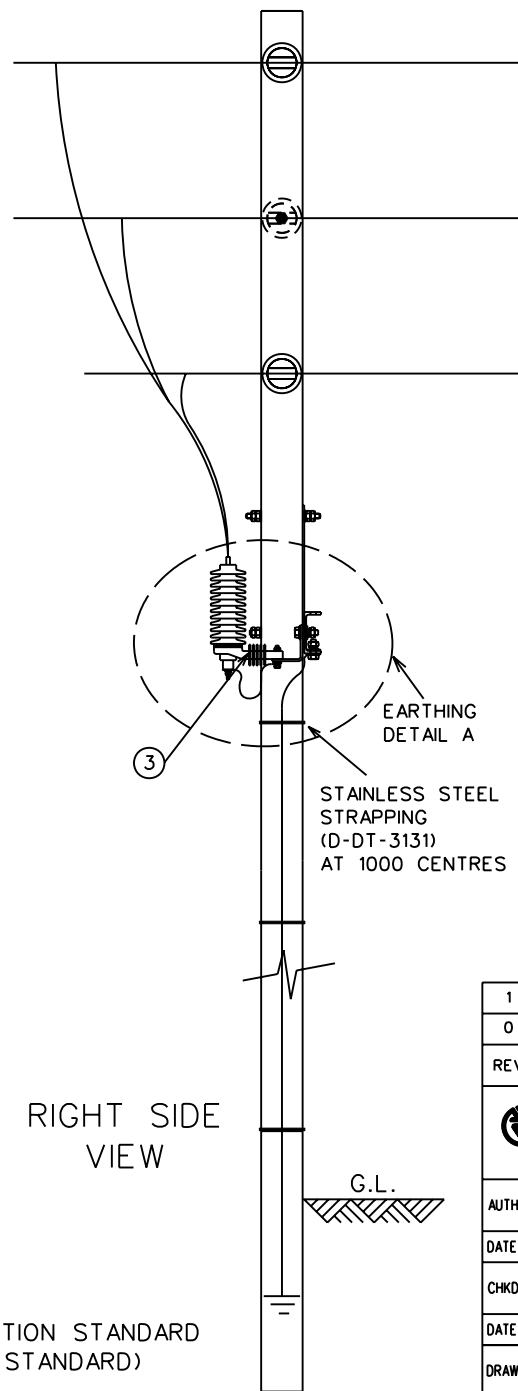
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REFERENCE DRAWINGS

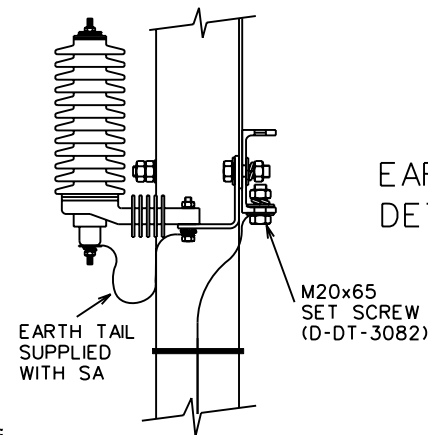
ITEM	DESCRIPTION	DWG NO
STRUCTURES		
1	STAGGERED VERTICAL STRUCTURES -450mm SPACING -600mm SPACING	D-DT-1700 D-DT-1710
EQUIPMENT ATTACHMENTS		
2	1300 CROSS ARM ASSEMBLY	D-DT-0319
3	SURGE ARRESTERS ASSEMBLY	D-DT-0263



FRONT VIEW



RIGHT SIDE VIEW



EARTHING DETAIL A

1	LOGO CHANGED AS PER CORPORATE ID		M.T.M.	P.A.V.	P.A.V.	11.11.04	
0	FIRST ISSUE		P.A.V.	G.STANFORD	R.THERON	09.07.02	
REV	REVISION DESCRIPTION		BY	CHKD	AUTH	DATE	PROJECT NO.
			ESKOM LINE ARRESTERS 1300 LONG STEEL CROSSARM STAGGERED VERTICAL CONFIGURATION				
AUTH: R. THERON							
DATE: 09/07/2002							
CHKD: G. STANFORD							
DATE: 09/07/2002			D-DT-1842		SET	SHEET	REVISION
DRAWN: P.A. VERMAAK		1			1	1	
DATE: 01/02/2002							

1 2 3 4 5 6 7 8 A3L

1 2 3 4 5 6 7 8

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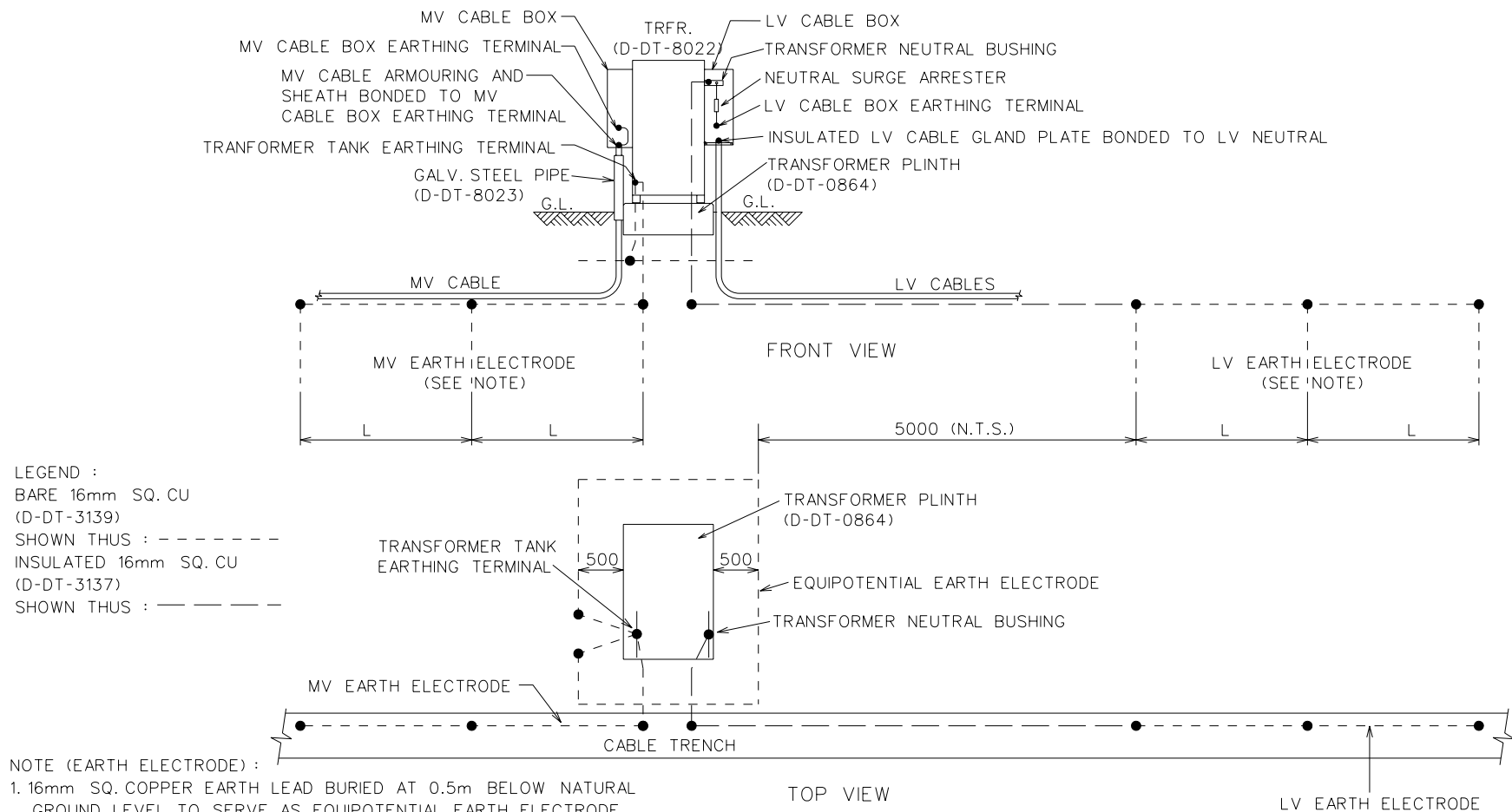
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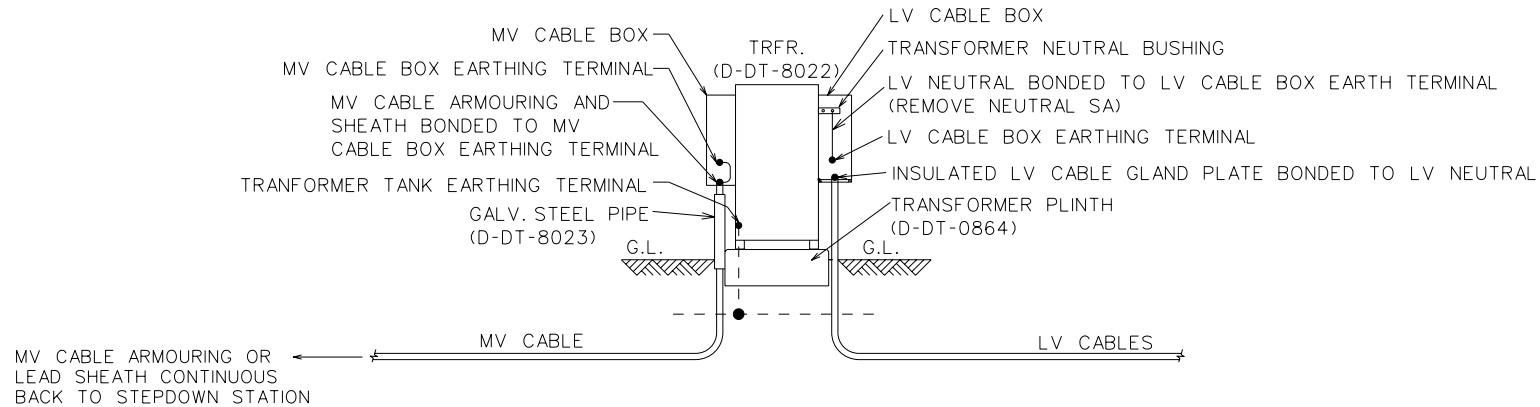
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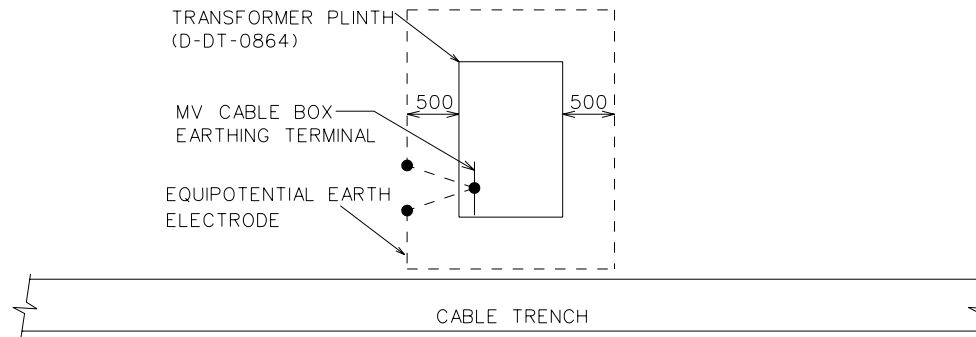


3	EARTHING FOR CABLE TO CABLE TRFR & RMU CONNECTED TO OVERHEAD LINE ADDED	P.A.T.	R.KELLY	R.KELLY	05.08.08	
2	EQUIPOTENTIAL EARTH ADDED FOR NO ECC INSTALLATION	P.A.V.	T.GILLARD	G.WHYTE	MAY'03	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.
		TRANSFORMER EARTHING FOR MV SYSTEMS WITHOUT CONTINUOUS EARTHING CONDUCTOR TO SOURCE SUBSTATION				
AUTH: P. CROWDY						
DATE: 17.11.2000						
CHKD: G. WHYTE						
DATE: 17.11.2000		D-DT-0862		SET	SHEET	REVISION
DRAWN: R.ABRAHAMS P.A.VERMAAK				4	1	3
DATE: 02.08.2000						

1 2 3 4 5 6 7 8 A3L



FRONT VIEW



TOP VIEW

LEGEND :
BARE 16mm SQ. CU (D-DT-3139)
SHOWN THUS : - - - - -

NOTE :
1. 16mm SQ. COPPER EARTH LEAD BURIED AT 0.5m BELOW NATURAL GROUND LEVEL TO SERVE AS EQUIPOTENTIAL EARTH ELECTRODE
2. EQUIPOTENTIAL EARTH ELECTRODE TO BE INSTALLED 0.5m FROM TRANSFORMER FOUNDATION AND TO ENCIRCLE ENTIRE TRANSFORMER
3. EACH END OF THE EQUIPOTENTIAL EARTH ELECTRODE IS TO BE BONDED TO THE TRANSFORMER TANK EARTH TERMINAL.

3	EARTHING FOR CABLE TO CABLE TRFR & RMU CONNECTED TO OVERHEAD LINE ADDED	P.A.T.	R.KELLY	R.KELLY	05.08.08		
2	EQUIPOTENTIAL EARTH ADDED FOR NO ECC INSTALLATION	P.A.V.	T.GILLARD	G.WHYTE	MAY'03		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.	
		TRANSFORMER EARTHING FOR MV SYSTEMS WITHOUT CONTINUOUS EARTHING CONDUCTOR TO SOURCE SUBSTATION					
AUTH: P. CROWDY							
DATE: 17.11.2000							
CHKD: G. WHYTE							
DATE: 17.11.2000		D-DT-0862			SET	SHEET	REVISION
DRAWN: R.ABRAHAMS P.A.VERMAAK					4	2	3
DATE: 02.08.2000							

1 2 3 4 5 6 7 8

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ANY OVERHEAD
CONFIGURATION

SEE D-DT-0851 FOR
CABLE TERMINATION
ONTO OVERHEAD LINE

G.L.

MV CABLE BOX
MV CABLE BOX EARTHING TERMINAL
MV CABLE ARMOURING AND
SHEATH BONDED TO MV
CABLE BOX EARTHING TERMINAL
TRANSFORMER TANK EARTHING TERMINAL
GALV. STEEL PIPE
(D-DT-8023)

TRFR.
(D-DT-8022)

LV CABLE BOX
TRANSFORMER NEUTRAL BUSHING
NEUTRAL SURGE ARRESTER
LV CABLE BOX EARTHING TERMINAL
INSULATED LV CABLE GLAND PLATE BONDED TO LV NEUTRAL
TRANSFORMER PLINTH
(D-DT-0864)
G.L.

SEE NOTE 5

L₂

MV CABLE

LV CABLES

MV EARTH ELECTRODE
(SEE NOTE)

FRONT VIEW

5000 (N.T.S.)

LV EARTH ELECTRODE
(SEE NOTE)

MV CABLE BOX
EARTHING TERMINAL

TRANSFORMER PLINTH
(D-DT-0864)

EQUIPOTENTIAL EARTH ELECTRODE
(SEE NOTES 1 - 3 ON SHEET 1)

TRANSFORMER NEUTRAL BUSHING

LEGEND :

BARE 16mm SQ. CU
(D-DT-3139)

SHOWN THUS : - - - - -

INSULATED 16mm SQ. CU
(D-DT-3137)

SHOWN THUS : — — — — —

MV EARTH ELECTRODE

LV EARTH ELECTRODE

CABLE TRENCH

TOP VIEW

NOTE (EARTH ELECTRODE) :

1. MAXIMUM MV ELECTRODE RESISTANCE IS 30 OHMS.
WHERE A SEPARATE EARTH ELECTRODE IS
INSTALLED AT THE POLE (SEE NOTE 5) THE MV ELECTRODE RESISTANCE IS
DETERMINED BY THE TWO ELECTRODE RESISTANCES IN PARALLEL.
2. MAXIMUM LV ELECTRODE RESISTANCE IS DEPENDANT ON FEEDER MAIN
EARTH FAULT PROTECTION SETTING AT SOURCE.
SEE TABLE 1 IN THE MV/LV RETICULATION EARTHING STANDARD PART 2
OF DISTRIBUTION STANDARD - CLAUSE 4.2.5.
3. DESIGN OF EARTH ELECTRODE TO BE DETERMINED BY SOIL RESISTIVITY.
SEE EARTHING STANDARD PART 2 TABLE 3a / 4a FOR TRENCH ELECTRODE
DESIGN FOR 30/70 OHMS ELECTRODES.
ADJUST LENGTH 'L' AS INDICATED IN THE TABLE.
4. REFER TO D-DT-0642 FOR DETAIL OF EARTH ELECTRODES CONNECTIONS.
5. IF THE SEPARATION BETWEEN THE TERMINAL POLE AND THE TRANSFORMER
IS >10m A SEPARATE EARTH ELECTRODE FOR THE SURGE ARRESTERS SHALL BE
INSTALLED AT THE POLE, REFER TO MV/LV RETICULATION STANDARD PART 2
OF DISTRIBUTION STANDARD - CLAUSE 4.2.4 AND 4.2.5.
6. EQUIPOTENTIAL AND MV EARTH ELECTRODES SHALL BE BONDED.
7. 5m SEPARATION BETWEEN MV / EQUIPOTENTIAL AND LV ELECTRODE IN THE SOIL.

3	EARTHING FOR CABLE TO CABLE TRFR & RMU CONNECTED TO OVERHEAD LINE ADDED	P.A.T.	R.KELLY	R.KELLY	05.08.08		
2	EQUIPOTENTIAL EARTH ADDED FOR NO ECC INSTALLATION	P.A.V.	T.GILLARD	G.WHYTE	MAY'03		
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.	
		TRANSFORMER EARTHING FOR CABLE TO CABLE TRANSFORMER CONNECTED TO OVERHEAD LINE					
AUTH: P. CROWDY							
DATE: 17.11.2000							
CHKD: G. WHYTE							
DATE: 17.11.2000		D-DT-0862			SET	SHEET	REVISION
DRAWN: R.ABRAHAMS P.A.VERMAAK					4	3	3
DATE: 02.08.2000							

1 2 3 4 5 6 7 8 A3L

ANY OVERHEAD
CONFIGURATION

SEE D-DT-0851 FOR
CABLE TERMINATION
ONTO OVERHEAD LINE

MV RMU
(D-DT-0860)

MV EQUIPMENT
EARTH

MV CABLE ARMOURING
AND SHEATH BONDED
TO EARTH BAR

MV CABLE BOX
EARTHING TERMINAL

MV CABLE ARMOURING /
SHEATH BONDED TO MV
EARTHING TERMINAL

TRANSFORMER TANK
EARTHING TERMINAL
GALV. STEEL PIPE
(D-DT-8023)

LV CABLE BOX

TRFR.
(D-DT-8022)

TRANSFORMER NEUTRAL BUSHING

NEUTRAL SURGE ARRESTER

LV CABLE BOX EARTHING TERMINAL

INSULATED LV CABLE GLAND PLATE
BONDED TO LV NEUTRAL

TRANSFORMER PLINTH
(D-DT-0864)

MV EARTH ELECTRODE
(SEE NOTE)

MV EARTH ELECTRODE
(SEE NOTE)

LV EARTH ELECTRODE
(SEE NOTE)

FRONT VIEW

RING MAIN UNIT PLINTH
(D-DT-0863)

EQUIPOTENTIAL EARTH
ELECTRODE
(SEE NOTES 1 - 3
ON SHEET 1)

TRANSFORMER PLINTH
(D-DT-0864)

EQUIPOTENTIAL EARTH ELECTRODE
(SEE NOTES 1 - 3 ON SHEET 1)

TRANSFORMER NEUTRAL BUSHING

MV EARTH ELECTRODE

MV EARTH ELECTRODE

CABLE TRENCH

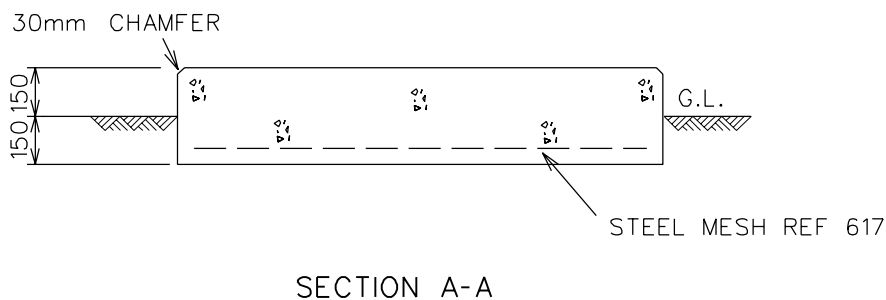
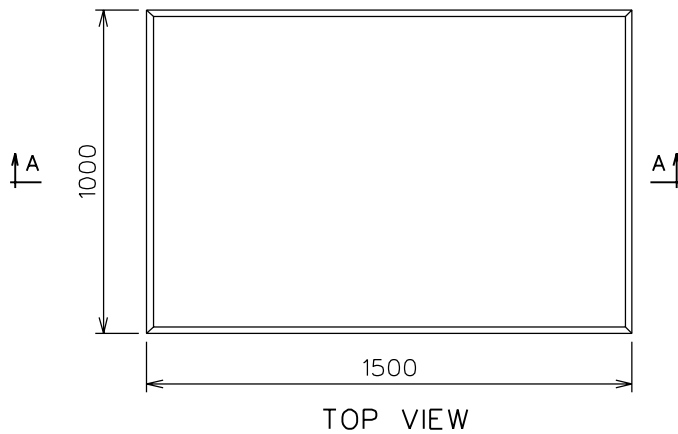
TOP VIEW

NOTE (EARTH ELECTRODE) :

1. MAXIMUM MV ELECTRODE RESISTANCE IS 30 OHMS.
THE TOTAL MV ELECTRODE RESISTANCE IS DETERMINED
BY THE TWO MV ELECTRODE RESISTANCES IN PARALLEL.
2. MAXIMUM LV ELECTRODE RESISTANCE IS DEPENDANT ON FEEDER MAIN
EARTH FAULT PROTECTION SETTING AT SOURCE.
SEE TABLE 1 IN THE MV/LV RETICULATION EARTHING STANDARD PART 2
OF DISTRIBUTION STANDARD - CLAUSE 4.2.5.
3. DESIGN OF EARTH ELECTRODE TO BE DETERMINED BY SOIL RESISTIVITY.
SEE EARTHING STANDARD PART 2 TABLE 3a / 4a FOR TRENCH ELECTRODE
DESIGN FOR 30/70 OHMS ELECTRODES.
ADJUST LENGTH 'L' AS INDICATED IN THE TABLE.
4. REFER TO D-DT-0642 FOR DETAIL OF EARTH ELECTRODES CONNECTIONS.
5. THE RMU SHALL BE INSTALLED <10m FROM THE TERMINAL POLE.
A SEPERATE EARTH ELECTRODE FOR THE TERMINATION TO OVERHEAD
LINE SURGE ARRESTERS IS THEREFORE NOT REQUIRED.
6. EQUIPOTENTIAL AND MV EARTH ELECTRODES SHALL BE BONDED.
7. 5m SEPARATION BETWEEN TRANSFORMER MV/EQUIPOTENTIAL AND LV ELECTRODE IN THE SOIL.

LEGEND :
BARE 16mm SQ. CU (D-DT-3139)
SHOWN THUS : - - - - -
INSULATED 16mm SQ. CU (D-DT-3137)
SHOWN THUS : — — — —

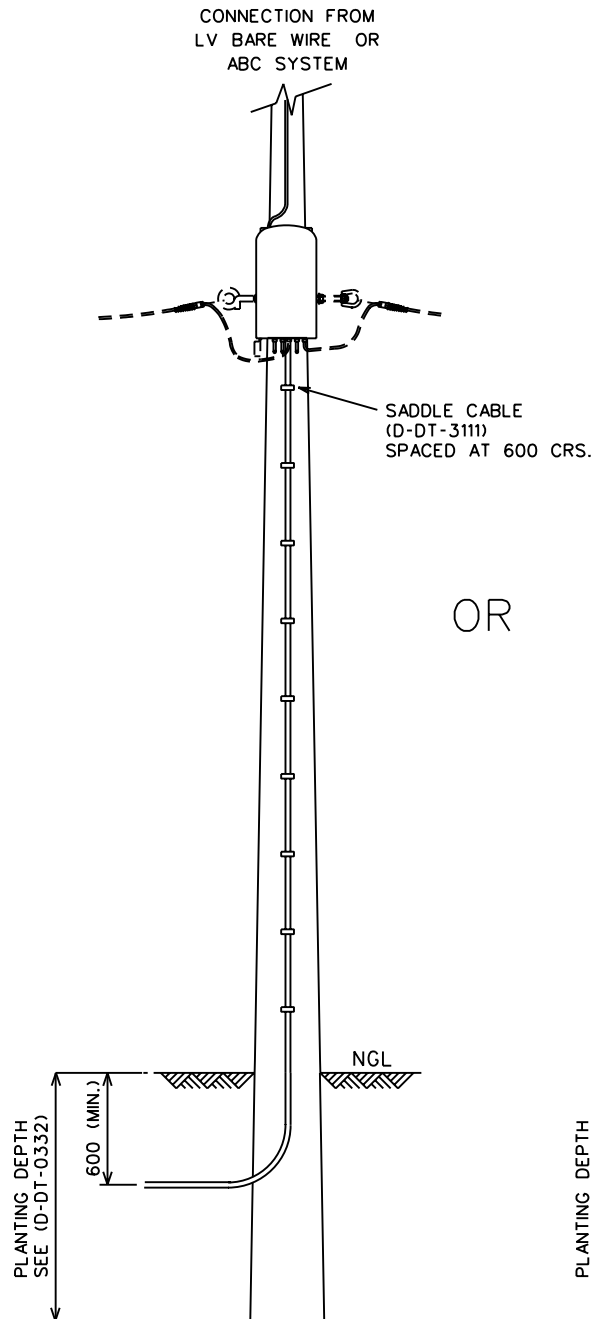
3	EARTHING FOR CABLE TO CABLE TRFR & RMU CONNECTED TO OVERHEAD LINE ADDED	P.A.T.	R.KELLY	R.KELLY	05.08.08	
2	EQUIPOTENTIAL EARTH ADDED FOR NO ECC INSTALLATION	P.A.V.	T.GILLARD	G.WHYTE	MAY'03	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.
 AUTH: P. CROWDY DATE: 17.11.2000 CHKD: G. WHYTE DATE: 17.11.2000 DRAWN: R.ABRAHAMS P.A.VERMAAK DATE: 02.08.2000 EARTHING FOR CABLE TO CABLE TRANSFORMER AND RMU CONNECTED TO OVERHEAD LINE D-DT-0862 SET 4 SHEET 4 REVISION 3						



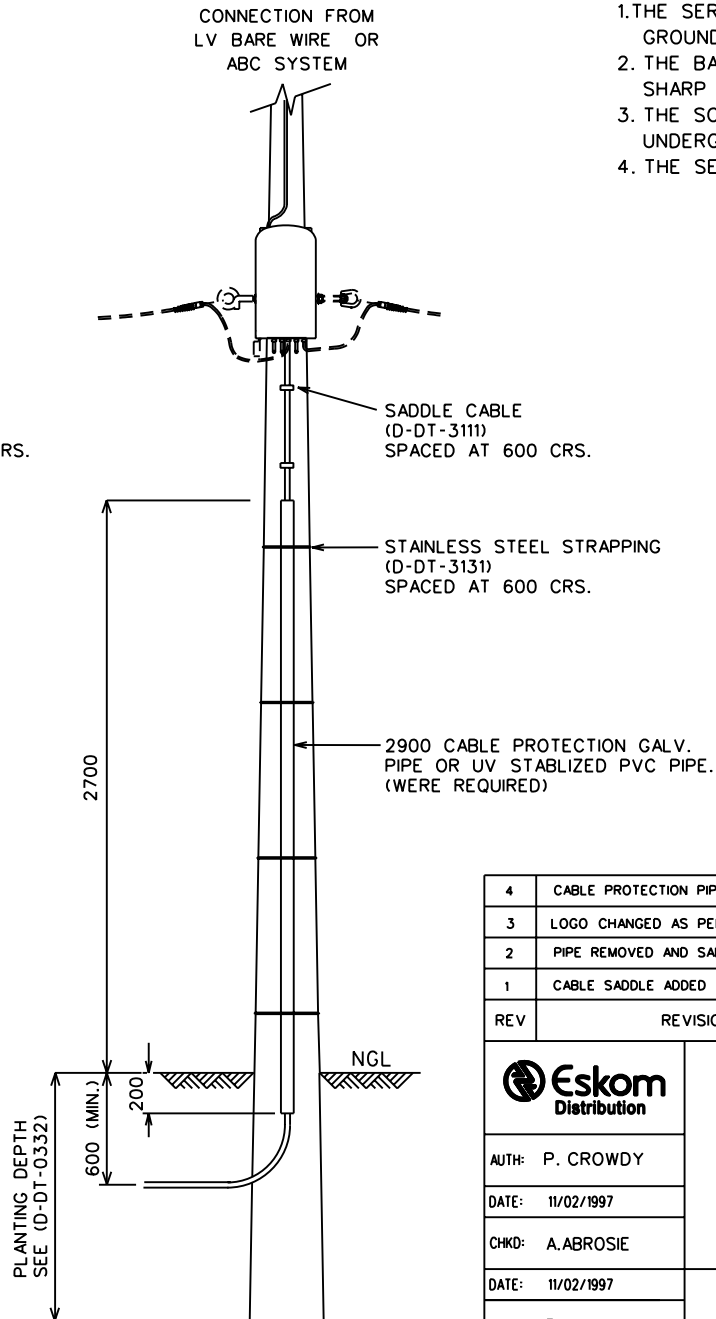
NOTE :

1. 25 MPa CONCRETE TO BE USED. CONCRETE TO BE VIBRATED.
2. BOTTOM OF FOUNDATION TO BE COMPACTED AFTER EXCAVATION TO 95% MOD AASHTO.
3. REF 617 STEEL MESH PLACED 50mm FROM BOTTOM OF SLAB.
4. CONCRETE TO BE CURED FOR 7 DAYS WITH APPROVED CURING METHOD.
5. FOUNDATION TO HAVE A 30mm CHAMPHER ALL AROUND.
6. FOUNDATION NOT FOR PRE-CAST ITEMS. (IE : CAST IN situ).

4	G. WHYTE	03.02.03	LIFTING EYES REPOSITIONED	P.A.V.	G. WHYTE		
3	G. WHYTE	07.01.03	PRE-CAST PLINTH NOTE AND No. OF COUNTERSUNK LIFTING EYE CHANGED	P.A.V.	G. WHYTE		
2	A. BEKKER	25.03.02	TITLE BLOCK CORRECTED FOR PRE-CAST OPTION	P.A.V.	G. WHYTE		
REV	AUTH MAG	DATE DATUM	REVISION/REVISIES	BY DEUR	CHKD NAGES	D-DT-	REFERENCE DRAWINGS VERWYSINGSTEKENINGE
			INDEX REF/INDEKSVERW				
			TRANSFORMER PLINTHS FOR 100 TO 1000kVA TRANSFORMERS PLANS AND SECTION (CAST ON SITE)				
CHKD NAGES	G.WHYTE	08.11. 2000					
DRAWN GETEKEN	P.A.V.	30.08. 2000	APPROVED P. CROWDY	CAD.REF: SERIES 0800	D-DT-0864 (Sheet 1 of 2)		REV
SCALE SKAAL	1 : 20		08.11.2000	FILE No.: 0864			4



OR



NOTE :

1. THE SERVICE CABLE SHALL BE BURIED A MINIMUM OF 0.6m BELOW GROUND LEVEL.
2. THE BACKFILL MATERIAL MUST BE FREE FROM ROCKS AND OTHER SHARP OBJECTS.
3. THE SOIL AROUND THE POLE MUST BE COMPACTED ONCE THE UNDERGROUND SERVICE CABLE HAS BEEN INSTALLED.
4. THE SERVICE CABLE SHOULD BE LABELLED IN THE POLE TOP BOX.

4	CABLE PROTECTION PIPE OPTION RE-INTRODUCED	P.A.V.	J.MAUDU	J.MAUDU	19/06/2006	
3	LOGO CHANGED AS PER NEW CORPORATE ID	AKM	P.A.V.	P.A.V.	26/10/04	
2	PIPE REMOVED AND SADDLES ADDED	P.A.V.	A.ABROSIE	P.CROWDY	01/07/1999	
1	CABLE SADDLE ADDED	P.A.V.	A.ABROSIE	P.CROWDY	07/08/1997	
REV	REVISION DESCRIPTION	BY	CHKD	AUTH	DATE	PROJECT NO.



AUTH: P. CROWDY

DATE: 11/02/1997

CHKD: A.ABROSIE

DATE: 11/02/1997

DRAWN: P.A.V.

DATE: 08/10/1996

SERVICES RETICULATION UNDERGROUND SERVICES CONNECTION

D-DT-0367

SET	SHEET	REVISION
1	1	4