



BID NOTICE

STELLENBOSCH MUNICIPALITY HEREBY INVITES YOU TO TENDER FOR B/SM 109/25 UPGRADE OF STREETLIGHT INFRASTRUCTURE AND ASSOCIATED EQUIPMENT: VILLAGES, PROVINCIAL ROADS AND TRAFFIC LIGHT INTERSECTIONS FOR THE PERIOD ENDING 30 JUNE 2028

TENDER NUMBER: **B/SM 109/25**
DESCRIPTION: **UPGRADE OF STREETLIGHT INFRASTRUCTURE AND ASSOCIATED EQUIPMENT: VILLAGES, PROVINCIAL ROADS AND TRAFFIC LIGHT INTERSECTIONS FOR THE PERIOD ENDING 30 JUNE 2028**
CLOSING DATE: **24 NOVEMBER 2025**
CLOSING TIME: **12h00: Bids will be opened in the Council Chambers or Supply Chain Management Boardroom.**
CIDB: The following CIDB class of construction works will be applicable to the Tender, in accordance with the sum tendered or value determined in accordance with regulation 25(7A) of the Construction Industry Development Regulations, 2004 (as amended) – As of 23 May 2019 - Class of Construction Works: CIDB grading of 6EP or higher is required

INFORMATION:

Tender Specifications: Jan-Louw Engelbrecht at 087 550 5149: e-mail: JanLouwE@motla.co.za
SCM Requirements: Jeanette Williams at 021 808 8524: e-mail: Jeanette.Williams@stellenbosch.gov.za
Office hours for collection: 08h00-15h30

A Compulsory Clarification Site Meeting will be held on **30 October 2025** at **09h00**. The meeting will start in the Electrical Boardroom at 71 Plein Street, Ecclesia Building Stellenbosch, from where it will move to various sites. Tenderers can contact Mark Benson and Bernine Kwago at mark.benson@stellenbosch.gov.za or bernine.kwago@stellenbosch.gov.za should any questions arise concerning the meeting locations Tenderers who fail to attend the compulsory information session will be regarded as non-compliant.

Tenders may only be submitted on the Tender document issued by Stellenbosch Municipality and must be valid for **180 days** after tender closing. Late, electronic format, telephonic or faxed Tenders will not be considered and Stellenbosch Municipality does not bind itself to accept the lowest bid or any of the tenders that has been submitted.

Sealed Tenders, with " **B/SM 109/25 UPGRADE OF STREETLIGHT INFRASTRUCTURE AND ASSOCIATED EQUIPMENT: VILLAGES, PROVINCIAL ROADS AND TRAFFIC LIGHT INTERSECTIONS FOR THE PERIOD ENDING 30 JUNE 2028** ", clearly endorsed on the envelope, must be deposited in the Tender box at the offices of the Stellenbosch Municipality, Town House Complex, Plein Street, Stellenbosch. The Tender box is accessible 24 hours a day and Tenders must be accompanied by the completed Tender documents. Tenders not accompanied by a complete Tender document, will not be considered.

NOTE: This tender will be evaluated in terms of (FIDIC, CIDB & Special Conditions), Supply Chain Management Policy and relevant specification as depicted in the document and also the Stellenbosch Preferential Procurement Policy effective from 16 January 2023 in accordance with the Preferential Procurement Regulations that was promulgated by the Minister of Finance on 04 November 2022 in Government Gazette No 47452.

The preferential points system applied is as follows: 80/20 in terms of the approved policy.

Price	80
B-BBEE status level of contribution	10
Locality	10
Total points for Price, B-BBEE and locality	100

The following conditions to Tender exist (failure to comply may result in your Tender being disqualified):

1. This Tender is subject to the general conditions of contract (FIDIC, CIDB & Special Conditions) and special conditions for Tendering.
2. Relevant terms of reference.
3. Tenderers must be registered on the Central supplier database (CSD) if they wish to conduct business with the municipality.
4. No award will be made to tenderers whose tax status is non-compliant.
5. Tenders submitted must be in a sealed envelope clearly marked with the Tender number, placed in the tender box before closing time. Failure will result in the tender being invalid.

Tender documents, in English, are available free of charge on the website: www.stellenbosch.gov.za. Alternatively, hard copies of the document are obtainable from the offices of the Supply Chain Management Unit, Stellenbosch Municipality, Town House Complex, 1st Floor, Plein Street, Stellenbosch, upon payment of a non-refundable fee of R 1 865.00 per document.

Note: The municipality will never contact you to pay money in exchange for the award of a tender.

G Mettler (Ms)
MUNICIPAL MANAGER



TENDER KENNISGEWING

STELLENBOSCH MUNISIPALITEIT NOOI U VIR DIE VOLGENDE TENDER: B/SM 109/25: OPGRADERING VAN STRAATLIG INFRASTRUKTUUR EN VERWANTE TOERUSTING: DORPE, PROVINSIALE PAAIE EN VERKEERSLIG KRUISINGS VIR DIE TYDPERK EINDIG 30 JUNIE 2028

TENDER NOMMER: **B/SM 109/25**

BESKRYWING: **OPGRADERING VAN STRAATLIG INFRASTRUKTUUR EN VERWANTE TOERUSTING: DORPE, PROVINSIALE PAAIE EN VERKEERSLIG KRUISINGS VIR DIE TYDPERK EINDIG 30 JUNIE 2028**

SLUITINGSdatum: **24 NOVEMBER 2025**

TYD VAN SLUITING: **12h00.** Tenders sal oopgemaak word in die **Raadsaal** of in die **Voorsieningskanaalbestuurs Raadsaal**.

KIOR: Die volgende KIOR klas vir konstruksiewerk, in ooreenstemming met die totale bedrag getender of waarde bepaal in ooreenstemming met regulasie 25 (7A) van die Konstruksie-industrie Ontwikkelingsraad, Regulasies, 2004 (soos gewysig) op 23 Mei 2019, sal op die bod van toepassing wees. Tendersaars moet 'n **geskatte KIOR kontrakteurgradering** van ten minste **6 EP of hoër** hê

NAVRAE:

Tender spesifikasies: Jan-Louw Engelbrecht by 087 550 5149: e-pos: JanLouwE@motla.co.za

Vkb vereistes: Jeanette Williams by 021 8088524 : e-pos: Jeanette.Williams@stellenbosch.gov.za

Kantoor Ure: 08h00-15h30

'n **Verpligte inligtingssessie (in persoon bywoning)** sal gehou word op **30 Oktober 2025 om 09h00** te 71 Plein Straat, Ecclesia Gebou Stellenbosch in die Elektriese Raadsaal vanwaar die besigtigingsbesoeke sal volg op verskeie terreine. Tendersaars kan **Mark Benson** en **Bernine Kwago** kontak by mark.benson@stellenbosch.gov.za of bernine.kwago@stellenbosch.gov.za indien enige vrae ontstaan rakende die vergaderplekke. Tendersaars wat nie die verpligte inligtingssessie bywoon nie, sal nie in ag geneem word nie.

Tenders mag slegs ingedien word op die tenderdokumentasie verskaf deur Stellenbosch Munisipaliteit en moet geldig wees vir **180 dae** na die sluitingsdatum. Laat, elektroniese formaat of gefakse tenders sal nie aanvaar word nie en Stellenbosch Munisipaliteit is nie verplig om die laagste of enige tender wat ingedien word te aanvaar nie.

Verseëde tenders duidelik gemerk: **"B/SM 109/25: OPGRADERING VAN STRAATLIG INFRASTRUKTUUR EN VERWANTE TOERUSTING: DORPE, PROVINSIALE PAAIE EN VERKEERSLIG KRUISINGS VIR DIE TYDPERK EINDIG 30 JUNIE 2028"**, op die koevert, moet geplaas word in tenderbus buite die kantore van Stellenbosch Munisipaliteit, Meenthuis Kompleks, (Hoofgebou tussen Stadsaal en Munisipale Biblioteek), Stellenbosch. Die tenderbus is 24 uur per dag beskikbaar en tenders moet vergesel word met die voltooië stel tenderdokumente. Tenderaanbiedinge wat nie deur die volledige tenderdokument vergesel word nie, sal nie oorweeg word nie.

LET WEL: Hierdie tender sal geëvalueer word ingevolge die ("FIDIC", KIOR & Spesiale Termes), Voorsieningskanaal Bestuursbeleid en relevante spesifikasies, soos vervat in die tender dokument asook die Stellenbosch **Voorkeurverkrygingsbeleid** **effektief vanaf 16 Januarie 2023 in samewerking met die Voorkeurverkrygingsregulasies** wat op 04 November 2022 deur die Minister van Finansies in Staatskoerant No 47452 afgekondig is.

Die voorkeerpunte stelsel is soos volg gebaseer: 80/20 in terme van die goedgekeurde beleid:

Prys	80
BBSEB status	10
Ligging	10
Totale punte vir prys, B-BSEB en ligging	100

Die volgende voorwaardes vir Tender soos volg: (versuim om te voldoen, kan veroorsaak dat u Tender gediskwalifiseer word):

1. Hierdie tender is onderworpe aan ("FIDIC", KIOR & Speciale Termes) en spesiale voorwaardes vir die tender;
2. Toepaslike opdrag
3. Tenderaars moet geregistreer wees op Sentrale verskaffersdatabasis (SVD) as hulle met die munisipaliteit sake wil doen
4. Geen toekenning sal gemaak word aan diensverskaffers wie se Belasting status ongeldig is.
5. Die tender wat ingedien moet word, moet in 'n verseëelde koevert wees wat duidelik gemerk is met die Tondernommer, wat in die tenderbus voor sluitingstyd geplaas word. Versuim sal tot gevolg hê dat die tender ongeldig is.

*Tenderdokumente, in Engels, is verkrygbaar by die kantoor van die Voorsieningskanaalbestuurseenheid, Stellenbosch Munisipaliteit, Meenthuis Kompleks, 1ste Vloer, Pleinstraat, Stellenbosch na betaling van 'n nie-terugbetaalde tenderdeelnamefooi van **R 1865.00 per dokument**. Alternatiewelik mag die dokument gratis afgelaai word vanaf die webblad www.stellenbosch.gov.za.*

Let wel: Die munisipaliteit sal jou nooit kontak om geld te betaal in ruil vir die toekenning van 'n tender nie.

G Mettler (Me)

MUNISIPALE BESTUURDER



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

TENDER NO.: B/SM 109/25

**UPGRADE OF STREETLIGHT INFRASTRUCTURE AND ASSOCIATED
EQUIPMENT: VILLAGES, PROVINCIAL ROADS AND TRAFFIC LIGHT
INTERSECTIONS**

PROCUREMENT DOCUMENT

NAME OF TENDERER:			
Total Bid Price (Inclusive of VAT) <i>(refer to page 370):</i>			
COMPLETION PERIOD IN WORKING DAYS:			
BBBEE LEVEL			
CLAIM POINTS FOR	LOCALITY	YES	NO

DATE: OCTOBER 2025

PREPARED AND ISSUED BY:

Directorate: Finance:
Supply Chain Management Unit
Stellenbosch Municipality,
PO Box 17, Stellenbosch, 7599

**CONTACT FOR ENQUIRIES
REGARDING SPECIFICATIONS:**

**Jan-Louw Engelbrecht
Engineering Technician**

Tel. Number: **087 550 5149**



1. TENDER NOTICE & INVITATION TO TENDER

BID NOTICE

STELLENBOSCH MUNICIPALITY HEREBY INVITES YOU TO TENDER FOR B/SM 109/25 UPGRADE OF STREETLIGHT INFRASTRUCTURE AND ASSOCIATED EQUIPMENT: VILLAGES, PROVINCIAL ROADS AND TRAFFIC LIGHT INTERSECTIONS FOR THE PERIOD ENDING 30 JUNE 2028

TENDER NUMBER: B/SM 109/25
DESCRIPTION: UPGRADE OF STREETLIGHT INFRASTRUCTURE AND ASSOCIATED EQUIPMENT:
VILLAGES, PROVINCIAL ROADS AND TRAFFIC LIGHT INTERSECTIONS FOR THE PERIOD ENDING 30 JUNE 2028

CLOSING DATE: 24 NOVEMBER 2025
CLOSING TIME: 12h00: Bids will be opened in the **Council Chambers or Supply Chain Management Boardroom.**

CIDB: The following CIDB class of construction works will be applicable to the Tender, in accordance with the sum tendered or value determined in accordance with regulation 25(7A) of the Construction Industry Development Regulations, 2004 (as amended) – As of 23 May 2019 - Class of Construction Works: CIDB grading of 6EP or higher is required

INFORMATION:

Tender Specifications: Jan-Louw Engelbrecht at 087 550 5149: e-mail: JanLouwE@motla.co.za
SCM Requirements: Jeanette Williams at 021 808 8524: e-mail: Jeanette.Williams@stellenbosch.gov.za
Office hours for collection: 08h00-15h30

A Compulsory Clarification Site Meeting will be held on **30 October 2025** at **09h00**. The meeting will start in the Electrical Boardroom at 71 Plein Street, Ecclesia Building Stellenbosch, from where it will move to various sites. Tenderers can contact Mark Benson and Bernine Kwago at mark.benson@stellenbosch.gov.za or bernine.kwago@stellenbosch.gov.za should any questions arise concerning the meeting locations. Tenderers who fail to attend the compulsory information session will be regarded as non-compliant.

Tenders may only be submitted on the Tender document issued by Stellenbosch Municipality and must be valid for **180 days** after tender closing. Late, electronic format, telephonic or faxed Tenders will not be considered and Stellenbosch Municipality does not bind itself to accept the lowest bid or any of the tenders that has been submitted.

Sealed Tenders, with " **B/SM 109/25 UPGRADE OF STREETLIGHT INFRASTRUCTURE AND ASSOCIATED EQUIPMENT: VILLAGES, PROVINCIAL ROADS AND TRAFFIC LIGHT INTERSECTIONS FOR THE PERIOD ENDING 30 JUNE 2028**" , clearly endorsed on the envelope, must be deposited in the Tender box at the offices of the Stellenbosch Municipality, Town House Complex, Plein Street, Stellenbosch. The Tender box is accessible 24 hours a day and Tenders must be accompanied by the completed Tender documents. Tenders not accompanied by a complete Tender document, will not be considered.

NOTE: This tender will be evaluated in terms of (FIDIC, CIDB & Special Conditions), Supply Chain Management Policy and relevant specification as depicted in the document and also the Stellenbosch Preferential Procurement Policy effective from 16 January 2023 in accordance with the Preferential Procurement Regulations that was promulgated by the Minister of Finance on 04 November 2022 in Government Gazette No 47452.

The preferential points system applied is as follows: 80/20 in terms of the approved policy.

Price	80
B-BBEE status level of contribution	10
Locality	10
Total points for Price, B-BBEE and locality	100



The following conditions to Tender exist (failure to comply may result in your Tender being disqualified):

1. This Tender is subject to the general conditions of contract (FIDIC, CIDB & Special Conditions) and special conditions for Tendering.
2. Relevant terms of reference.
3. Tenderers must be registered on the Central supplier database (CSD) if they wish to conduct business with the municipality.
4. No award will be made to tenderers whose tax status is non-compliant.
5. Tenders submitted must be in a sealed envelope clearly marked with the Tender number, placed in the tender box before closing time. Failure will result in the tender being invalid.

Tender documents, in English, are available free of charge on the website: www.stellenbosch.gov.za. Alternatively, hard copies of the document are obtainable from the offices of the Supply Chain Management Unit, Stellenbosch Municipality, Town House Complex, 1st Floor, Plein Street, Stellenbosch, upon payment of a non-refundable fee of R 1 865.00 per document.

Note: The municipality will never contact you to pay money in exchange for the award of a tender.

G Mettler (Ms)
MUNICIPAL MANAGER



TENDER KENNISGEWING

STELLENBOSCH MUNISIPALITEIT NOOI U VIR DIE VOLGENDE TENDER: B/SM 109/25: OPGRADERING VAN STRAATLIG INFRASTRUKTUUR EN VERWANTE TOERUSTING: DORPE, PROVINSIALE PAAIE EN VERKEERSLIG KRUISINGS VIR DIE TYDPERK EINDIG 30 JUNIE 2028

TENDER NOMMER: B/SM 109/25
BESKRYWING: OPGRADERING VAN STRAATLIG INFRASTRUKTUUR EN VERWANTE TOERUSTING: DORPE, PROVINSIALE PAAIE EN VERKEERSLIG KRUISINGS VIR DIE TYDPERK EINDIG 30 JUNIE 2028

SLUITINGSDATUM: 24 NOVEMBER 2025
TYD VAN SLUITING: 12h00. Tenders sal oopgemaak word in die Raadsaal of in die Voorsieningskanaalbestuurs Raadsaal.

KIOR: Die volgende KIOR klas vir konstruksiewerk, in ooreenstemming met die totale bedrag getender of waarde bepaal in ooreenstemming met regulasie 25 (7A) van die Konstruksie-industrie Ontwikkelingsraad, Regulasies, 2004 (soos gewysig) op 23 Mei 2019, sal op die bod van toepassing wees. Tendersaars moet 'n **geskatte KIOR kontrakgradering** van ten minste 6 EP of hoër hê

NAVRAE:
Tender spesifikasies: Jan-Louw Engelbrecht by 087 550 5149: e-pos: JanLouwE@motla.co.za
Vkb vereistes: Jeanette Williams by 021 8088524 : e-pos: Jeanette.Williams@stellenbosch.gov.za
Kantoor Ure: 08h00-15h30

'n **Verpligte inligtingssessie (in persoon bywoning)** sal gehou word op **30 Oktober 2025 om 09h00** te 71 Plein Straat, Ecclesia Gebou Stellenbosch in die Elektriese Raadsaal vanwaar die besigtigingsbesoeke sal volg op verskeie terreine. Tendersaars kan **Mark Benson** en **Bernine Kwago** kontak by mark.benson@stellenbosch.gov.za of bernine.kwago@stellenbosch.gov.za indien enige vrae ontstaan rakende die vergaderplekke. Tendersaars wat nie die verpligte inligtingssessie bywoon nie, sal nie in ag geneem word nie.

Tenders mag slegs ingedien word op die tenderdokumentasie verskaf deur Stellenbosch Munisipaliteit en moet geldig wees vir **180 dae** na die sluitingsdatum. Laat, elektroniese formaat of gefakse tenders sal nie aanvaar word nie en Stellenbosch Munisipaliteit is nie verplig om die laagste of enige tender wat ingedien word te aanvaar nie.

Verseëelde tenders duidelik gemerk: "**B/SM 109/25: OPGRADERING VAN STRAATLIG INFRASTRUKTUUR EN VERWANTE TOERUSTING: DORPE, PROVINSIALE PAAIE EN VERKEERSLIG KRUISINGS VIR DIE TYDPERK EINDIG 30 JUNIE 2028**", op die koevert, moet geplaas word in tenderbus buite die kantore van Stellenbosch Munisipaliteit, Meenthuis Kompleks, (Hoofgebou tussen Stadsaal en Munisipale Biblioteek), Stellenbosch. Die tenderbus is 24 uur per dag beskikbaar en tenders moet vergesel word met die voltooide stel tenderdokumente. Tendersaanbiedinge wat nie deur die volledige tenderdokument vergesel word nie, sal nie oorweeg word nie.

LET WEL: Hierdie tender sal geëvalueer word ingevolge die ("FIDIC", KIOR & Spesiale Termes), Voorsieningskanaal Bestuursbeleid en relevante spesifikasies, soos vervat in die tender dokument asook die Stellenbosch Voorkeurverkrygingsbeleid effektief vanaf 16 Januarie 2023 in samewerking met die Voorkeurverkrygingsregulasies wat op 04 November 2022 deur die Minister van Finansies in Staatskoerant No 47452 afgekondig is.

Die voorkeerpunte stelsel is soos volg gebaseer: 80/20 in terme van die goedgekeurde beleid:

Prys	80
BBSEB status	10
Ligging	10
Totale punte vir prys, B-BSEB en ligging	100

Die volgende voorwaardes vir Tender soos volg: (versuim om te voldoen, kan veroorsaak dat u Tender gediskwalifiseer word):



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

1. Hierdie tender is onderworpe aan ("FIDIC", KIOR & Spesiale Termes) en spesiale voorwaardes vir die tender;
2. Toepaslike opdrag
3. Tendersaars moet geregistreer wees op Sentrale verskaffersdatabasis (SVD) as hulle met die munisipaliteit sake wil doen
4. Geen toekenning sal gemaak word aan diensverskaffers wie se Belasting status ongeldig is.
5. Die tender wat ingedien moet word, moet in 'n verseëelde koevert wees wat duidelik gemerk is met die Tondernommer, wat in die tenderbus voor sluitingstyd geplaas word. Versuim sal tot gevolg hê dat die tender ongeldig is.

*Tenderdokumente, in Engels, is verkrygbaar by die kantoor van die Voorsieningskanaalbestuurseenheid, Stellenbosch Munisipaliteit, Meenthuis Kompleks, 1ste Vloer, Pleinstraat, Stellenbosch na betaling van 'n nie-terugbetaalde tenderdeelnamefooi van **R 1865.00 per dokument**. Alternatiewelik mag die dokument gratis afgelaai word vanaf die webblad www.stellenbosch.gov.za.*

Let wel: Die munisipaliteit sal jou nooit kontak om geld te betaal in ruil vir die toekenning van 'n tender nie.

G Mettler (Me)

MUNISIPALE BESTUURDER



**PART A
INVITATION TO BID**

YOU ARE HEREBY INVITED TO BID FOR REQUIREMENTS OF THE (NAME OF MUNICIPALITY/ MUNICIPAL ENTITY)					
BID NUMBER:	BSM 109/25	CLOSING DATE:	24 November 2025	CLOSING TIME:	12:00
DESCRIPTION	UPGRADE OF STREETLIGHT INFRASTRUCTURE AND ASSOCIATED EQUIPMENT: VILLAGES, PROVINCIAL ROADS AND TRAFFIC LIGHT INTERSECTIONS				
THE SUCCESSFUL BIDDER WILL BE REQUIRED TO FILL IN AND SIGN A WRITTEN CONTRACT FORM (MBD7).					

BID RESPONSE DOCUMENTS MUST BE DEPOSITED IN THE BID BOX SITUATED AT **STELLENBOSCH MUNICIPALITY, TOWN HOUSE COMPLEX (MAIN BUILDING BETWEEN TOWN HALL AND MUNICIPAL LIBRARY), PLEIN STREET, STELLENBOSCH**

SUPPLIER INFORMATION					
NAME OF BIDDER					
POSTAL ADDRESS					
STREET ADDRESS					
TELEPHONE NUMBER	CODE		NUMBER		
CELLPHONE NUMBER					
E-MAIL ADDRESS					
VAT REGISTRATION NUMBER					
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 (FOR EMES & QSEs) MUST BE SUBMITTED IN ORDER TO QUALIFY FOR PREFERENCE POINTS FOR B-BBEE]					
1. ARE YOU THE ACCREDITED REPRESENTATIVE IN SOUTH AFRICA FOR THE GOODS /SERVICES /WORKS OFFERED?	☐ Yes ☐ No [IF YES ENCLOSE PROOF]		2. ARE YOU A FOREIGN BASED SUPPLIER FOR THE GOODS /SERVICES /WORKS OFFERED?	☐ Yes ☐ No [IF YES, ANSWER PART B:3]	
3. TOTAL NUMBER OF ITEMS OFFERED			4. TOTAL BID PRICE	R	
5. SIGNATURE OF BIDDER			6. DATE		
7. NAME AND SURNAME OF RESPONSIBLE PERSON					
8. CAPACITY UNDER WHICH THIS BID IS SIGNED					
BIDDING PROCEDURE ENQUIRIES MAY BE DIRECTED TO:			TECHNICAL INFORMATION MAY BE DIRECTED TO:		
DEPARTMENT	Finance (SCM)		CONTACT PERSON	Mark Benson	
CONTACT PERSON	Jeanette Williams		TELEPHONE NUMBER	021 808 8770	
TELEPHONE NUMBER	021 8088524		E-MAIL ADDRESS	mark.benson@ Stellenbosch.gov.za	
E-MAIL ADDRESS	Jeanette.Williams@ Stellenbosch.gov.za				



PART B
TERMS AND CONDITIONS FOR BIDDING

1. BID SUBMISSION:	
1.1. BIDS MUST BE DELIVERED BY THE STIPULATED TIME TO THE CORRECT ADDRESS. LATE BIDS WILL NOT BE ACCEPTED FOR CONSIDERATION.	
1.2. ALL BIDS MUST BE SUBMITTED ON THE OFFICIAL FORMS PROVIDED–(NOT TO BE RE-TYPED) OR SUBMITTED ONLINE	
1.3. THIS BID IS SUBJECT TO THE PREFERENTIAL PROCUREMENT POLICY FRAMEWORK ACT AND THE PREFERENTIAL PROCUREMENT REGULATIONS, 16 January 2023, THE STELLENBOSCH SUPPLY CHAIN MANAGEMENT POLICY, THE GENERAL CONDITIONS OF CONTRACT (GCC, JBCC, FIDIC OR CIDB) AND, IF APPLICABLE, ANY OTHER SPECIAL CONDITIONS OF CONTRACT.	
2. TAX COMPLIANCE REQUIREMENTS	
2.1 BIDDERS MUST ENSURE COMPLIANCE WITH THEIR TAX OBLIGATIONS.	
2.2 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.	
2.3 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.	
2.4 FOREIGN SUPPLIERS MUST COMPLETE THE PRE-AWARD QUESTIONNAIRE IN PART B:3.	
2.5 BIDDERS MAY ALSO SUBMIT A PRINTED TCS CERTIFICATE TOGETHER WITH THE BID.	
2.6 IN BIDS WHERE CONSORTIA / JOINT VENTURES / SUB-CONTRACTORS ARE INVOLVED, EACH PARTY MUST SUBMIT A SEPARATE TCS CERTIFICATE / PIN / CSD NUMBER.	
2.7 WHERE NO TCS IS AVAILABLE BUT THE BIDDER IS REGISTERED ON THE CENTRAL SUPPLIER DATABASE (CSD), A CSD NUMBER MUST BE PROVIDED.	
3. QUESTIONNAIRE TO BIDDING FOREIGN SUPPLIERS	
3.1. IS THE ENTITY A RESIDENT OF THE REPUBLIC OF SOUTH AFRICA (RSA)?	☐ YES ☐ NO
3.2. DOES THE ENTITY HAVE A BRANCH IN THE RSA?	☐ YES ☐ NO
3.3. DOES THE ENTITY HAVE A PERMANENT ESTABLISHMENT IN THE RSA?	☐ YES ☐ NO
3.4. DOES THE ENTITY HAVE ANY SOURCE OF INCOME IN THE RSA?	☐ YES ☐ NO
3.5. 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 2.3 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:

.....

NAME AND SURNAME

.....

DATE

.....



CONTENTS

	PAGE NUMBER
1. TENDER NOTICE & INVITATION TO TENDER.....	2
TENDER KENNISGEWING.....	4
PART A – ADMINISTRATIVE REQUIREMENTS IN TERMS OF THE SUPPLY CHAIN MANAGEMENT POLICY.....	10
2. CHECKLIST.....	11
3. CLARIFICATION/VIRTUAL MEETING CERTIFICATE.....	12
4. AUTHORITY TO SIGN A BID	13
5. CERTIFICATE OF AUTHORITY FOR JOINT VENTURES.....	15
6. STANDARD CONDITIONS OF TENDER (CIDB).....	16
7. FIDIC – GOVERNMENT PROCUREMENT	29
8. GENERAL CONDITIONS OF CONTRACT – GOVERNMENT PROCUREMENT.....	33
9. GENERAL CONDITIONS OF TENDER	34
10. SPECIAL CONDITIONS OF CONTRACT	36
11. MBD 4 – DECLARATION OF INTEREST.....	40
12. MBD5 – DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (VAT INCLUDED)	43
13. MBD6.1 – PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022 – PURCHASES/SERVICES 80/20	44
14. MBD 8 – DECLARATION OF BIDDER'S PAST SUPPLY CHAIN MANAGEMENT PRACTICES	54
15. MBD 9 – CERTIFICATE OF INDEPENDENT BID DETERMINATION	56
16. MBD 10 – CERTIFICATE FOR PAYMENT OF MUNICIPAL SERVICES	58
17. COMPENSATION FOR OCCUPATIONAL INJURIES AND DISEASES ACT, 1993 (ACT 130 OF 1993).....	59
18. FORM OF INDEMNITY	60
PART B – SPECIFICATIONS AND PRICING SCHEDULE.....	61
19. SPECIFICATIONS	62
20. PRE-QUALIFICATION SCORE SHEET	363
21. SCHEDULE OF PLANT AND EQUIPMENT	365



22.	SCHEDULE OF SUBCONTRACTORS	366
23.	SCHEDULE OF WORK EXPERIENCE OF THE TENDERER – CURRENT CONTRACTS.....	367
24.	SCHEDULE OF WORK EXPERIENCE OF THE TENDERER – COMPLETED CONTRACTS.....	368
25.	CERTIFICATE OF REGISTRATION WITH CIDB	369
26.	FORM OF OFFER AND ACCEPTANCE	370
27.	PRICING SCHEDULE	372
28.	DECLARATION BY TENDERER	373



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

PART A – ADMINISTRATIVE REQUIREMENTS IN TERMS OF THE SUPPLY CHAIN MANAGEMENT POLICY



2. CHECKLIST

PLEASE ENSURE THAT THE FOLLOWING FORMS HAVE BEEN DULY COMPLETED AND SIGNED AND THAT ALL DOCUMENTS AS REQUESTED, ARE ATTACHED TO THE TENDER DOCUMENT:

Certificate of Clarification Meeting Attendance - Is the form duly completed and signed by both tenderer and agent of the Stellenbosch Municipality?	Yes		No	
Authority to Sign a Bid - Is the form duly completed and is a certified copy of the resolution attached?	Yes		No	
MBD 4 (Declaration of Interest) - Is the form duly completed and signed?	Yes		No	
MBD 5 - Is the form duly completed and signed?	Yes		No	
MBD 6.1 (Preference Points claim form for purchases/services) - Is the form duly completed and signed? Is a copy of the B-BBEE Certificate issued by a Verification Agency accredited by SANAS or the original Sworn Affidavit attached? (NB! BBBEE CERTIFICATES CAN BE VERIFIED WITH THE VERIFICATION AGENCY BUT A SWORN AFFIDAVIT MUST BE AN ORIGINAL AND NOT A COPY TO BE ELIGIBLE FOR BBBEE POINTS)	Yes		No	
MBD 8 (Declaration of Past Supply Chain Practices) - Is the form duly completed and signed?	Yes		No	
MBD 9 (Certificate of Independent Bid Determination) - Is the form duly completed and signed?	Yes		No	
MBD 10 (Certificate of Payment of Municipal Accounts) - Is the form duly completed and signed? Are the Identity numbers, residential addresses and municipal account numbers of ALL members, partners, directors, etc. provided on the form as requested? (NB! MUNICIPAL ACCOUNTS WILL BE VERIFIED AND USED AS BASIS FOR PREFERENCE POINTS SCORING IN TERMS OF THE STELLENBOSCH PREFERENTIAL PROCUREMENT POLICY. THE BUSINESS ADDRESS, LEASE AGREEMENT OR SWORN AFFADAVIT WILL BE THE BASIS FOR AWARDING POINTS FOR LOCALITY)	Yes		No	
OHSA (Occupational Health and Safety) - Is the form duly completed and signed? Is a valid Letter of Good Standing from the Compensation Commissioner attached?	Yes		No	
Form of Indemnity - Is the form duly completed and signed?	Yes		No	
Pricing Schedule - Is the form duly completed and signed?	Yes		No	
Form of Offer - Is the form duly completed and signed? (If applicable)	Yes		No	
Declaration by Tenderer - Is the form duly completed and signed?	Yes		No	



3. CLARIFICATION MEETING CERTIFICATE

I / We*, the undersigned, certify that I / we* have examined the Site for the Works and its surroundings for which I / we* am / are* submitting this Tender and have, as far as practicable possible, familiarized myself / ourselves* with all information, risks, contingencies and other circumstances which may influence or affect my / our* tender.

NAME & SURNAME			
CAPACITY			
NAME OF FIRM			
ADDRESS			
TELEPHONE NO			
E-MAIL		SIGNATURE	

NB: Please note that no latecomers will be allowed.

*For all compulsory briefing sessions/site meetings/clarification meetings, bids received from interested bidders that did not attend the meeting or arrived later than predetermined date and time, will be **disqualified***



4. AUTHORITY TO SIGN A BID

1. SOLE PROPRIETOR (SINGLE OWNER BUSINESS) AND NATURAL PERSON

1.1. I, _____, the undersigned, hereby confirm that I am the sole owner of the business trading as _____.

OR

1.2. I, _____, the undersigned, hereby confirm that I am submitting this tender in my capacity as natural person.

SIGNATURE:		DATE:	
PRINT NAME:			
WITNESS 1:		WITNESS 2:	

OR

2. COMPANIES AND/OR CLOSE CORPORATIONS

- 2.1. If a Bidder is a **COMPANY**, a certified copy of the resolution by the board of directors, duly signed, authorising the person who signs this bid to do so, as well as to sign any contract resulting from this bid and any other documents and correspondence in connection with this bid and/or contract on behalf of the company **must be submitted with this bid**, that is, before the closing time and date of the bid
- 2.2. In the case of a **CLOSE CORPORATION (CC)** submitting a bid, a **resolution by its members**, authorizing a member or other official of the corporation to sign the documents on their behalf, **shall be included with the bid**.

PARTICULARS OF RESOLUTION BY BOARD OF DIRECTORS OF THE COMPANY/MEMBERS OF THE CC

Date Resolution was taken			
Resolution signed by (name and surname)			
Capacity			
Name and surname of delegated Authorised Signatory			
Capacity			
Specimen Signature			
Full name and surname of ALL Director(s) / Member (s)			
1.		2.	
3.		4.	
5.		6.	
7.		8.	
9.		10.	
Is a COPY of the resolution attached?		YES	NO
SIGNED ON BEHALF OF COMPANY / CC:		DATE:	
PRINT NAME:			
WITNESS 1:		WITNESS 2:	



OR

3. PARTNERSHIP

We, the undersigned partners in the business trading as _____ hereby authorize Mr/Ms _____ to sign this bid as well as any contract resulting from the bid and any other documents and correspondence in connection with this bid and /or contract for and on behalf of the abovementioned partnership.

The following particulars in respect of every partner must be furnished and signed by every partner:

Full name of partner			Signature
SIGNED ON BEHALF OF PARTNERSHIP:		DATE:	
PRINT NAME:			
WITNESS 1:		WITNESS 2:	

OR

4. CONSORTIUM

We, the undersigned consortium partners, hereby authorize _____ (Name of entity) to act as lead consortium partner and further authorize Mr./Ms. _____ To sign this offer as well as any contract resulting from this tender and any other documents and correspondence in connection with this tender and / or contract for and on behalf of the consortium.

The following particulars in respect of each consortium member must be provided and signed by each member:

Full Name of Consortium Member	Role of Consortium Member	% Participation	Signature
SIGNED ON BEHALF OF PARTNERSHIP:		DATE:	
PRINT NAME:			
WITNESS 1:		WITNESS 2:	



5. CERTIFICATE OF AUTHORITY FOR JOINT VENTURES

This returnable schedule is to be completed by JOINT VENTURES

We, the undersigned, are submitting this tender offer in joint venture and hereby authorize Mr./Ms. _____

authorized signatory of the Company/Close Corporation/Partnership (name) _____

_____, acting in the capacity of lead partner, to sign all documents in connection with the tender offer and any contract resulting from it on our behalf.

(i) Name of firm (Lead partner)			
Address			
		Tel. No.	
Signature		Designation	

(ii) Name of firm			
Address			
		Tel. No.	
Signature		Designation	

(iii) Name of firm			
Address:			
		Tel. No.	
Signature		Designation	

(iv) Name of firm			
Address			
		Tel. No.	
Signature		Designation	

NOTE: A copy of the Joint Venture Agreement showing clearly the percentage contribution of each partner to the Joint Venture, shall be appended to this Schedule.



6. STANDARD CONDITIONS OF TENDER (CIDB)

F.1 General

F.1.1 Actions

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

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

Note

- 1) *A conflict of interest may arise due to a conflict of roles, which might provide an incentive for improper acts in some circumstances. A conflict of interest can create an appearance of impropriety that can undermine confidence in the ability of that person to act properly in his or her position even if no improper acts result.*
- 2) *Conflicts of interest in respect of those engaged in the procurement process include direct, indirect or family interests in the tender or outcome of the procurement process and any personal bias, inclination, obligation, allegiance or loyalty, which would in any way, affect any decisions taken.*

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

F.1.2 Tender Documents

The documents issued by the employer for the purpose of a tender offer are listed in the tender data.

F.1.3 Interpretation

F.1.3.1 The tender data and additional requirements contained in the tender schedules that are included in the returnable documents are deemed to be part of these conditions of tender.

F.1.3.2 These conditions of tender, the tender data and tender schedules, which are only required for tender evaluation purposes, shall not form part of any contract arising from the invitation to tender.

F.1.3.3 For the purposes of these conditions of tender, the following definitions apply:

- a) **conflict of interest** means any situation in which:
 - i) someone in a position of trust has competing professional or personal interests which make it difficult to fulfil his or her duties impartially;
 - ii) an individual or organisation is in a position to exploit a professional or official capacity in some way for their personal or corporate benefit; or
 - iii) incompatibility or contradictory interests exist between an employee and the organisation which employs that employee.
- b) **comparative offer** means the price after the factors of a non-firm price and all unconditional discounts it can be utilised to have been taken into consideration;



- c) **corrupt practice** means the offering, giving, receiving or soliciting of anything of value to influence the action of the employer or his staff or agents in the tender process;
- d) **fraudulent practice** means the misrepresentation of the facts in order to influence the tender process or the award of a contract arising from a tender offer to the detriment of the employer, including collusive practices intended to establish prices at artificial levels;
- e) **organization** means a company, firm, enterprise, association or other legal entity, whether incorporated or not, or a public body;
- f) **functionality** means the measurement according to the predetermined norms of a service or commodity designed to be practical and useful, working or operating, taking into account quality, reliability, viability and durability of a service and technical capacity and ability of a tenderer.

F.1.4 Communication and employer's agent

Each communication between the employer and a tenderer shall be to or from the employer's agent only, and in a form that can be readily read, copied and recorded. Communications shall be in the English language. The employer shall not take any responsibility for non- receipt of communications from or by a tenderer. The name and contact details of the employer's agent are stated in the tender data.

F.1.5 Cancellation and Re-Invitation of Tenders

F1.5.1 An organ of state may, prior to the award of the tender, cancel a tender if-

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

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

F.1.6 Procurement procedures

F.1.6.1 General

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

F.1.6.2 Competitive negotiation procedure

F.1.6.2.1 Where the tender data require that the competitive negotiation procedure is to be followed, tenderers shall submit tender offers in response to the proposed contract in the first round of submissions. Notwithstanding the requirements of F.3.4, the employer shall announce only the names of the tenderers who make a submission. The requirements of F.3.8 relating to the material deviations or qualifications which affect the competitive position of tenderers shall not apply.

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



additional information does not alter any fundamental aspects of the offers or impose substantial new requirements which restrict or distort competition or have a discriminatory effect.

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

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

F.1.6.3 Proposal procedure using the two stage-system

F.1.6.3.1 Option 1

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

F.1.6.3.2 Option 2

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

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

F.2 Tenderer's obligations

F.2.1 Eligibility

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

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

F.2.2 Cost of tendering

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

F.2.2.2 The cost of the tender documents charged by the employer shall be limited to the actual cost incurred by the employer for printing the documents. Employers must attempt to make available the tender documents on its website so as not to incur any costs pertaining to the printing of the tender documents.

F.2.3 Check documents

Check the tender documents on receipt for completeness and notify the employer of any discrepancy or omission.

F.2.4 Confidentiality and copyright of documents



Treat as confidential all matters arising in connection with the tender. Use and copy the documents issued by the employer only for the purpose of preparing and submitting a tender offer in response to the invitation.

F.2.5 Reference documents

Obtain, as necessary for submitting a tender offer, copies of the latest versions of standards, specifications, conditions of contract and other publications, which are not attached but which are incorporated into the tender documents by reference.

F.2.6 Acknowledge addenda

Acknowledge receipt of addenda to the tender documents, which the employer may issue, and if necessary apply for an extension to the closing time stated in the tender data, in order to take the addenda into account.

F.2.7 Clarification meeting

Attend, where required, a clarification meeting at which tenderers may familiarize themselves with aspects of the proposed work, services or supply and raise questions. Details of the meeting(s) are stated in the tender data.

F.2.8 Seek clarification

Request clarification of the tender documents, if necessary, by notifying the employer at least five working days before the closing time stated in the tender data.

F.2.9 Insurance

Be aware that the extent of insurance to be provided by the employer (if any) might not be for the full cover required in terms of the conditions of contract identified in the contract data. The tenderer is advised to seek qualified advice regarding insurance.

F.2.10 Pricing the tender offer

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

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

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

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

F.2.11 Alterations to documents

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

F.2.12 Alternative tender offers

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

F.2.12.2 Accept that an alternative tender offer may be based only on the criteria stated in the tender data or criteria otherwise acceptable to the employer.



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

F.2.13 Submitting a tender offer

F.2.13.1 Submit one tender offer only, either as a single tendering entity or as a member in a joint venture to provide the whole of the works, services or supply identified in the contract data and described in the scope of works, unless stated otherwise in the tender data.

F.2.13.2 Return all returnable documents to the employer after completing them in their entirety, either electronically (if they were issued in electronic format) or by writing legibly in non-erasable ink.

F.2.13.3 Submit the parts of the tender offer communicated on paper as an original plus the number of copies stated in the tender data, with an English translation of any documentation in a language other than English, and the parts communicated electronically in the same format as they were issued by the employer.

F.2.13.4 Sign the original and all copies of the tender offer where required in terms of the tender data. The employer will hold all authorized signatories liable on behalf of the tenderer. Signatories for tenderers proposing to contract as joint ventures shall state which of the signatories is the lead partner whom the employer shall hold liable for the purpose of the tender offer.

F.2.13.5 Seal the original and each copy of the tender offer as separate packages marking the packages as "ORIGINAL" and "COPY". Each package shall state on the outside the employer's address and identification details stated in the tender data, as well as the tenderer's name and contact address.

F.2.13.6 Where a two-envelope system is required in terms of the tender data, place and seal the returnable documents listed in the tender data in an envelope marked "financial proposal" and place the remaining returnable documents in an envelope marked "technical proposal". Each envelope shall state on the outside the employer's address and identification details stated in the tender data, as well as the tenderer's name and contact address.

F.2.13.7 Seal the original tender offer and copy packages together in an outer package that states on the outside only the employer's address and identification details as stated in the tender data.

F.2.13.8 Accept that the employer will not assume any responsibility for the misplacement or premature opening of the tender offer if the outer package is not sealed and marked as stated.

F.2.13.9 Accept that tender offers submitted by facsimile or e-mail will be rejected by the employer, unless stated otherwise in the tender data.

F.2.14 Information and data to be completed in all respects

Accept that tender offers, which do not provide all the data or information requested completely and in the form required, may be regarded by the employer as non-responsive.

F.2.15 Closing time

F.2.15.1 Ensure that the employer receives the tender offer at the address specified in the tender data not later than the closing time stated in the tender data. Accept that proof of posting shall not be accepted as proof of delivery.

F.2.15.2 Accept that, if the employer extends the closing time stated in the tender data for any reason, the requirements of these conditions of tender apply equally to the extended deadline.

F.2.16 Tender offer validity



-
- F.2.16.1** Hold the tender offer(s) valid for acceptance by the employer at any time during the validity period stated in the tender data after the closing time stated in the tender data.
- F.2.16.2** If requested by the employer, consider extending the validity period stated in the tender data for an agreed additional period with or without any conditions attached to such extension.
- F.2.16.3** Accept that a tender submission that has been submitted to the employer may only be withdrawn or substituted by giving the employer's agent written notice before the closing time for tenders that a tender is to be withdrawn or substituted.
- F.2.16.4** Where a tender submission is to be substituted, submit a substitute tender in accordance with the requirements of F.2.13 with the packages clearly marked as "SUBSTITUTE".

F.2.17 Clarification of tender offer after submission

Provide clarification of a tender offer in response to a request to do so from the employer during the evaluation of tender offers. This may include providing a breakdown of rates or prices and correction of arithmetical errors by the adjustment of certain rates or item prices (or both). No change in the competitive position of tenderers or substance of the tender offer is sought, offered, or permitted.

***Note:** Sub-clause F.2.17 does not preclude the negotiation of the final terms of the contract with a preferred tenderer following a competitive selection process, should the Employer elect to do so.*

F.2.18 Provide other material

- F.2.18.1** Provide, on request by the employer, any other material that has a bearing on the tender offer, the tenderer's commercial position (including notarized joint venture agreements), preferencing arrangements, or samples of materials, considered necessary by the employer for the purpose of a full and fair risk assessment. Should the tenderer not provide the material, or a satisfactory reason as to why it cannot be provided, by the time for submission stated in the employer's request, the employer may regard the tender offer as non-responsive.
- F.2.18.2** Dispose of samples of materials provided for evaluation by the employer, where required.

F.2.19 Inspections, tests and analysis

Provide access during working hours to premises for inspections, tests and analysis as provided for in the tender data.

F.2.20 Submit securities, bonds and policies

If requested, submit for the employer's acceptance before formation of the contract, all securities, bonds, guarantees, policies and certificates of insurance required in terms of the conditions of contract identified in the contract data.

F.2.21 Check final draft

Check the final draft of the contract provided by the employer within the time available for the employer to issue the contract.

F.2.22 Return of other tender documents

If so instructed by the employer, return all retained tender documents within 28 days after the expiry of the validity period stated in the tender data.

F.2.23 Certificates

Include in the tender submission or provide the employer with any certificates as stated in the tender data.

F.3 The employer's undertakings

F.3.1 Respond to requests from the tenderer



F.3.1.1 Unless otherwise stated in the tender Data, respond to a request for clarification received up to five working days before the tender closing time stated in the Tender Data and notify all tenderers who drew procurement documents.

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

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

F.3.2 Issue Addenda

If necessary, issue addenda that may amend or amplify the tender documents to each tenderer during the period from the date that tender documents are available until three days before the tender closing time stated in the Tender Data. If, as a result a tenderer applies for an extension to the closing time stated in the Tender Data, the Employer may grant such extension and, shall then notify all tenderers who drew documents.

F.3.3 Return late tender offers

Return tender offers received after the closing time stated in the Tender Data, unopened, (unless it is necessary to open a tender submission to obtain a forwarding address), to the tenderer concerned.

F.3.4 Opening of tender submissions

F.3.4.1 Unless the two-envelope system is to be followed, open valid tender submissions in the presence of tenderers' agents who choose to attend at the time and place stated in the tender data. Tender submissions for which acceptable reasons for withdrawal have been submitted will not be opened.

F.3.4.2 Announce at the meeting held immediately after the opening of tender submissions, at a venue indicated in the tender data, the name of each tenderer whose tender offer is opened and, where applicable, the total of his prices, number of points claimed for its B-BBEE status level and time for completion for the main tender offer only.

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

F.3.5 Two-envelope system

F.3.5.1 Where stated in the tender data that a two-envelope system is to be followed, open only the technical proposal of valid tenders in the presence of tenderers' agents who choose to attend at the time and place stated in the tender data and announce the name of each tenderer whose technical proposal is opened.

F.3.5.2 Evaluate functionality of the technical proposals offered by tenderers, then advise tenderers who remain in contention for the award of the contract of the time and place when the financial proposals will be opened. Open only the financial proposals of tenderers, who score in the functionality evaluation more than the minimum number of points for functionality stated in the tender data, and announce the score obtained for the technical proposals and the total price and any points claimed on B-BBEE status level. Return unopened financial proposals to tenderers whose technical proposals failed to achieve the minimum number of points for functionality.



F.3.6 Non-disclosure

Not disclose to tenderers, or to any other person not officially concerned with such processes, information relating to the evaluation and comparison of tender offers, the final evaluation price and recommendations for the award of a contract, until after the award of the contract to the successful tenderer.

F.3.7 Grounds for rejection and disqualification

Determine whether there has been any effort by a tenderer to influence the processing of tender offers and instantly disqualify a tenderer (and his tender offer) if it is established that he engaged in corrupt or fraudulent practices.

F.3.8 Test for responsiveness

F.3.8.1 Determine, after opening and before detailed evaluation, whether each tender offer properly received:

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

F.3.8.2 A responsive tender is one that conforms to all the terms, conditions, and specifications of the tender documents without material deviation or qualification. A material deviation or qualification is one which, in the Employer's opinion, would:

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

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

F.3.9 Arithmetical errors, omissions and discrepancies

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

- a) the gross misplacement of the decimal point in any unit rate;
- b) omissions made in completing the pricing schedule or bills of quantities; or
- c) arithmetic errors in:
 - i) line item totals resulting from the product of a unit rate and a quantity in bills of quantities or schedules of prices; or
 - ii) the summation of the prices.

F3.9.2 The employer must correct the arithmetical errors in the following manner:

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



- c) Where there is an error in the total of the prices either as a result of other corrections required by this checking process or in the tenderer's addition of prices, the total of the prices shall govern and the tenderer will be asked to revise selected item prices (and their rates if bills of quantities apply) to achieve the tendered total of the prices.

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

F.3.10 Clarification of a tender offer

Obtain clarification from a tenderer on any matter that could give rise to ambiguity in a contract arising from the tender offer.

F.3.11 Evaluation of tender offers

F.3.11.1 General

Appoint an evaluation panel of not less than three persons. Reduce each responsive tender offer to a comparative offer and evaluate them using the tender evaluation methods and associated evaluation criteria and weightings that are specified in the tender data.

F.3.11.2 Method 1: Price and Preference

In the case of a price and preference:

- 1) Score tender evaluation points for price
- 2) Score points for preference
- 3) Add the points scored for price and preference

F.3.11.3 Method 2: Functionality, Price and Preference

In the case of a functionality, price and preference:

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

The 80/20 point system for acquisition of services, works or goods up to Rand value of R50 million.

The following formula must be used to calculate the points for price in respect of tender (including price quotation) with a rand value equal to, or above R30 000 and up to Rand value of R50 000 000 (all applicable taxes included):

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

Where:

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



- 6) (a)(1) A maximum of 20 points (80/20 preference points system) or 10 (90/10 preference points system), must be allocated for specific goals. These goals are :
- (ii) contracting with persons, or categories of persons, historically disadvantaged by unfair discrimination on the basis of race, gender or disability;
 - (iii) Promotion of enterprises located in the municipal area (WCO24)
- 7) Regarding par 6(a)(i) at least 50% of the 10/10 points must be allocated to promote this goal and points will be allocated in terms of the BBBEE scorecard as follows.

B-BBEE status level of contributor	Number of points
1	10
2	9
3	6
4	5
5	4
6	3
7	2
8	1
Non-compliant contributor	0

- A tenderer must submit proof of its BBBEE status level contributor.
- A tenderer failing to submit proof of BBBEE status level of contributor may only score in terms of the 80/90-point formula for price; and scores 0 points out of 10/5 BBBEE status level of contributor, which is in line with section 2 (1) (d) (i) of the Act, where the supplier or service provider did not provide proof thereof.

- 8) Regarding par 6(a)(1)(ii) a maximum of 50% of the 10/10 points must be allocated to promote this goal. Maximum points will be allocated as follows.

Locality of supplier	Number of Points for 80/20 Preference Points System	Number of Points for 90/10 Preference Points System
Within the boundaries of the municipality	10	0
Outside of the boundaries of the municipality	0	0

The maximum will be proportionately adjusted depending on the number of points allocated for this goal. E.G., 40% will equate to 8/4 points.

- 5) (c) A maximum of 10 points may be allocated in accordance with subparagraph (5)(b).
- 5) (d) The points scored by tender in respect of B-BBEE contribution must be added to the points scored for price as calculated



- 5) (e) Subject to paragraph 4.3.8 of “Standard for Uniformity in Procurement, April 2017”, the contract must be awarded to the tender who scores the highest total number of points.

F.3.11.6 Decimal places

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

F.3.11.7 Scoring Price

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

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

Where:

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

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

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

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

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

F.3.11.8 Scoring preferences

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

F.3.11.9 Scoring

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

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

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

Where:

S_O = the score for quality allocated to the submission under consideration;

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

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



F.3.12 Insurance provided by the employer

If requested by the proposed successful tenderer, submit for the tenderer's information the policies and / or certificates of insurance which the conditions of contract identified in the contract data, require the employer to provide.

F.3.13 Acceptance of tender offer

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

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

F.3.14 Prepare contract documents

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

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

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

F.3.15 Complete adjudicator's contract

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

F.3.16 Notice to unsuccessful tenderers

F.3.16.1 Notify the successful tenderer of the employer's acceptance of his tender offer by completing and returning one copy of the form of offer and acceptance before the expiry of the validity period stated in the tender data, or agreed additional period.

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

F.3.17 Provide copies of the contracts

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



F.3.18 Provide written reasons for actions taken

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

F3.19 Transparency in the procurement process

- F3.19.1** The cidb prescripts require that tenders must be advertised and be registered on the cidb i-Tender system.
- F3.19.2** The employer must adopt a transparency model that incorporates the disclosure and accountability as transparency requirements in the procurement process.
- F3.19.3** The transparency model must identify the criteria for selection of projects, project information template and the threshold value of the projects to be disclosed in the public domain at various intervals of delivery of infrastructure projects.
- F3.19.4** The client must publish the information on a quarterly basis, which contains the following information:
- Procurement planning process
 - Procurement method and evaluation process
 - Contract type
 - Contract status
 - Number of firms tendering
 - Cost estimate
 - Contract title
 - Contract firm(s)
 - Contract price
 - Contract scope of work
 - Contract start date and duration
 - Contract evaluation reports
- F3.19.5** The employer must establish a Consultative Forum which will conduct a random audit in the implementation of the transparency requirements in the procurement process.
- F3.19.6** Consultative Forum must be an independent structure from the bid committees. F3.19.7 The information must be published on the employer's website.
- F 3.19.8** Records of such disclosed information must be retained for audit purposes.



7. FIDIC – GOVERNMENT PROCUREMENT

The General Conditions of Contract are the Conditions of Contract for Construction for Building and Engineering Works Designed by the Employer, First Edition 1999, published by the Fédération Internationale des Ingénieurs-Conseils (FIDIC), commonly known as the FIDIC Red Book (1999 Edition).

These General Conditions are not included in full in this document but are incorporated by reference. The Contractor is expected to have its own copy of and be fully familiar with the FIDIC Red Book (1999 Edition).

7.1 Particular Conditions of Contract

These Particular Conditions of Contract supplement and amend the General Conditions. Where there is any conflict between the General Conditions and these Particular Conditions, the provisions of the Particular Conditions shall prevail. Clause numbers refer to the corresponding clauses in the General Conditions.

7.1.1. Definitions

- 7.1.1.1. The "Employer" is the Stellenbosch Municipality, represented by the Municipal Manager or their designated representative.
- 7.1.1.2. The "Engineer" is Jan-Louw Engelbrecht of Motla Consulting Engineers, or any other competent person appointed by the Employer to act as Engineer for the purposes of the Contract.
- 7.1.1.3. Ruling Language" is English.
- 7.1.1.4. "Laws" means the laws of the Republic of South Africa.

7.1.2. Right of Access to the Site

The Employer shall grant the Contractor right of access to the Site within 14 (fourteen) days after the Commencement Date. The Employer is not liable for delays caused by failure to secure access from other authorities (e.g., provincial roads departments), provided the Employer can demonstrate reasonable efforts were made. Such delays shall be considered for an Extension of Time under Sub-Clause 8.4, but not for additional costs.

7.1.3. Contractor's General Obligations

The Contractor shall provide, and maintain a roster of all personnel on-site. All personnel must have undergone the necessary safety inductions and possess valid identification. This shall without exemption be provided by the Contractor prior to any works starting on site. Any delays caused by the Contractor with late submissions, shall not impact the accepted (By Client and Engineer) programme timeline and cost as per the original contract between Client and Contractor. The Engineer may, at any time, request proof of qualifications and certifications for key personnel, including the site agent, electricians (with valid Wireman's Licence), and plant operators. Failure to provide such proof within 48 hours may result in the instruction to remove the individual from the Site.

7.1.4. Engagement of Staff and Labour

The Contractor is required to prioritize the employment of local labour from within the wards of the Stellenbosch Municipality where the work is taking place, as per client requirements, and for non-specialist roles. Any delays caused to the project, pertaining to the successful employment of local labour shall be a collaborative effort between the



Client and Contractor, and successfully completed prior to the commencement of any works on site. This shall be completed per site, at least 2 weeks prior to the start of works on site. The Contractor shall arrange, with the Municipal Representative, for the local labour processes and communication within the Kick Off Meeting.

7.1.5. Programme

The Contractor shall submit a detailed programme to the Engineer for approval within 21 (twenty-one) days of the Commencement Date. This programme must clearly indicate:

Critical path activities.

Procurement lead times for key materials (poles, luminaires, kiosks).

Scheduled dates for required inspections and approvals from the Engineer.

Allowance for work in different municipal areas (villages, provincial roads) as outlined in the Scope of Work, including set and committed dates of successfully concluded wayleave applications, local labour appointment, and new / relocated / upgraded points of supply from the utility provider.

Failure by the Contractor to adhere to the approved programme without valid cause will result in the application of penalties as per 7.1.6.1. Delay Damages.

A mandatory revised programme shall accompany each claim. Failure to provide the updated programme, shall render the claim void.

Claims shall be provided to the Engineer by the 15th of each month

7.1.6. Extension of Time for Completion

The following shall not be considered grounds for an Extension of Time or additional cost claims:

- Delays caused by the Contractor's failure to timeously procure materials or deploy qualified personnel.
- Inclement weather is reasonably foreseeable for the Western Cape region. Only exceptionally adverse climatic conditions will be considered.
- Delays resulting from the Contractor's failure to coordinate with local authorities or other service providers after being given the necessary initial contact details by the Employer.
- Ordering of materials prior to formal instruction from the Engineer and Client Representative

7.1.6.1. Delay Damages

If the Contractor fails to comply with the Time for Completion, the delay damages shall be 0.1% (zero point one percent) of the final Contract Price for every day of delay, up to a maximum of 10% (ten percent) of the final Contract Price.

7.1.7. Right to Vary

The Employer reserves the right to vary the quantities of work as specified in the Bill of Quantities. This is a re-measurable contract, and payment will be based on the actual, verified quantities of work performed and approved by the Engineer. Such variations in quantity shall not be used as a basis for a claim for a change in rates or time, unless the change significantly alters the character of the work.



7.1.8. Advance Payment

No advance payment shall be made.

7.1.9. Application for Interim Payment Certificates

The Contractor shall submit a monthly statement to the Engineer, detailing the work executed. The statement must be accompanied by:

As-built drawings of the completed sections.

Quality control checklists and test certificates.

Signed-off records of recycled/removed materials, including EEDSM grant-funded items.

The Engineer shall not certify any payment without this supporting documentation.

7.1.11 Payment

The Employer shall pay the amount certified by the Engineer within 30 (thirty) days of the date of issue of the Payment Certificate.

7.1.10. Indemnities

The Contractor shall indemnify the Employer against all claims arising from its operations, including but not limited to damage to existing municipal or third-party services (e.g., Eskom infrastructure, fibre optic cables, water pipes).

Mandatory proof of "Contractor's all Risk" and "Public Liability" insurance shall be supplied to the Engineer and Client within the Kick Off meeting upon tender award, by the winning bidder.

7.1.11. Contractor's Claims

If the Contractor considers himself to be entitled to any extension of the Time for Completion and/or any additional payment, under any Clause of these Conditions or otherwise in connection with the Contract, the Contractor shall give Notice to the Engineer, describing the event or circumstance giving rise to the claim. The Notice shall be given as soon as practicable, and not later than 28 days after the Contractor became aware, or should have become aware, of the event or circumstance.

- a. Content of Notice: The Notice shall state the contractual basis of the claim and include prima facie evidence supporting the claim. A Notice that fails to provide this information shall be deemed invalid.
- b. Engineer's Right to Records: Upon receipt of a Notice of claim, the Engineer shall have the right to access and inspect any and all of the Contractor's records, documents, and other evidence relevant to the event or circumstance giving rise to the claim.
- c. Waiver of Claim: Failure by the Contractor to provide the fully detailed claim with all supporting particulars as required by this Sub-Clause within the specified time limits shall constitute a waiver of the claim in its entirety. The Employer shall be discharged from all liability in connection with the claim, and the claim shall be considered time-barred.



7.1.12. Quality and Technical Compliance

The Contractor shall develop and implement a comprehensive Project Quality Management Plan (QMP) for the Engineer's approval within 28 days of the Commencement Date. The QMP shall, as a minimum, include:

- a. Technical Submittal Register: A register of all materials and equipment requiring approval (luminaires, poles, kiosks, cables, etc.). No materials may be ordered or delivered to Site until the Engineer has approved the corresponding technical data sheets against the Specification.
- b. Inspection and Test Plan (ITP): A detailed plan outlining all quality control checks, tests, and witnessing points for the Engineer at key stages (e.g., pole planting, cable testing, luminaire installation, commissioning).
- c. Non-Conformance Management: A procedure for identifying, reporting, and rectifying any work or materials that do not conform to the Specification. The cost of all remedial work shall be borne by the Contractor.

7.1.13. Data, Documentation & As Built Records

- a. Ownership of Data: All data, drawings, reports, and digital records (including GPS coordinates, photographic records, and test results) produced by the Contractor during the execution of the Works shall become the sole property of the Employer upon their creation.
- b. As-Built Format: In addition to the requirements of Sub-Clause 7.1.9, all as-built drawings shall be submitted in both editable CAD (.dwg) and portable document (.pdf) formats. Final submission shall include a complete set of GIS-compatible shapefiles or equivalent geo-referenced data detailing the final location and attributes of all installed assets. The Engineer shall not issue the Taking-Over Certificate until these records are received and approved.



8. GENERAL CONDITIONS OF CONTRACT – GOVERNMENT PROCUREMENT



9. GENERAL CONDITIONS OF TENDER

1. Sealed tenders, with the “**Tender Number and Title**” clearly endorsed on the envelope, must be deposited in the **tender box** at the offices of the Stellenbosch Municipality, Plein Street, Stellenbosch.
2. The tender must be lodged by the Tenderer in the tender box in the Main Hall Entrance, Stellenbosch Municipal Offices, Plein Street, Stellenbosch

PLEASE NOTE:

- 2.1. Tenders that are deposited in the incorrect box will not be considered.
 - 2.2. Mailed, telegraphic or faxed tenders will not be accepted.
 - 2.3. Documents may only be completed in non-erasable ink.
 - 2.4. The use of correction fluid/tape is not allowed.
 - 2.4.1. In the event of a mistake having been made, it shall be crossed out in ink and be accompanied by an initial at each and every alteration.
 - 2.4.2. Alterations or deletions not signed by the Tenderer may render the tender invalid.
 - 2.5. All bids must be submitted in writing on the official forms supplied (not to be re-typed)
 - 2.6. All prices shall be quoted in South African currency and be **INCLUSIVE of VAT**.
- 3. Where the value of an intended contract (or company turnover) will exceed R1 000 000, 00 (R1 million) it is the bidder's responsibility to be registered with the South African Revenue Service (SARS) for VAT purposes in order to be able to issue tax invoices. The municipality will deem the price above R 1 000 000,00 (R1 million) to be VAT inclusive even if it is indicated that no VAT is charged. Please ensure that provision is made for VAT in these instances. The TOTAL price tendered will remain fixed.**
- 3.1 It is a requirement of this contract that the amount of value-added tax (VAT) must be shown clearly on each invoice.
 - 3.2 The amended Value-Added Tax Act requires that a Tax Invoice for supplies in excess of R3 000 should, in addition to the other required information, also disclose the VAT registration number of the recipient, with effect from 1 March 2005. The VAT registration number of the Stellenbosch Municipality is **4700102181**.
- 3 Any Tender received after the appointed time for the closing of Tenders shall not be considered but shall be filed unopened with the other Tenders received or may be returned to the Tenderer at his request.
 - 4 Tenders may not be telefaxed to the Municipality and therefore any tenders received by fax will **not** be considered.
 - 5 Tenders shall be opened in public at the Stellenbosch Municipal Offices as soon as possible after the closing time for the receipt of tenders.
 - 6 The Municipality shall have the right to summarily disqualify any Tenderer who, either at the date of submission of this tender or at the date of its award, is indebted to the Municipality in respect of any rental, levies, rates and/or service charges.
 - 6.1 That an agreement be signed whereby the Tenderer agrees that a percentage or fixed amount at the discretion of the Municipality, be deducted from payments due to him for this tender, until the debt is paid in full.
 - 6.2 The tenderer shall declare **all** the Municipal account numbers in the Stellenbosch Area for which the enterprise or the proprietors or directors in their personal capacity is/ are responsible or co-responsible.



7. Negotiations for a fair market related price

7.1 The award of the tender may be subject to price negotiation with the preferred tenderers.

8 This bid will be evaluated and adjudicated according to the following criteria:

- 8.1 Relevant specifications
- 8.2 Value for money
- 8.3 Capability to execute the contract
- 8.4 PPPFA & associated regulations

9 Service Level Agreement

The award of the tender is subject to the signing of a Service Level Agreement (SLA) between the successful bidder and Stellenbosch Municipality.

10 Inclusion as a standard clause in the tender specification documents where any asset is constructed (delete which ever is not applicable)

On practical completion date, a report or certificate should be issued indicating the total costs of the project attributable to each significant component as identified within the lowest asset hierarchy level (4) as specified within the infrastructure catalogue or Annexure A of the Stellenbosch Municipality's asset management policy as approved in 2014, if not contained in the catalogue.

Where a tender runs over more than one financial year (therefore not concluded by 30 June of a year) the following provision must be included in the consultant's project management agreement – it therefore forms part of the consultant's responsibilities:

Inclusion in contract with consultants

If construction is still in progress over the year-end period of the Stellenbosch Municipality, being 30 June of each year, the Municipality should be furnished with a report / certificate at year-end (30 June), which details (a) The cumulative expenditure incurred up to 30 June for the project. (b) any details if the project is taking a significant longer period of time to complete than expected, including reasons for any delays. (c) details where construction or development has been halted either during the current or previous reporting period(s), including reasons for halting the construction or development of the asset/project.

11 Centralised Supplier Database

No Bids will be awarded to a bidder who is not registered on the Centralised Supplier Database (CSD).

The CSD supplier number starting with (MAAA) number is automatically generated by the Central Database System after successful registration and validation of a prospective service provider. This number is now a mandatory requirement, as referred to in regulation 14(1) (b) of the Municipal Supply Chain Management Regulations, as part of the listing criteria for accrediting a prospective service provider. Prospective suppliers should self – register on the CSD website at www.csd.gov.za Registration on the CSD will be compulsory in order to conduct business with the STELLENBOSCH MUNICIPALITY. Assistance with CSD Registration can be provided by contacting 021 808 8594 or Nicolene.Hamilton@stellenbosch.gov.za

Centralised Supplier Database No. MAAA.....



10. SPECIAL CONDITIONS OF CONTRACT

10.1. Settlement of Disputes:

Should the parties fail to resolve any dispute by way of mutual consultation, either party shall be entitled to refer the matter for mediation. Such referral shall be done by either party giving written notice to the other of its intention to commence with mediation. No mediation may be commenced unless such notice is given to the other party.

Irrespective whether the mediation resolves the dispute, the parties shall bear their own costs concerning the mediation and share the costs of the mediator and related costs equally.

Where the parties reach settlement of the dispute or any part thereof, the mediator shall record such agreement and on signing thereof by the parties the agreement shall be final and binding.

Save for reference to any portion of any settlement or decision which has been agreed to be final and binding on the parties, no reference shall be made by or on behalf of either party in any subsequent court proceedings, to any outcome of an amicable settlement by mutual consultation, or the fact that any particular evidence was given, or to any submission, statement or admission made in the course of amicable settlement by mutual consultation or mediation.

If the parties cannot reach an agreement, the Mediator must refer the matter to Arbitration.

10.2. Arbitration

Arbitrator will be appointed by mutual agreement as per the provisions of the Arbitration Act of 1965 as amended, nominated from the Association of Arbitrators (Southern Africa).

The Arbitrator must be a legal practitioner with more than 10 years legal experience. Must have a good knowledge of the Municipal Finance Management Act and other relevant Municipal Legislation, and may in addition be qualified in respect of the main nature of the Contract (Engineer, Quantity Surveyor, Accountant, etc.).

The Arbitrator shall hear arguments both in writing and oral representations and parties shall have the right to contend the position of the other party and shall have the right to defend its own position.

The ruling of the Arbitrator shall be executed, but the matter may thereafter be defended in court if parties still do not agree.

10.3. Compulsory Qualifications & Experience

The bidder shall comply with the requirements set out by Stellenbosch Municipality as per below, concerning specific qualifications and experience relevant to designees assigned to a certain responsibility and position with the winning bidder's company. The qualifications, designations and experience shall be submitted with the tender documentation, and shall form part of the evaluation process, wherein



bidders not complying with the relevant information may be seen as non-responsive, and disqualified from the bid.

Role	Contracts Director	Project Manager	Site Agent	General Foreman	Site Clerk	Cherry Picker Operator (MEWP Operator)	Truck Driver (Heavy Duty Vehicle)
Tertiary Qualifications	Bachelor's degree in Quantity Surveying, Construction Management, Civil Engineering, or Law. Professional registration (e.g., Pr. CPM, Pr. QS) is highly advantageous.	Bachelor's degree or National Diploma in Engineering (Electrical/Civil) or Project Management. PMP, PRINCE2, or SACPCMP registration (e.g., Pr. CPM) is essential.	National Diploma or Bachelor's degree in Construction Management, Civil Engineering, or Electrical Engineering. SACPCMP registration (e.g., Pr. CM) is highly regarded.	Relevant Trade Certificate (e.g., Electrician) or NQF Level 4/5 in Construction Supervision. Health and safety training.	National Senior Certificate (Matric). A National Certificate or Diploma in Office Administration or a related field is preferred.	Valid and accredited MEWP Operator Certificate. Valid Code B/C1 driver's license. Working at heights training.	Valid South African Code 10 (EC1) or Code 14 (EC) driver's license with a Professional Driving Permit (PrDP). Crane operator certificate if applicable.
Experience	Minimum of 10-15 years in senior-level contract and commercial management within the construction/infrastructure sector. Extensive experience with FIDIC, NEC, JBCC, or GCC contracts.	Minimum of 5-10 years managing electrical infrastructure projects. Experience in managing teams, budgets, schedules, and client relationships.	Minimum of 5-8 years in site supervision and management of electrical or civil construction projects. Strong knowledge of OHS Act and Construction Regulations.	Minimum of 8-10 years in the construction industry, with at least 3-5 years in a supervisory role. Hands-on experience leading teams and interpreting technical drawings.	Minimum of 2-3 years in an administrative role, preferably on a construction site. Experience with document control and record keeping.	Minimum of 3-5 years operating MEWPs in construction environments. Experience with pre-operational checks and safe operation procedures.	Minimum of 5 years as a heavy-duty truck driver, preferably in the construction or logistics sector. Clean driving record and knowledge of local road regulations.
Essential Requirements (3 Years Relevant Experience)	Essential: At least 3 years of direct experience in negotiating and managing high-value infrastructure contracts (e.g., >R50m) using NEC or FIDIC forms within a South African municipal context.	Essential: At least 3 years of demonstrable experience as the lead Project Manager on municipal streetlighting or public lighting installation projects, managing the project from inception to final handover.	Essential: At least 3 years of experience as a Site Agent on projects involving trenching, cable laying, and pole installation for streetlighting or similar electrical reticulation systems.	Essential: At least 3 years of supervisory experience directly overseeing and coordinating daily site activities for teams involved in streetlighting installation, including civil and electrical works.	Essential: At least 3 years of continuous site-based administrative experience, managing safety files, daily site diaries, and procurement records for a construction project.	Essential: At least 3 years of documented experience operating a cherry picker specifically for the installation or maintenance of overhead electrical infrastructure, such as streetlights or LV/MV lines.	Essential: At least 3 years of experience operating a heavy-duty truck (Code 10/14) for transporting construction materials (e.g., poles, cables, concrete) and equipment in a project environment.



10.4. Retention

- a. A retention of ten percent (10%) shall be deducted from the amount of each payment certificate until the total amount retained reaches a limit of ten percent (10%) of the final Contract Value (It has to be noted, that the final contract value includes expenses incurred from rate only items and variations approved by the engineer and client, and that the basis / final contract value from which the 10% retention fee is derived, includes these costs)
- b. Upon the issuing of the Certificate of Completion for the entire works, one half (5%) of the total retention money shall be paid to the Contractor.
- c. The remaining half (5%) of the retention money shall be managed and paid by the Client, to the Contractor twelve (12) months after the date of Completion, upon the issuing of the Final Certificate, provided that all defects identified during the defects liability period of the said 12 months, have been rectified to the satisfaction of the Client
- d. Should the appointed contractor defer from completing any defects within the 12 month period (365 calendar days after the Certificate of Completion have been agreed upon, and signed by the Engineer, Client and Contractor) described in paragraph c, the client shall have the right to retain the remaining 5% retention fee, and appoint an alternative contractor, in compliance with the original contract requirements pertaining to capacity, capability, experience and qualifications to correct any defects.
- e. It also has to be noted, that the appointed contractor shall not, and cannot claim for any works, materials, labour, or any other expense rendered under the tender contract, after the agreed and signed Certificate of Completion Date.

10.5. Remeasurable Contract Conditions

- a. As specified in Section 20.1.4, the quantities provided in the Pricing Schedule (BOQ) are estimates for tendering and evaluation purposes only. This Contract shall operate on a re-measurable basis.
- b. The final Contract Price will be determined by applying the accepted unit rates to the actual measured quantities of work satisfactorily executed and materials supplied on site, with the newly established as built drawings, and scope, as certified by the Engineer and Employer. The Employer reserves the right to vary the quantities of work during the contract period, and payment will be made strictly for the actual, verified quantities of work performed and approved.



10.6. **EEDSM**

Stellenbosch Municipality have applied for, and received funding in the order of R 5 000 000.00 (Five Million Rands VAT Included Sum Total) from the Department of Mineral Resources and Energy to reduce Demand Side Energy Consumption.

The funding includes percentages to be used for the following:

- Project Management & Administration, to be completed by graduates (4 max) for the duration of the project
- Establishment of Baseline & Business Plan, to make use of specialised energy management services
- Capacity Building and Training, wherein the client's employees will partake for upskilling
- Energy Efficiency Awareness, in the form of a competition to schools in the immediate municipal district, with a prize to the winning school.

Furthermore, it must be noted, that the BOQ includes for a disposal allowance, and that the winning bidder is to manage disposal quantities, type and description of each luminaire per street, in order for the client to claim the EEDSM funding.

It is therefor the responsibility of the winning bidder, at no additional costs outside the scope of this contract, to provide the client with the mentioned details per luminaire per street for disposal, including the disposal, and clear record per street of newly installed luminaire type, wattage and quantities.

Failure to do so will result in the employ of external resources, at the cost of the winning bidder by means of utilising retention fees.



11. MBD 4 – DECLARATION OF INTEREST

1. No bid will be accepted from persons in the service of the state¹.
2. Any person, having a kinship with persons in the service of the state, including a blood relationship, may make an offer or offers in terms of this invitation to bid. In view of possible allegations of favouritism, should the resulting bid, or part thereof, be awarded to persons connected with or related to persons in service of the state, it is required that the bidder or their authorised representative declare their position in relation to the evaluating/adjudicating authority and/or take an oath declaring his/her interest.
3. In order to give effect to the above, the following questionnaire must be completed and submitted with the bid:

3.1.	Full Name of bidder or his or her representative										
3.2.	Identity Number										
3.3.	Position occupied in the Company (director, shareholder ² etc.)										
3.4.	Company Registration Number										
3.5.	Tax Reference Number										
3.6.	VAT Registration Number										

3.7.	Are you presently in the service of the state?	YES		NO	
3.7.1.	If so, furnish particulars:				

3.8.	Have you been in the service of the state for the past twelve months?	YES		NO	
3.8.1.	If so, furnish particulars:				

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

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

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



3.9.	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	
3.9.1.	If so, furnish particulars:				
3.10.	Are you aware of any relationship (family, friend, other) between a bidder and any persons in the service of the state who may be involved with the evaluation and or adjudication of this bid?	YES		NO	
3.10.1.	If so, furnish particulars:				
3.11.	Are any of the company's directors, managers, principal shareholders or stakeholders in the service of the state?	YES		NO	
3.11.1.	If so, furnish particulars:				
3.12.	Is any spouse, child or parent of the company's directors, managers, principal shareholders or stakeholders in the service of the state?	YES		NO	
3.12.1.	If so, furnish particulars:				
3.13.	Do you or any of the directors, trustees, managers, principal 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	
3.13.1.	If so, furnish particulars:				



3.14.	Please provide the following information on ALL directors/shareholders/trustees/members below:		
Full Name and Surname	Identity Number	Personal Income Tax Number	Provide State ³ Employee Number

NB: a) PLEASE ATTACH CERTIFIED COPY(IES) OF ID DOCUMENT(S) b) PLEASE PROVIDE PERSONAL INCOME TAX NUMBERS FOR ALL DIRECTORS / SHAREHOLDERS / TRUSTEES / MEMBERS, ETC.

4. DECLARATION

I, the undersigned (name) _____, certify that the information furnished in paragraph 3 above is correct.

I accept that the state may act against me should this declaration prove to be false.

SIGNATURE		DATE	
NAME OF SIGNATORY			
POSITION			
NAME OF COMPANY			

³ MSCM Regulations: "in the service of the state" means to be –

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



12. MBD5 – DECLARATION FOR PROCUREMENT ABOVE R10 MILLION (VAT INCLUDED)

For all procurement expected to exceed R10 million (VAT 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				
2. Do you have any outstanding undisputed commitments for municipal services towards a municipality 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 towards a municipality 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, furnish particulars				
4. Will any portion of goods or services be sourced from outside the Republic, and, if so, what portion and whether any portion of payment from the municipality / municipal entity is expected to be transferred out of the Republic?	YES		NO	
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		
NAME (PRINT)				
CAPACITY				
NAME OF FIRM				



13. MBD6.1 – PREFERENCE POINTS CLAIM FORM IN TERMS OF THE PREFERENTIAL PROCUREMENT REGULATIONS 2022 – PURCHASES/SERVICES 80/20

NB:

Before completing this form, bidders must study the general conditions, definitions and directives applicable in respect of B-BBEE, as prescribed in the Preferential Procurement Regulations, 16 January 2023 and the Stellenbosch Preferential Procurement Policy 2025/2026

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

1. GENERAL CONDITIONS

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

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

1.2

- a a) The value of this bid is estimated to not exceed R50 000 000 per financial year (all applicable taxes included) and therefore the 80/20 preference point system shall be applicable.

1.3 Points for this bid shall be awarded for:

- (a) Price;
- (b) B-BBEE Status Level of Contributor. and
- (c) Locality of supplier

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

	POINTS
PRICE	80
B-BBEE STATUS LEVEL OF CONTRIBUTOR	10
LOCALITY (See definitions)	10
Total points for Price, BBEE and Locality (must not exceed 100)	100

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

1.6 Failure on the part of a bidder to submit proof of Locality together with the bid, will be interpreted to mean that preference points for Locality are not claimed.

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



required by the purchaser.

2. DEFINITIONS

- (a) **“B-BBEE”** means broad-based black economic empowerment as defined in section 1 of the Broad-Based Black Economic Empowerment Act;
- (b) **“B-BBEE status level of contributor”** means the B-BBEE status of an entity in terms of a code of good practice on black economic empowerment, issued in terms of section 9(1) of the Broad-Based Black Economic Empowerment Act;
- (c) **“bid”** means a written offer in a prescribed or stipulated form in response to an invitation by an organ of state for the provision of goods or services, through price quotations, advertised competitive bidding processes or proposals;
- (d) **“Broad-Based Black Economic Empowerment Act”** means the Broad-Based Black Economic Empowerment Act, 2003 (Act No. 53 of 2003);
- (e) **“EME”** means an Exempted Micro Enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;
- (f) **“functionality”** means the ability of a tenderer to provide goods or services in accordance with specifications as set out in the tender documents.
- (g) **“Locality”** means the local suppliers and/or service providers that business offices are within the Municipal area of Stellenbosch (WC024).
- (h) **“price”** includes all applicable taxes less all unconditional discounts;
- (i) **“proof of B-BBEE status level of contributor”** means:
 - 1) B-BBEE Status level certificate issued by an authorized body or person;
 - 2) A sworn affidavit as prescribed by the B-BBEE Codes of Good Practice;
 - 3) Any other requirement prescribed in terms of the B-BBEE Act;
- (j) **“QSE”** means a qualifying small business enterprise in terms of a code of good practice on black economic empowerment issued in terms of section 9 (1) of the Broad-Based Black Economic Empowerment Act;
- (k) **“Specific goals”** means specific goals as contemplated in section 2(1)(d) of the Act which may include contracting with persons, or categories of persons, historically disadvantaged by unfair discrimination on the basis of race, gender and disability including the implementation of programmes of the Reconstruction and Development Programme as published in Government Gazette No. 16085 dated 23 November 1994;
- (l) **“rand value”** means the total estimated value of a contract in Rand, calculated at the time of bid invitation, and includes all applicable taxes;



3. FORMULAE FOR PROCUREMENT OF GOODS AND SERVICES

4. POINTS AWARDED FOR PRICE

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

A maximum of 90 points is allocated for price on the following basis:
90/10

$$Ps = 90 \left(1 - \frac{Pt - Pmin}{Pmin} \right)$$

Where

Ps = Points scored for price of bid under consideration
Pt = Price of bid under consideration
Pmin = Price of lowest acceptable bid

4.2 FORMULAE FOR DISPOSAL OR LEASING OF STATE ASSETS AND INCOME-GENERATING PROCUREMENT

4.3 POINTS AWARDED FOR PRICE

A maximum of 90 points is allocated for price on the following basis:
90/10

$$Ps = 90 \left(1 + \frac{Pt - Pmax}{Pmax} \right)$$

Where

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

5. POINTS AWARDED FOR B-BBEE STATUS LEVEL OF CONTRIBUTOR

5.1 In terms of Regulation 4 (2) and 5 (2) of the Preferential Procurement Regulations, preference points must be awarded to a bidder for attaining a specific goal specified for the tender

5.2 The tendering conditions will stipulate the specific goals, as contemplated in section 2(1)(d)(ii) of the Preferential Procurement Act, be attained.

5.3 A maximum of 10 (90/10) preference points system, must be allocated for specific goals. These goals are :

(a) contracting with persons, or categories of persons, historically disadvantaged by unfair discrimination on the basis of race, gender or disability;

(b) Promotion of enterprises located in the municipal area (WCO24)



- 5.4 Regarding par 5.3 (a) at least 50% of the 10 points must be allocated to promote this goal and points will be allocated in terms of the BBBEE scorecard as follows.

B-BBEE Status Level of Contributor	Number of Points for 90/10 Preference Points System
1	10
2	9
3	8
4	5
5	4
6	3
7	2
8	1
Non-compliant contributor	0

- 5.5 A tenderer must submit proof of its BBBEE status level contributor.
- 5.6 A tenderer failing to submit proof of BBBEE status level of contributor –
- 5.6.1 may only score in terms of the 90-point formula for price; and
- 5.6.2 scores 0 points out of 10/5 BBBEE status level of contributor, which is in line with section 2 (1) (d) (i) of the Act, where the supplier or service provider did not provide proof thereof.
- 5.7 Regarding par 5.3 (b) a maximum of 50% of the 10 points must be allocated to promote this goal. Maximum points will be allocated as follows.

Locality of supplier	Number of Points for 80/10 Preference Points System
Within the boundaries of the municipality	10
Outside of the boundaries of the municipality	0



6. BID DECLARATION

6.1 Bidders who claim points in respect of B-BBEE Status Level of Contribution and/or Locality must complete the following:

7. B-BBEE STATUS LEVEL OF CONTRIBUTOR CLAIMED IN TERMS OF PARAGRAPHS 1.4 AND 4.1

7.1 B-BBEE Status Level of Contributor: . =(maximum of 10 points)

(Points claimed in respect of paragraph 7.1 must be substantiated by relevant proof of B-BBEE status level of contributor.)

7.2 Within the boundaries of Stellenbosch Municipality (WC024)?

YES	☐	NO	☐
-----	--------------------------	----	--------------------------

Business Address -

(Points claimed in respect of paragraph 7.2 must be substantiated by relevant proof that the business premises is situated in the Municipal area of Stellenbosch (WC024). A valid municipal account or proof of valid lease agreement, or sworn affidavit must be attached)

8. SUB-CONTRACTING

8.1 Will any portion of the contract be sub-contracted?

(**Tick applicable box**)

YES	☐	NO	☐
-----	--------------------------	----	--------------------------

8.1.1 If yes, indicate:

- i) What percentage of the contract will be subcontracted.....%
- ii) The name of the sub-contractor.....
- iii) The B-BBEE status level of the sub-contractor.....
- iv) Whether the sub-contractor is an EME or QSE

(**Tick applicable box**)

YES	☐	NO	☐
-----	--------------------------	----	--------------------------

v) Specify, by ticking the appropriate box, if subcontracting with an enterprise

Designated Group: An EME or QSE which is at last 51% owned by:	EME √	QSE √
Black people		
Black people who are youth		
Black people who are women		
Black people with disabilities		
Black people living in rural or underdeveloped areas or townships		
Cooperative owned by black people		



Black people who are military veterans		
OR		
Any EME		
Any QSE		

9. DECLARATION WITH REGARD TO COMPANY/FIRM

9.1 Name of company/firm:.....

9.2 VAT registration number:.....

9.3 Company registration number:.....

9.4 TYPE OF COMPANY/ FIRM

☐ Partnership/Joint Venture / Consortium

☐ One person business/sole propriety

☐ Close corporation

☐ Company

☐ (Pty) Limited

[TICK APPLICABLE BOX]

9.5 DESCRIBE PRINCIPAL BUSINESS ACTIVITIES

.....

9.6 COMPANY CLASSIFICATION

☐ Manufacturer

☐ Supplier

☐ Professional service provider

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

[TICK APPLICABLE BOX]

9.7 MUNICIPAL INFORMATION

Municipality where business is situated:

Registered Account Number:

Stand Number:.....

9.8 Total number of years the company/firm has been in business:.....

9.9 I/we, the undersigned, who is / are duly authorised to do so on behalf of the company/firm, certify that the points claimed, based on the B-BBE status level of contributor indicated in paragraphs 1.4 and 6.1 of the foregoing certificate, qualifies the company/ firm for the preference(s) shown and I / we 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 1.4 and 6.1, the contractor may be required to furnish documentary proof to the satisfaction of the purchaser that the claims are correct;
- iv) If the B-BBEE status level of contributor/Locality points has been claimed or obtained on a fraudulent basis or any of the conditions of contract have not been fulfilled, the purchaser may, in addition to any other remedy it may have –
 - (a) disqualify the person from the bidding 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 bidder or contractor, its shareholders and directors, or only the shareholders and directors who acted on a fraudulent basis, be restricted by the National Treasury 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.

SIGNATURE OF BIDDER(S):			
WITNESS 1:		WITNESS 2:	
DATE:			
ADDRESS:			



PLEASE COMPLETE IN FULL YOUR OWN AFFIDAVIT TO CLAIM POINTS

SWORN AFFIDAVIT – B-BBEE EXEMPTED MICRO ENTERPRISE – GENERAL (DRAFT EXAMPLE)
(DO NOT USE. USE NEW/APPLICABLE TEMPLATE)

I, the undersigned,

Full name & 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 (Select one)** of the following enterprise and am duly authorised to act on its behalf: **NB!**

Enterprise Name:	
Trading Name (If Applicable):	
Registration Number:	
Vat Number (If applicable)	
Enterprise Physical Address:	
Type of Entity (CC, (Pty) Ltd, Sole Prop etc.):	
Nature of Business:	
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 – (a) who are citizens of the Republic of South Africa by birth or descent; or (b) who became citizens of the Republic of South Africa by naturalisation- i. before 27 April 1994; or ii. on or after 27 April 1994 and who would have been entitled to acquire citizenship by naturalization prior to that date;"



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

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:

- The Enterprise is _____ % Black Owned using the flow-through principle 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 Female Owned 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 Designated Group Owned 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,
- Black Designated Group Owned % Breakdown as per the definition stated above:
 - Black Youth % = _____ %
 - Black Disabled % = _____ %
 - Black Unemployed % = _____ %
 - Black People living in Rural areas % = _____ %
 - Black Military Veterans % = _____ %
- Based on the Audited Financial Statements/Financial Statements and other information available on the latest financial year-end of _____ (DD/MM/YYYY), the a **NB!** Revenue was R10,000,000.00 (Ten Million Rands) or less
- Please Confirm on the below table the B-BBEE Level Contributor, **by ticking the applicable box.**

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

4. 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.

5. The sworn affidavit will be valid for a period of 12 months from the date signed by commissioner.

Deponent Signature: _____

Date : _____

NB! ORIGINALLY CERTIFIED/ NOT COPY

Commissioner of Oaths

Signature & stamp

Date:

14. MBD 8 – 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 ten years;
 - 3.3. willfully neglected, reneged on or failed to comply with any government, municipal or other public sector contract during the past ten 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.

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? <i>(Companies or persons who are listed on this database were informed in writing of this restriction by the National Treasury after the audi alteram partem rule was applied).</i>	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)? <i>(To access this Register enter the National Treasury's website, www.treasury.gov.za, click on the icon "Register for Tender Defaulters" or submit your written request for a hard copy of the Register to facsimile number (012) 3265445).</i>	Yes	No
4.2.1	If so, furnish particulars:		
4.3	Was the bidder or any of its directors convicted by a court of law (including a court of law outside the Republic of South Africa) for fraud or corruption during the past ten years?	Yes	No



4.3.1	If so, furnish particulars:		
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 ten years on account of failure to perform on or comply with the contract?	Yes	No
4.5.1	If so, furnish particulars:		

5. CERTIFICATION

I, the undersigned (full name), _____, certify that the information furnished on this declaration form 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:		NAME (PRINT):	
CAPACITY:		DATE:	
NAME OF FIRM:			



15. MBD 9 – CERTIFICATE OF INDEPENDENT BID DETERMINATION

1. This Municipal Bidding Document (MBD) must form part of all bids 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).⁴ Collusive bidding is a *per 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 (MBD 9) must be completed and submitted with the bid:

CERTIFICATE OF INDEPENDENT BID DETERMINATION:

In response to the invitation for the bid made by:

STELLENBOSCH MUNICIPALITY

I, the undersigned, in submitting the accompanying bid, hereby make the following statements that I certify to be true and complete in every respect:

1. I have read and I understand the contents of this Certificate;
2. I understand that the accompanying bid will be disqualified if this Certificate is found not to be true and complete in every respect;
3. I am authorized by the bidder to sign this Certificate, and to submit the accompanying bid, on behalf of the bidder;
4. 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;
5. 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:

⁴ 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.



- 5.1. has been requested to submit a bid in response to this bid invitation;
 - 5.2. could potentially submit a bid in response to this bid invitation, based on their qualifications, abilities or experience; and
 - 5.3. provides the same goods and services as the bidder and/or is in the same line of business as the bidder
6. 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 consortium⁵ will not be construed as collusive bidding.
 7. In particular, without limiting the generality of paragraphs 6 above, there has been no consultation, communication, agreement or arrangement with any competitor regarding:
 - 7.1. prices;
 - 7.2. geographical area where product or service will be rendered (market allocation)
 - 7.3. methods, factors or formulas used to calculate prices;
 - 7.4. the intention or decision to submit or not to submit, a bid;
 - 7.5. the submission of a bid which does not meet the specifications and conditions of the bid; or
 - 7.6. bidding with the intention not to win the bid.
 8. 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.
 9. 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.
 10. 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:		NAME (PRINT):	
CAPACITY:		DATE:	
NAME OF FIRM:			

⁵ 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.



16. MBD 10 – CERTIFICATE FOR PAYMENT OF MUNICIPAL SERVICES

DECLARATION IN TERMS OF CLAUSE 112(1) OF THE MUNICIPAL FINANCE MANAGEMENT ACT (NO.56 OF 2003)

I, _____, _____ (full name and ID no.), hereby acknowledge that according to SCM Regulation 38(1)(d)(i), the Municipality may reject the tender of the tenderer if any municipal rates and taxes or municipal service charges owed by the Tenderer or any of its directors/members/partners to the Stellenbosch Municipality, or to any other municipality or municipal entity, are in arrears for more than 3 (three) months.

I declare that I am duly authorised to act on behalf of _____ (name of the firm) and hereby declare, that to the best of my personal knowledge, neither the firm nor any director/member/partner of said firm is in arrears on any of its municipal accounts with any municipality in the Republic of South Africa, for a period longer than 3 (three) months.

I further hereby certify that the information set out in this schedule and/or attachment(s) hereto is true and correct. The Tenderer acknowledges that failure to properly and truthfully complete this schedule may result in the tender being disqualified, and/or in the event that the tenderer is successful, the cancellation of the contract.

PHYSICAL BUSINESS ADDRESS(ES) OF THE TENDERER	MUNICIPAL ACCOUNT NUMBER

FURTHER DETAILS OF THE BIDDER'S Director / Shareholder / Partners, etc.:

Director / Shareholder / partner	Physical address of the Business	Municipal Account number(s)	Physical residential address of the Director / shareholder / partner	Municipal Account number(s)

NB: Please attach certified copy (ies) of ID document(s) and Municipal Accounts If the entity or any of its Directors/Shareholders/Partners, etc. rents/leases premises, a copy of the rental/lease agreement or sworn affidavit must be submitted with this tender.

- PLEASE SUBMIT MUNICIPAL ACCOUNTS FOR THE FOLLOWING TWO MONTHS AFTER BID CLOSURE TO THE RELEVANT SCM PRACTITIONER SHOULD THE BID NOT BE AWARDED YET.

Signature	Position	Date



17. COMPENSATION FOR OCCUPATIONAL INJURIES AND DISEASES ACT, 1993 (ACT 130 OF 1993)

COMPENSATION FOR OCCUPATIONAL INJURIES AND DISEASES ACT, 1993 (ACT 130 OF 1993)

Stellenbosch Municipality has legal duty in terms of Section 89 of the said Act to ensure that all contractors with whom agreements are entered into for the execution of work are registered as employers in accordance with the provisions of this Act and that all the necessary assessments have been paid by the contractor.

In order to enter into this agreement, the following information is needed regarding the above-mentioned:

Contractor's registration number with the office of the Compensation Commissioner:

NOTE:

A copy of the latest receipt together with a copy of the relevant assessment OR a copy of a valid Letter of Good Standing must be handed in, in this regard.

PRINT NAME:			
CAPACITY:		Name of firm	
SIGNATURE:		DATE:	



18. FORM OF INDEMNITY

INDEMNITY

Given by (Name of Company) _____
of (registered address of Company) _____
a company incorporated with limited liability according to the Company Laws of the Republic of South Africa (hereinafter called the Contractor), represented herein by (Name of Representative) _____
_____ in his capacity as (Designation) _____
of the Contractor, is duly authorised hereto by a resolution dated _____ /20____,
to sign on behalf of the Contractor.

WHEREAS the Contractor has entered into a Contract dated _____ / 20____,
with the Municipality who require this indemnity from the Contractor.

NOW THEREFORE THIS DEED WITNESSES that the Contractor does hereby indemnify and hold harmless the Municipality in respect of all loss or damage that may be incurred or sustained by the Municipality by reason of or in any way arising out of or caused by operations that may be carried out by the Contractor in connection with the aforementioned contract; and also in respect of all claims that may be made against the Municipality in consequence of such operations, by reason of or in any way arising out of any accidents or damage to life or property or any other cause whatsoever; and also in respect of all legal or other expenses that may be incurred by the Municipality in examining, resisting or settling any such claims; for the due performance of which the Contractor binds itself according to law.

SIGNATURE OF CONTRACTOR:	
DATE:	
SIGNATURE OF WITNESS 1:	
DATE:	
SIGNATURE OF WITNESS 2:	
DATE:	



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

PART B – SPECIFICATIONS AND PRICING SCHEDULE



19. SPECIFICATIONS

20.1 GENERAL

Nominal Operating Voltage	400/230V
Maximum Temperature	40°C
Altitude	86m
Lightning Conditions	0.3 Ng

- 20.1.1** I / We the undersigned, hereby acknowledge myself / ourselves fully conversant with the details and conditions as set out in the Specification and with the Conditions of Tendering and General Conditions of Purchase and Conditions of Tender attached hereto and hereby agree to supply and deliver material for a period of 3 years ending 30 June 2028 in accordance therewith.
- 20.1.2** Bidders must submit at least three original reference letters written and signed previous clients for each item(s) tendering for as confirmation that they have supplied such material in the previous 10 years, where the bidder has successfully completed the endorsed projects. Failure to attach such reference letters will lead to the disqualification of the bid.
- 20.1.3** Prices shall be fixed for the 3-year contract, which will carry over into the new Municipal financial year after 30 June 2026 and 30 June 2027. The bidder shall offer prices in this bid that will be valid and fixed as of the commencement date of this contract for the full 3-year period. The successful bidder will under these circumstances be forced to accept these conditions as part of this contract commitment.
- 20.1.4** The estimated quantities indicated in the pricing schedule are only for evaluation purposes. The municipality can order more or less than the estimated quantities and therefore such estimated quantities are not binding on the municipality to order such quantities.
- 20.1.5** All other supporting documentation must be attached to the bidder's offer and tender document.
- 20.1.6** This tender document must not be dismembered (do not take it apart or put documents between its pages). The tender document and all relevant specifications and attachments thereto must be bound together in a suitable binder.
- 20.1.7** The Tenders shall include the cost of all arrangements necessary for the actual delivery of the goods to site and **include VAT** in the prices quoted.
- 20.1.8** All goods to be supplied delivered and off-loaded to (unless specified otherwise for specific items):
- Contractor Site Office, and/or;
 - The area of installation required
 - Moved from the Contractor Site Office to the area of installation.
- 20.1.9** Products offered shall only be newly manufactured. No second hand or refurbished items will be accepted.
- 20.1.10** The bidder must be able to present and demonstrate the features of his/her offer during the evaluation stage of the tender if requested by the Municipality of Stellenbosch.
- 20.1.11** Each bidder shall issue data sheets/technical information and applicable pole drawings, of which all items shall conform to the Stellenbosch Municipality Specifications, for all the items offered as supporting documentation to his/her offer. Failure to do so may render the tender submission non conformant within the adjudication process, meaning that a bid shall be considered to be unresponsive.



20.2 SCOPE

General

The scope of this document addresses the installation of streetlighting within surrounding villages, provincial roads and traffic light intersections within the Stellenbosch Municipal area.

Note: It is a requirement by the Department of Energy and Electricity, who manages the EEDSM grant, that the following points as detailed below must be implemented.

This tender comprise of Streetlight Luminaire replacements within various locations, funded by the Department of Mineral Resources and Energy (DMRE) with an Energy Efficiency Demand Side Management (EEDSM) grant.

It shall be the responsibility of the winning bidder, as follows:

- Utilise funding and invoice the client for the EEDSM grant strategies under BOQ portion "Special Requirements"
- Employ & manage graduates for the duration of the project
- Training is to be provided to client officials ie Energy Certification
- Energy Awareness Campaign (School Competition)
- Provision of crisher certificates of all luminaires that have been replaced and detailed location, ie. Streetnames where the replacement took place.
- Supply, deliver and install these luminaires, and provide the client with a listed record per street of the quantities, for All, EEDSM and recycled units as follows:

SITE NAME	Jamestown												
SITE MANAGER	John Doe												
		1. STREET TOTAL		2. VERIFICATION		3. CRUSHED		4. EEDSM		5. NON EEDSM		6. ALL NEW	
STREET NAME	DATE	OLD LUMINAIRES REMOVED TOTAL		TOTAL COUNTED BY ENGINEER FOR CRUSHING		CRUSHING CERTIFICATE DETAILS		NEW LUMINAIRES INSTALLED TOTAL		NEW LUMINAIRES INSTALLED TOTAL		NEW LUMINAIRES INSTALLED TOTAL	
		TYPE	QTY	TYPE	QTY	TYPE	QTY	TYPE	QTY	TYPE	QTY	TYPE	QTY
Rose Street	22/01/2026	HPS150W	17	HPS150W	17	HPS150W	17	LED74W	17	LED74W	8	HPS150W	25
Rose Street	23/01/2026	HPS400W	41	HPS400W	41	HPS400W	41	LED276W	41	LED276W	12	HPS400W	53



Existing infrastructure as-built documentation

It is the responsibility of the contractor to take cognisance, that Stellenbosch Municipality does not possess over the necessary as-built documentation (equipment datasheets, material datasheets, layout drawings, diagrams, schematics, lighting simulations, etc.) for the existing infrastructure pertaining to this scope of works, as detailed throughout this document

The reason for the lack of as-built documentation, can be attributed to the fact that the existing infrastructure is legacy infrastructure that was inherited from other previously maintained authorities that was not under the control and/or management of Stellenbosch Municipality.

The Contractor shall allow for attending to all sites, part of this scope, to verify the location, type, quantity of, and capacity of existing electrical kiosks and streetlight infrastructure (streetlight poles/masts, luminaire types, cable lengths, cable sizes, etc.).

Where the as-built documentation (equipment datasheets, material datasheets, layout drawings, diagrams, schematics, etc.) are absent, the Contractor shall assess existing installations on site to determine compatibility with the proposed works and to identify any additional requirements that is to be discussed and approved by the Engineer. The contractor shall take note, that GPS coordinates are not available, due to the fact that as-built information is lacking in this regard from the municipality. Unfortunately, any requests for GPS coordinates, or "XY" coordinates, for any item, equipment and/or portion of the scope of works pertaining to this document shall not be entertained by the Engineer or Client. With this in mind, refer to the section 20.2.23, within this bid document, that discusses the requirements regarding the expectation for the surveyor requirements, within the bid document.

Once the Contractor has completed his assessments of the existing installations on site, as discussed in the previous paragraph, the Contractor shall provide the proposed construction Single Line Diagrams, reflecting the new electrical distribution arrangements based on the site investigation findings, in order to accommodate the loads from the project to the Engineer and client for approval prior to any procurement activities of any and all materials and/or equipment. The onus shall be on the contractor to complete, and coordinate, these processes in a timeous manner as to not delay the project. In relation to these processes the Engineer, and/or Client, shall not be held liable for any delays to the overall project program / schedule proposed by the contractor.

Once the construction and/or remedial works are completed, the Contractor shall prepare accurate as-built documentation (equipment datasheets, material datasheets, layout drawings, diagrams, schematics, etc.) for the works that the contractor has completed under this scope and provide the as-built information in acceptable format (DWG and PDF formats) to the Engineer and Client.



20.2.1 General Scope (6 Villages, 6 Provincial Road Portions and 6 Traffic Light Intersections)

The works shall be completed within a three-year period, ending 30 June 2028, using a phased approach, considering the locations, labor intensity, and project scale. A proposed, and phased, program has been provided (see Table 1 below) as an indication only. Please note that table 1 is merely a proposal for the bidder/tenderer and will require refinement by the successful bidder/tenderer once appointed post bid process. Stellenbosch Municipality, in consultation with the selected bidder, reserves the right to amend the proposed program accordingly to align with internal municipal budget(s) (funding allocation(s)) requirements.

Phase	Area of Streetlighting Installation	Months	Project Timelines in Monthly Increments
1	Village Klappmuts	8	■ ■ ■ ■ ■ ■ ■ ■
1	Traffic Lights Klappmuts	1	■
2	Village Jamestown	6	■ ■ ■ ■ ■ ■
2	Village Raithby	2	■ ■
2	Traffic Lights Annandale	1	■
3	Provincial Road MR 177 km 29.78 to km 32.25	4	■ ■ ■ ■
3	Traffic Lights Vlaeberg	1	■
3	Traffic Lights Lyndoch	1	■
3	Traffic Lights Polkadraai	1	■
4	Provincial Road MR 187 13.00 to km 14.71	2	■ ■
4	Traffic Lights Koelenhof	1	■
5	Village Lanquedoc	6	■ ■ ■ ■ ■ ■
5	Village Kylemore	6	■ ■ ■ ■ ■ ■
5	Provincial Road MR 172 km 10.43 to km 13.34	4	■ ■ ■ ■
5	Provincial Road MR 191 km 19.64 to km 23.71	6	■ ■ ■ ■ ■ ■
5	Provincial Road MR 172 / MR191 km 15.76	1	■

Table 1

General Installation Materials for all 6 Villages (These types are to be included for each Village):

- 25mm² 4 core aluminium wire (underground – depending on the area of installation)
- 25mm² ABC (depending on the area of installation)
- 36W LED Luminaires (depending on the area of installation)
- 76W LED Luminaires (depending on the area of installation)
- Ground- and/or pole mounted poly or steel vandal proof populated kiosks (Fully populated with circuit breakers, contactors, meters, photo sensors)



Installation Materials for Raithby Village:

- 2.5mm² 3 Core silicone cable
- 25mm² x 4-core Alu ABC LV cable
- 8m Wooden streetlight poles
- 12m Wooden streetlight poles
- 6m Concrete streetlight poles
- 8m Galvanised Steel Poles
- 10m Galvanised Steel Poles
- Anti Vandalism Cable protection concrete build up against poles within high vandalism areas indicated by the engineer & client
- 1m 0° Galvanised steel outreach arms for wooden poles
- 1.5m 0° Bent/bowed galvanised steel outreach arms for concrete poles
- 42mm spigots
- 43W Star Shaped Post Top Luminaires
- 103W LED Luminaires

Installation Materials for Jamestown Village:

- 2.5mm² 3 Core silicone cable
- 25mm² x 4-core Alu ABC LV cable
- 8m Wooden streetlight poles
- 6m Concrete streetlight poles
- 8m Galvanised Steel Poles
- 10m Galvanised Steel Poles
- Anti Vandalism Cable protection concrete build up against poles within high vandalism areas indicated by the engineer & client
- 300mm 0° Galvanised steel outreach arms for wooden poles
- 1m 0° Galvanised steel outreach arms for wooden poles
- 1.5m 0° Bent/bowed galvanised steel outreach arms for concrete poles
- 42mm spigots
- 43W Star Shaped Post Top Luminaires



Installation Materials for Kylemore Village:

- 2.5mm² 3 Core silicone cable
- 25mm² x 4-core Alu ABC LV cable
- 8m Wooden streetlight poles
- 6m Concrete streetlight poles
- 12m Galvanised Steel Poles
- Anti Vandalism Cable protection concrete build up against poles within high vandalism areas indicated by the engineer & client
- 1m 0° Straight Galvanised steel outreach arms for wooden poles
- 42mm spigots
- 43W Star Shaped Post Top Luminaires
- 103W LED Luminaires

Installation Materials for La Motte Village:

- Replacement of Star Shaped Post Top Luminaires with 36W LED
- 36W & 76W LED Luminaires
- Concrete Poles
- 25mm² underground Cable

Installation Materials for Lanquedoc Village:

- 2.5mm² 3 Core silicone cable
- 25mm² x 4-core Alu ABC LV cable
- 8m Wooden streetlight poles
- 8m Galvanised Steel Poles
- Anti Vandalism Cable protection concrete build up against poles within high vandalism areas indicated by the engineer & client
- 300mm 0° Galvanised steel outreach arms for wooden poles
- 1m 0° Galvanised steel outreach arms for wooden poles
- 1.5m 0° Bent/bowed galvanised steel outreach arms for concrete poles
- 42mm spigots
- 43W Star Shaped Post Top Luminaires



Installation Materials for Klapmuts Village:

- 2.5mm² 3 Core silicone cable
- 25mm² x 4-core Alu ABC LV cable
- 8m Wooden streetlight poles
- 6m Concrete streetlight poles
- 8m Galvanised Steel Poles
- 12m Galvanised Steel Poles
- Anti Vandalism Cable protection concrete build up against poles within high vandalism areas indicated by the engineer & client
- 300mm 0° Galvanised steel outreach arms for wooden poles
- 1m 0° Galvanised steel outreach arms for wooden poles
- 42mm spigots
- High Mast Lights

Installation Materials for the Provincial Roads and Traffic Light Intersections:

- 8m Galvanised Steel Poles
- 10m Galvanised Steel Poles
- 12m Galvanised Steel Poles
- 6.5m Wooden Poles
- 8m Wooden Poles
- 10m Wooden Poles
- 12m Wooden Poles
- 6.5m Concrete Poles
- 2.5mm² 3 core silicone cable (from pole base to light in pole core)
- 25mm² 4 core aluminium wire (underground)
- 25mm² 4 core aluminium wire (overhead)
- 300mm, 1m and 1.5m straight or arched luminaire arms
- 42mm spigots
- 36W, 43W, 76W, 103W, 134W and 174W Luminaires (including some heritage type 76W units)
- Ground and pole mounted poly or steel populated kiosks (Circuit breakers, contactors, meters, photo sensors)



20.2.1.1 Introduction

Villages

With the handover of lighting infrastructure in the 6 villages by Eskom to Stellenbosch Municipality in 2022, a risk of electrocution has been identified where the electrical reticulation of both entities is present on a singular pole infrastructure system.

Provincial Roads & Traffic Light Intersections

The maintenance portion of the provincial roads and traffic light intersections have been handed over to Stellenbosch Municipality. In addition, it must be ensured that the specified areas are compliant to the requirements of SANS 10098-1 which in some cases require the installation of additional luminaires and infrastructure

20.2.1.2 Poles

The streetlighting, for which Stellenbosch Municipality is now responsible, must be installed on new pole and network infrastructure to mitigate the risk of electrocution, while providing lighting to the same identified physical areas. In some cases, the function of the existing Eskom poles is solely to provide lighting, in which case the services will not necessarily be transferred to new poles.

In order to install lighting on new poles, the installation must take place on the opposite side of each road section, in order to comply with national standards in some cases, as well as to mitigate risk of electrocution of Maintenance Teams and the Public.

Poles, and cabling on wooden poles, in high vandalism areas are to be protected by means of a 2,4m galvanized kickpipe fixated to the pole.

Existing concrete, galvanized steel and fibre glass poles, with a low cable entry service area of 400mm and lower, and within a high vandalism area, is to be protected with a Powercomm Pole Protection Unit or similar in quality, appeal, functionality and purpose

All pole top mounted kiosks in high vandalism areas shall be installed including a wire mesh mask

The contractor is responsible for all excavation, installation, pole alignment and remedial works post installation, such as compaction, paving and tarring in accordance with applicable standards & codes.



Provincial Roads & Traffic Light Intersections

It must be ensured that the provincial road and traffic intersection lighting, for which Stellenbosch Municipality is now responsible, is compliant.

Within various scenarios, luminaires must either be replaced or added onto new infrastructure. These loads must be measured from a new municipal kiosk with energy meter, including the traffic light loads.

20.2.1.3 Kiosks

Pertaining to Kiosks for Villages, Provincial Roads and Traffic Intersections, the Eskom supply must be rerouted via new Stellenbosch Municipality kiosk point of supplies. The Stellenbosch municipality supply kiosks are to be installed, in order to separately manage, maintain and remotely measure the lighting load, including traffic lights. Where & if installing kiosks in high vandalism areas, a strongbox type kiosk must be installed, compliant to Stellenbosch Municipality Specifications.

20.2.1.4 Reticulation

With the installation of new three phase cable, the lighting load will be sequentially connected so that every 3rd light will be connected on the same phase. The purpose is to provide partial lighting with 2 phases in the event of 1 phase failing/tripping. In some cases, the existing Eskom cable will not be replaced as part of the work, and may be a single phase cable, which will be the only exclusion where the above mentioned will not be practically possible.

All cable lengths in the BOQ are fair estimates; the appointed contractor will have to evaluate the site before ordering any cables.

20.2.1.5 Luminaires

All non-LED lighting is to be replaced with LED lighting. Where LED lighting already exists, it is to be replaced with similar new LED luminaires as per the EEDSM funding obtained, and the old unit quantities recorded and recycled, providing the necessary recycling certificates.

The recorded list of quantities must be signed by the engineer and provided to Stellenbosch Municipality.



20.2.1.6 Earthworks, Boring & Drilling

The contractor is responsible for any remedial works required upon any earthworks, boring and drilling completed, and must submit the tender offer as such. Delivery, transferal & reinstatement costs pertaining to the move of machinery must be included in the tender offer, as well as all the prospective works to be revised by Stellenbosch Municipality. An alternative for pole excavation has been addressed in the BOQ as drilling, although both items must be costed. Boring has also been added to the BOQ, should any cables be installed underneath existing tarred road surfaces.

20.2.1.7 Obsolete Equipment & Materials

Any old equipment & materials, not to be reused, and owned by Stellenbosch Municipality, is to be removed, transported and delivered to a location identified & communicated by Stellenbosch Municipality. This includes, but is not limited to cables, luminaires, light fittings, kiosks and poles. The items within the above mentioned process must be treated with care.

20.2.1.8 Poles

The streetlighting, for which Stellenbosch Municipality is now responsible, is to be upgraded to ensure conformity. While most existing poles will remain, and HPS luminaires replaced with LED luminaires, some new infrastructure will be added.

Existing concrete, galvanized steel and fibre glass poles, with a low cable entry service area of 400mm and lower, and within a high vandalism area, is to be protected with a Powercomm Pole Protection Unit or similar in quality, appeal, functionality and purpose

Newly added poles, shall conform to the specifications of Stellenbosch Municipality, and shall not require the above mentioned pole protection unit, as the cable service area will be 2.2m above ground level.

All pole top mounted kiosks in high vandalism areas shall be installed including a wire mesh mask

The contractor is responsible for all excavation, installation, pole alignment and remedial works post installation, such as compaction, paving and tarring in accordance with applicable standards & codes.



20.2.1.8 Location of the works

Six villages, six provincial road portions and six traffic light intersections within the wider Stellenbosch Municipal Region require streetlight infrastructure upgrades. Herewith a list, including GPS coordinates:

Name of Village	GPS Coordinates	
Raithby	34°01'21"S 18°48'15"E	
Jamestown	33°58'44"S 18°50'49"E	
Kylemore	33°54'59"S 18°57'03"E	
La Motte	33°53'38"S 19°04'28"E	
Lanquedoc	33°53'56"S 18°57'59"E	
Klapmuts	33°48'37"S 18°51'46"E	
Provincial Roads:	Start Coordinates	End Coordinates
MR177 km 29.78 to km 32.25	-33.94599618, 18.82667433	-33.93780540, 18.85064172
MR172/MR191 km 15.76 T-Junction	-33.86418800, 18.97835300	
MR187 km 13.00 to km 14.71	-33.87795235, 18.79593498	-33.87483400, 18.81398700
MR172 km 10.43 to km 13.34	-33.90539876, 18.95169874	-33.88379764, 18.96780725
MR191 km 19.64 to km 23.71	-33.88505139, 19.07507597	-33.90467222, 19.11198349
Traffic Lights:	Single Coordinate Points	
Annandale	-33.99687777734984, 18.826137704285777	
Lyndoch	-33.98258749670518, 18.770941055821474	
Vlaeberg	-33.996989310725155, 18.762600210556283	
Polkadraai	-33.95035980456896, 18.809222199999994	
Klapmuts	-33.80370273762174, 18.872472200000004	
Koelenhof	-33.874729638422586, 18.813822571164298	



Location maps indicate the positions of Villages, Provincial Roads and Traffic Lights respectively in Figure 1, 2 and 3:

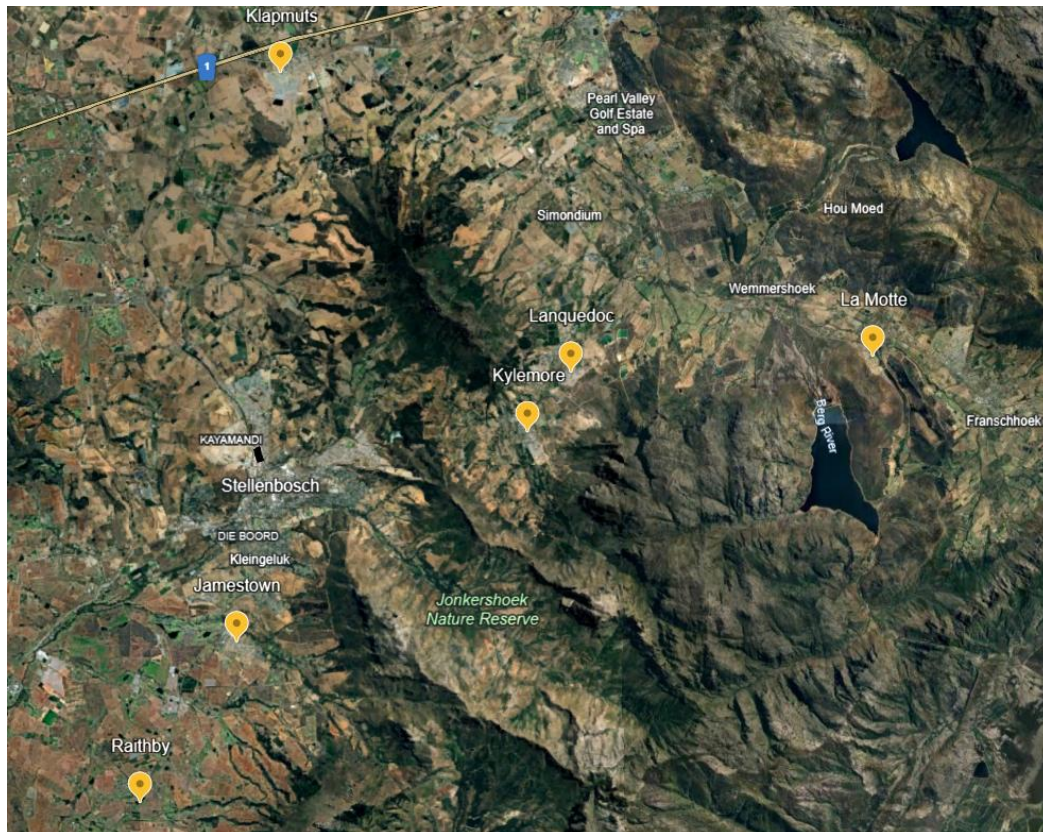


Figure 1

In general, the road classification data for within the 6 villages are not available within the Road Network Information System (RNIS), and the assumption has been made, that the main roads in each village, is to be of Class B1 / B2, with all inter residential roads being of Class B3.

Reference No:	B/SM 109/25	Page 74 of 373
---------------	-------------	----------------



20.2.2 Site Specific Scope Raithby Village

Installation Materials:

- 2.5mm² 3 Core silicone cable
- 25mm² x 4-core Alu ABC LV cable
- 25mm² 4 core aluminium wire (underground)
- 8m Wooden streetlight poles
- 12m Wooden streetlight poles
- 6m Concrete streetlight poles
- 8m Galvanised Steel Poles
- 10m Galvanised Steel Poles
- Anti Vandalism Cable protection concrete build up against poles within high vandalism areas indicated by the engineer & client
- 1m 0° Galvanised steel outreach arms
- 1.5m 0° Bent/bowed galvanised steel outreach arms
- 42mm spigots
- 36W LED Luminaires
- 76W LED Luminaires
- 37W Star Shaped Post Top Luminaires
- 103W LED Luminaires
- Ground- and/or pole mounted poly or steel vandal proof populated kiosks (Fully populated with circuit breakers, contactors, meters, photo sensors)

Referring to Figures 4 to 6 on the next page, the poles and cable routes indicated in blue will not be removed, while all green marked areas are new equipment. Regardless of blue or green poles, the luminaires will be replaced.



In Figure 4, the luminaires in main road known as Watson Way/Raithby Road, will be replaced with 76W LED lighting, while the luminaires on the roads within the residential area will be replaced with 36W luminaires, except in the parkand in Hendricks Street, where concrete pole with post top luminaires shall be utilised.

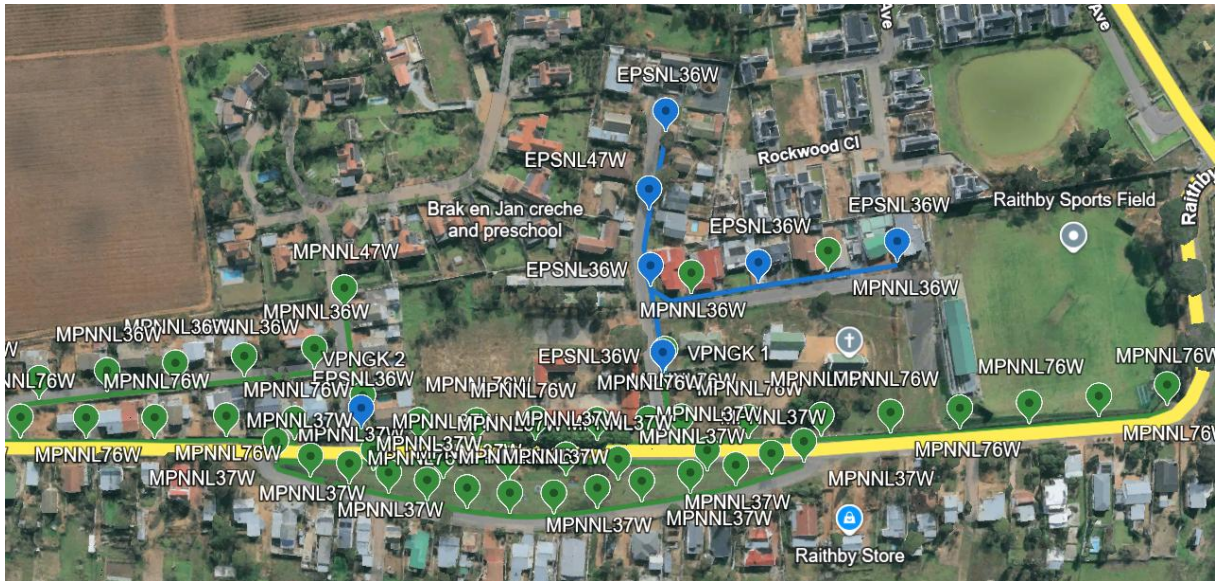


Figure 4

In Figure 5 below, the luminaires in main road known as Watson Way/Raithby Road, will be replaced with 76W LED lighting, while the luminaires on the roads within the residential area will be replaced with 36W luminaires.

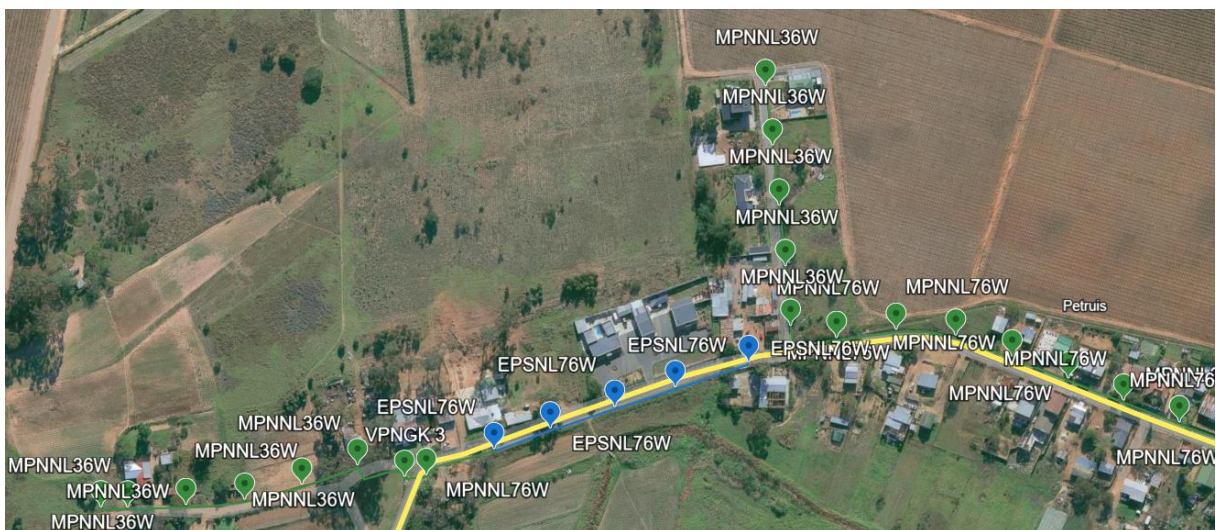


Figure 5



In Figure 6 below, the luminaires in main road by the 2nd exit from Raithby, known as Watson Way/Raithby Road, will be replaced with 103W LED lighting.



Figure 6

20.2.2.1 Poles

Mostly 8m wooden poles are to be used as replacement within the high residential area, with the exception of the first 18 poles in Watson Way upon entering the main village entrance, and 7 of 12m wooden poles in Watson way before exiting the village at the secondary exit. Furthermore a few Galvanised Steel poles is to be installed in various areas to conform with aesthetics (existing installations to stay).

20.2.2.2 Kiosks

4 Municipal Kiosks must be installed next to the existing Eskom Kiosks. This will suffice as the new feeder, isolation, control and metering points of supply to the lighting loads. All kiosks must be steel and vandal proof as per the Stellenbosch Municipality specification, of which 3 is to be ground mounted, and 1 pole mounted. It is the responsibility of the contractor to do any excavation, lay the plinth, supply, install and reconnect cabling from the existing Eskom Kiosks to the new Stellenbosch Municipality Kiosks. Any arrangements with 3rd parties to achieve this within reasonable time, is also the responsibility of the contractor, and must not cause time delays to the project.

20.2.2.3 Reticulation

Most of the Raithby village's cable will be replaced in order to achieve "redundancy" with sequential connection of every 3rd light to the same phase. The only area not affected by cable replacement is the last portion of Raithby road just before exiting the town at the 2nd exit (Hathaway Organic Farm Exit), and the portion above the primary school residential area.



20.2.2.4 Luminaires

A single star post top has been identified in Shaw Street, to be replaced with a 37W LED star post top. The new LED lighting on Raithby/Watson Road is to be 70W luminaires, the secondary village exit lights 103W, and all remaining residential area lighting 36W. All of the lights must be energized with 2.5mm² from the bottom feed main cable up to the luminaire.

20.2.2.5 Earthworks, Boring & Drilling

A large portion of the excavation will be done for pole installations and underground cable reticulation, as well as feeding new and existing kiosks. Care must be taken to reach the exact depth requirement of each pole respective to its length

20.2.3 Site Specific Scope Jamestown Village

Installation Materials:

- 8m Wooden streetlight poles
- 6m Concrete streetlight poles
- 8m Galvanised Steel Poles
- 10m Galvanised Steel Poles
- 2.5mm² 3 Core silicone cable
- 25mm² 4 core aluminium wire (ABC overhead)
- 25mm² 4 core aluminium wire (underground)
- 300mm 0° Galvanised steel outreach arms
- 1m 0° Galvanised steel outreach arms
- 1.5m 0° Bent/bowed galvanised steel outreach arms
- 42mm spigots
- 36W LED Luminaires
- 76W LED Luminaires
- 43W Star Shaped Post Top Luminaires
- Ground- and/or pole mounted poly or steel vandal proof populated kiosks (Fully populated with circuit breakers, contactors, meters, photo sensors)
- Anti Vandalism Cable protection concrete build up against poles within high vandalism areas indicated by the engineer & client



Referring to Figures 7 to 9 below, the poles and cable routes indicated in blue will not be removed, while all green marked areas are new equipment. Regardless of blue or green poles, the lighting will be replaced.

In Figure 7 below, the luminaires in main road known as Webersvallei Road, will be replaced with 76W LED lighting.



Figure 7

While a large portion of the existing pole and cable infrastructure will stay, the lighting will all be replaced with either 37W post top lights or 36W LED luminaires within the residential road areas. All existing streetlight infrastructure in Fresno street is to stay, including poles, cables and luminaires, except for 3 post top luminaires to receive a post top retrofit. Where streets mainly contain post top lights, any wooden eskom poles is to be removed, and replaced with LED post tops and concrete poles for uniformity(See Figure 8)



Figure 8

While both domestic and streetlight supplies are installed on a single pole type infrastructure system, it has already been segregated into two different electrical supplies within the Mountain View housing development in Jamestown, thus rendering no additional works to be completed in Mountain View as per Figure 9 below.



Figure 9



20.2.3.1 Poles

8m Wooden poles are to be used as replacement, except for some 8m and 10m Galvanised poles

20.2.3.2 Kiosks

15 Municipal Kiosks must be installed next to the existing Eskom Kiosks, which will suffice as the new feeder, isolation, control and metering points of supply to the lighting loads. All kiosks must be steel and vandal proof as per the Stellenbosch Municipality specification, of which 13 is to be ground mounted, and 2 pole mounted. It is the responsibility of the contractor to do any excavation, lay the plinth, supply, install and reconnect cabling from the existing Eskom Kiosks to the new Stellenbosch Municipality Kiosks. Any arrangements with 3rd parties to achieve this within reasonable time, is also the responsibility of the contractor, and must not cause time delays to the project.

20.2.3.3 Reticulation

Approximately 50% in distance of the village's cable will be replaced with overhead and underground cable in order to achieve "redundancy" with sequential connection of every 3rd light to the same phase. The area not affected by cable replacement is near 80% of the residential area of the village.

20.2.3.4 Luminaires

The main road (Webersvallei Rd) will all be replaced with 76W luminaires. Within the residential area, a small number of additional lights will be added, and all luminaires replaced with either new 37W star post top lights, or 36W LED luminaires.

20.2.3.5 Earthworks, Boring & Drilling

A large portion of the excavation will be done for pole installations and underground cable reticulation, as well as feeding new and existing kiosks. Care must be taken to reach the exact depth requirement of each pole respective to its length



20.2.4 Site Specific Scope Kylemore Village

Installation Materials:

- 8m Wooden streetlight poles
- 6m Concrete streetlight poles
- 12m Galvanised Steel Poles
- 25mm² 4 core aluminium wire (ABC overhead)
- 25mm² 4 core aluminium wire (underground)
- 1m 0° Galvanised steel outreach arms
- 36W LED Luminaires
- 37W Star Shaped Post Top Luminaires
- 76W LED Luminaires
- 103W LED Luminaires
- Anti Vandalism Cable protection concrete build up against poles within high vandalism areas indicated by the engineer & client
- 42mm spigots
- Ground- and/or pole mounted poly or steel vandal proof populated kiosks (Fully populated with circuit breakers, contactors, meters, photo sensors)

Referring to Figures 10 to 12 below, the poles and cable routes indicated in blue will not be removed, while all green marked areas are new equipment. Regardless of blue or green poles, the lighting will be replaced.

In Figure 10 below, all infrastructure is to be replaced, and all luminaires replaced with 36W LED's



Figure 10



Within the residential area in figure 11, all infrastructure and luminaires to be replaced, with the lights being 36W. The luminaires on the portion of road exiting the town, is to be replaced with 76W LED's

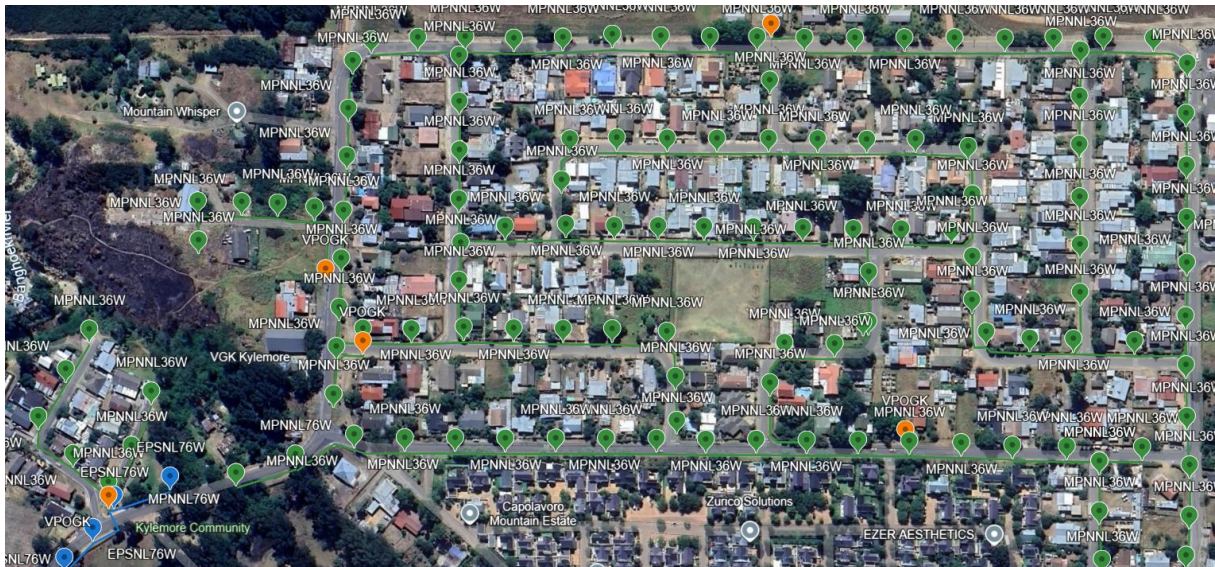


Figure 11

While the infrastructure in Figure 12 will remain, the luminaires will be changed to 76W LED units. The Streetlight infrastructure in Swart Street is to be connected with the 3 poles turning left onto the R310, and the 12 poles turning right into the R310, whereafter it must be connected to a Municipal kiosk on the R310, The existing cable is to be replaced.

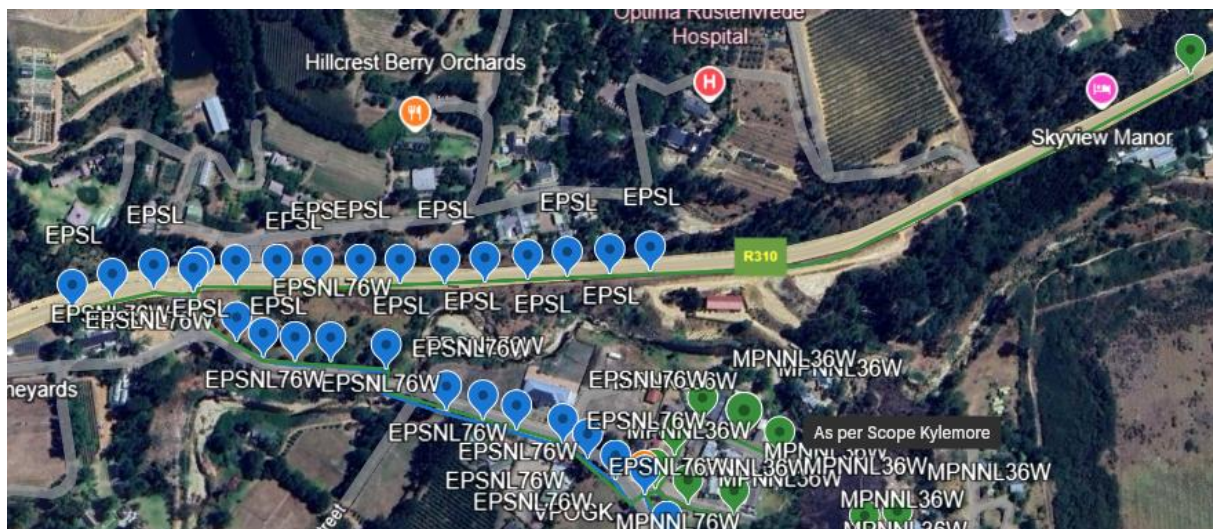


Figure 12



20.2.4.1 Poles

8m Wooden poles are to be used as replacement, with the exception of adding a few 6m concrete and both 8 and 10m galvanized poles.

20.2.4.2 Kiosks

All existing kiosks that are suitable (complies with municipalities specifications and not damaged) must be re-used as far as possible. 9 Municipal Kiosks must be installed next to the existing Eskom Kiosks, which will suffice as the new feeder, isolation, control and metering points of supply to the lighting loads. All kiosks must be steel and vandal proof as per the Stellenbosch Municipality specification, of which 4 is to be ground mounted, and 5 pole mounted. It is the responsibility of the contractor to do any excavation, lay the plinth, supply, install and reconnect cabling from the existing Eskom Kiosks to the new Stellenbosch Municipality Kiosks. Any arrangements with 3rd parties to achieve this within reasonable time, is also the responsibility of the contractor, and must not cause time delays to the project.

20.2.4.3 Reticulation

90% of the village's cable will be replaced in order to achieve "redundancy" with sequential connection of every 3rd light to the same phase. The only area not affected by cable replacement is the village entry road portion.

20.2.4.4 Luminaires

The new LED lighting on Swart Street is to be 76W luminaires, and all remaining residential area lighting 36W. All of the lights must be energized with 2.5mm² from the bottom feed main cable up to the luminaire.

20.2.4.5 Earthworks, Boring & Drilling

A large portion of the excavation will be done for pole installations and underground cable reticulation, as well as feeding new and existing kiosks. Care must be taken to reach the exact depth requirement of each pole respective to its length



20.2.5 Site Specific Scope La Motte Village

Installation Materials:

- 25mm² 4 core aluminium wire (underground)
- 36W LED Luminaires
- 37W Star Shaped Post Top Luminaire Replacement with side entry 36W in White Village
- 76W LED Luminaires
- Ground- and/or pole mounted poly or steel vandal proof populated kiosks (Fully populated with circuit breakers, contactors, meters, photo sensors)

The poles in La Motte Village is to be replaced with concrete poles and new 36W LED luminaires. white village from star top units to side entry 36W luminaires and 300mm bracket, and 76W LED Luminaires for the entrance roads in Figure 13

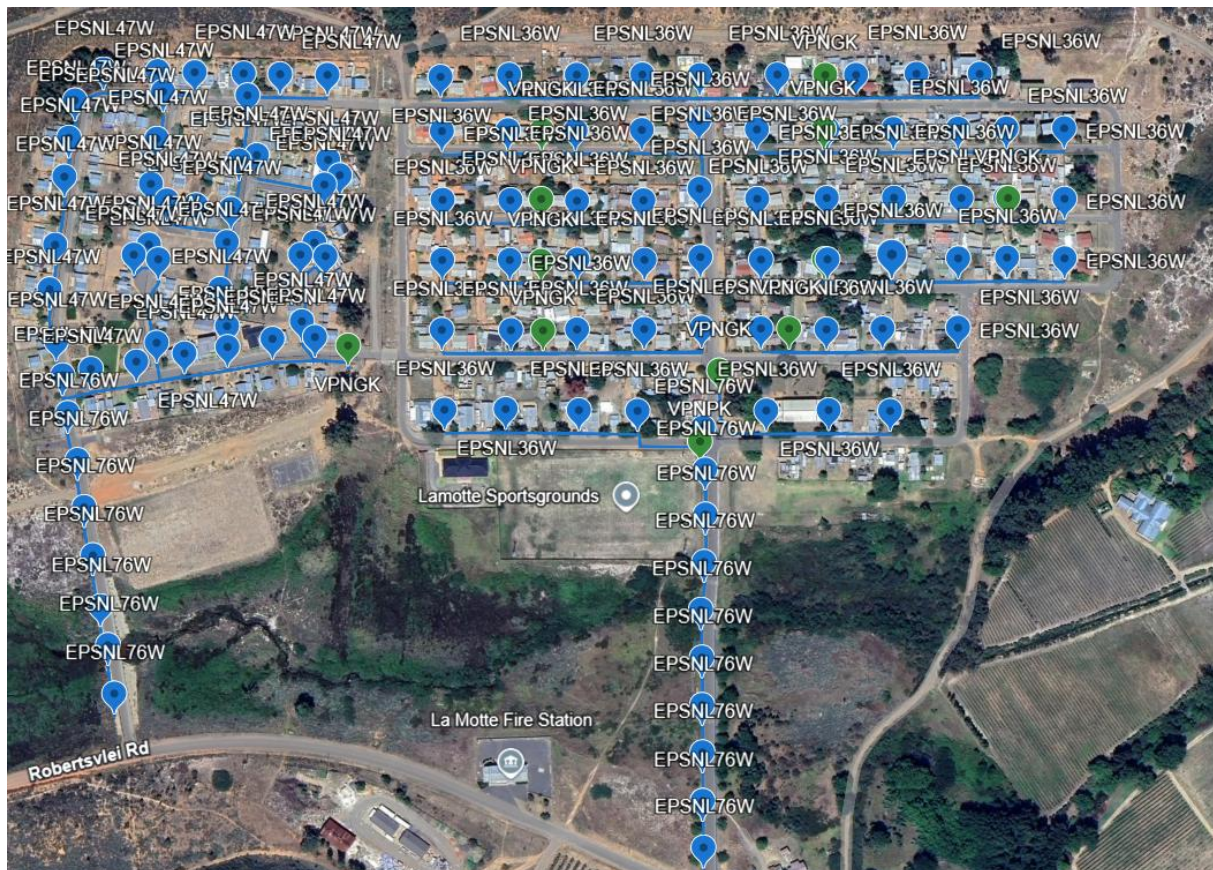


Figure 13

20.2.5.1 Poles

Concrete poles are to replace wooden poles within the village, excluding the White village residential area, where existing post tops will receive an LED retrofit, as well as additional post top units



20.2.5.2 Kiosks

13 Municipal Kiosks must be installed next to the existing Eskom Kiosks, which will suffice as the new feeder, isolation, control and metering points of supply to the lighting loads. All kiosks must be steel and vandal proof as per the Stellenbosch Municipality specification, of which 12 is to be ground mounted, and 1 pole mounted. It is the responsibility of the contractor to do any excavation, lay the plinth, supply, install and reconnect cabling from the existing Eskom Kiosks to the new Stellenbosch Municipality Kiosks. Any arrangements with 3rd parties to achieve this within reasonable time, is also the responsibility of the contractor, and must not cause time delays to the project.

20.2.5.3 Reticulation

Provision have been made to replace existing underground cable where and if damaged while replacing wooden poles with concrete poles

20.2.5.4 Luminaires

All luminaires are to be replaced with 36W LED units within the La Motte residential area as well as the White Village area. The 2 town entry road lights must be replaced with 76W LED luminaires.

20.2.5.5 Earthworks, Boring & Drilling

A large portion of the excavation will be done for pole installations and underground cable reticulation, as well as feeding new and existing kiosks. Care must be taken to reach the exact depth requirement of each pole respective to its length

20.2.6 Site Specific Scope Lanquedoc Village

Installation Materials:

- 8m Wooden streetlight poles
- 8m Galvanised Steel Poles
- Anti Vandalism Cable protection concrete build up against poles within high vandalism areas indicated by the engineer & client
- 2.5mm² 3 Core silicone cable
- 25mm² 4 core aluminium wire (ABC overhead)
- 25mm² 4 core aluminium wire (underground)
- 1m 0° Straight Galvanised steel outreach arms
- 300mm 0° Galvanised steel outreach arms
- 42mm spigots
- 36W LED Luminaires
- 76W LED Luminaires
- Ground- and/or pole mounted poly or steel vandal proof populated kiosks (Fully populated with circuit breakers, contactors, meters, photo sensors)

Referring to Figures 14 to 15 below, the poles and cable routes indicated in blue will not be removed, while all green marked areas are new equipment. Regardless of blue or green poles, the lighting will be replaced.

While the main road infrastructure will remain in Figure 14 below, the lights are to be replaced with 76W LED luminaires

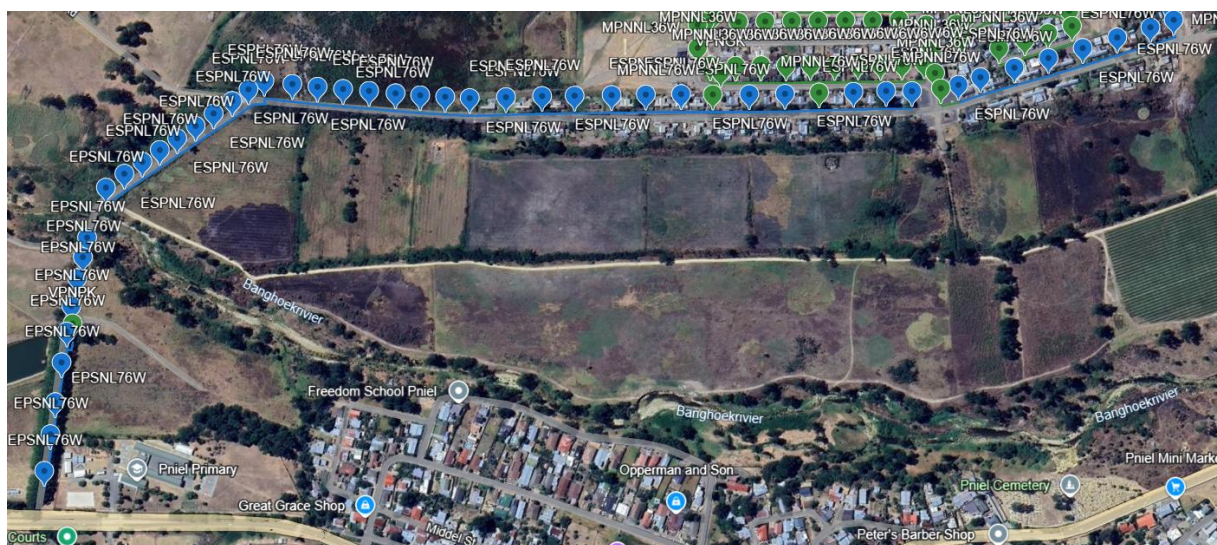


Figure 14



Most of the residential road infrastructure will be replaced, as well as the luminaires with 36W LED units (see Figure 15 below)

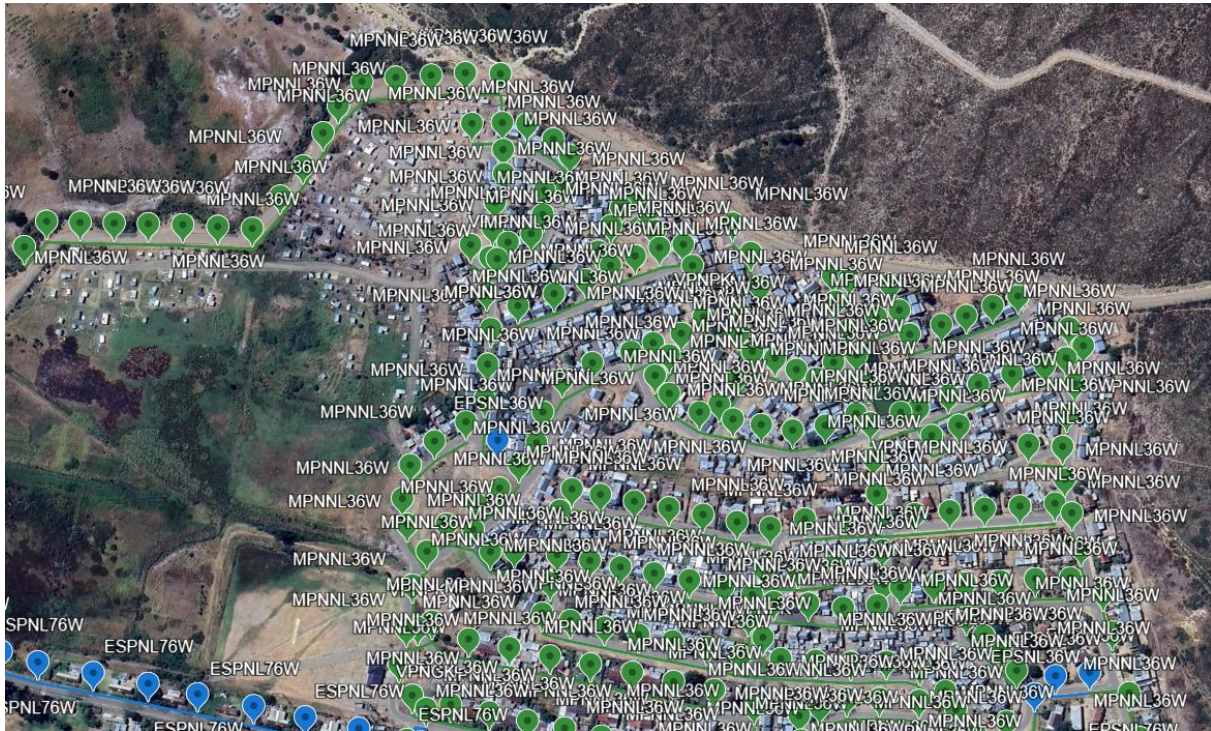


Figure 15

20.2.6.1 Poles

Mostly 8m wooden poles are to be used as replacement, with the exception of 3 x 8m galvanized steel poles for aesthetics.

20.2.6.2 Kiosks

8 Municipal Kiosks must be installed next to the existing Eskom Kiosks, which will suffice as the new feeder, isolation, control and metering points of supply to the lighting loads. All kiosks must be steel and vandal proof as per the Stellenbosch Municipality specification, of which 1 is to be ground mounted, and 7 pole mounted. It is the responsibility of the contractor to do any excavation, lay the plinth, supply, install and reconnect cabling from the existing Eskom Kiosks to the new Stellenbosch Municipality Kiosks. Any arrangements with 3rd parties to achieve this within reasonable time, is also the responsibility of the contractor, and must not cause time delays to the project.



20.2.6.3 Reticulation

All of the village's cable will be replaced in order to achieve "redundancy" with sequential connection of every 3rd light to the same phase. The only area not affected by cable replacement is the main entrance road to the village, Hoof Rd.

20.2.6.4 Luminaires

The residential road lights is to be 36W and the remainder in the main road 76W for higher traffic volumes.

20.2.6.5 Earthworks, Boring & Drilling

A large portion of the excavation will be done for pole installations and underground cable reticulation, as well as feeding new and existing kiosks. Care must be taken to reach the exact depth requirement of each pole respective to its length

20.2.7 Site Specific Scope Klapmuts Village

Installation Materials:

- 8m Wooden streetlight poles
- 6m Concrete streetlight poles
- 8m Galvanised Steel Poles
- 12m Galvanised Steel Poles
- Anti Vandalism Cable protection concrete build up against poles within high vandalism areas indicated by the engineer & client
- 2.5mm² 3 Core silicone cable
- 25mm² 4 core aluminium wire (ABC overhead)
- 25mm² 4 core aluminium wire (underground)
- 300mm 0° Galvanised steel outreach arms
- 1m 0° Straight Galvanised steel outreach arms for wooden poles
- 1.5m 0° Bent/bowed galvanised steel outreach arms
- 36W LED Luminaires
- 37W Star Shaped Post Top Luminaires
- 70W LED Luminaires
- 300mm 0° Galvanised steel outreach arms
- 1m 0° Galvanised steel outreach arms for wooden poles
- Ground- and/or pole mounted poly or steel vandal proof populated kiosks (Fully populated with

circuit breakers, contactors, meters, photo sensors)

Referring to Figures 14 to 17 below, the poles and cable routes indicated in blue will not be removed, while all green marked areas are new equipment. Regardless of blue or green poles, the lighting will be replaced.

With a mixture of new- and infrastructure to stay, the main entry road lights will be replaced with 76W LED luminaires, while the residential roads will receive 36W LED units. (Figure 16)

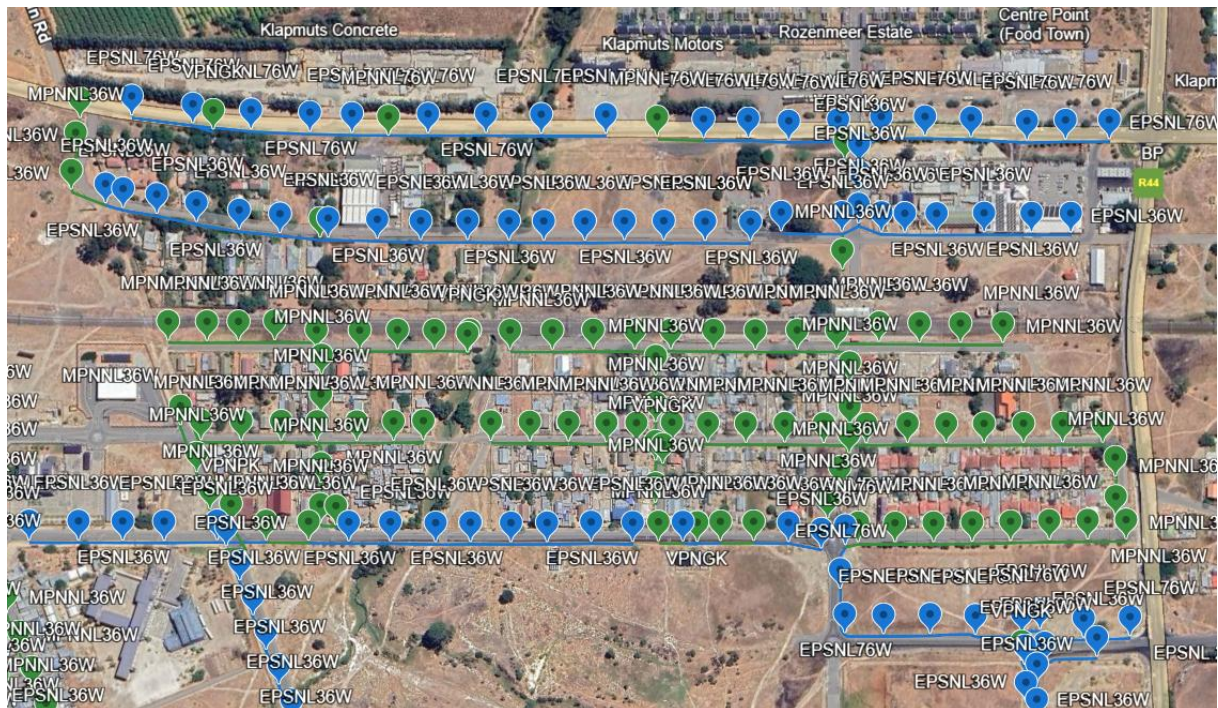


Figure 16



Similar to Figure 16, Figure 17 indicates a large residential mix of both infrastructure to stay, and new infrastructure. All residential area streetlights are to be replaced with 36W LED Luminaires.

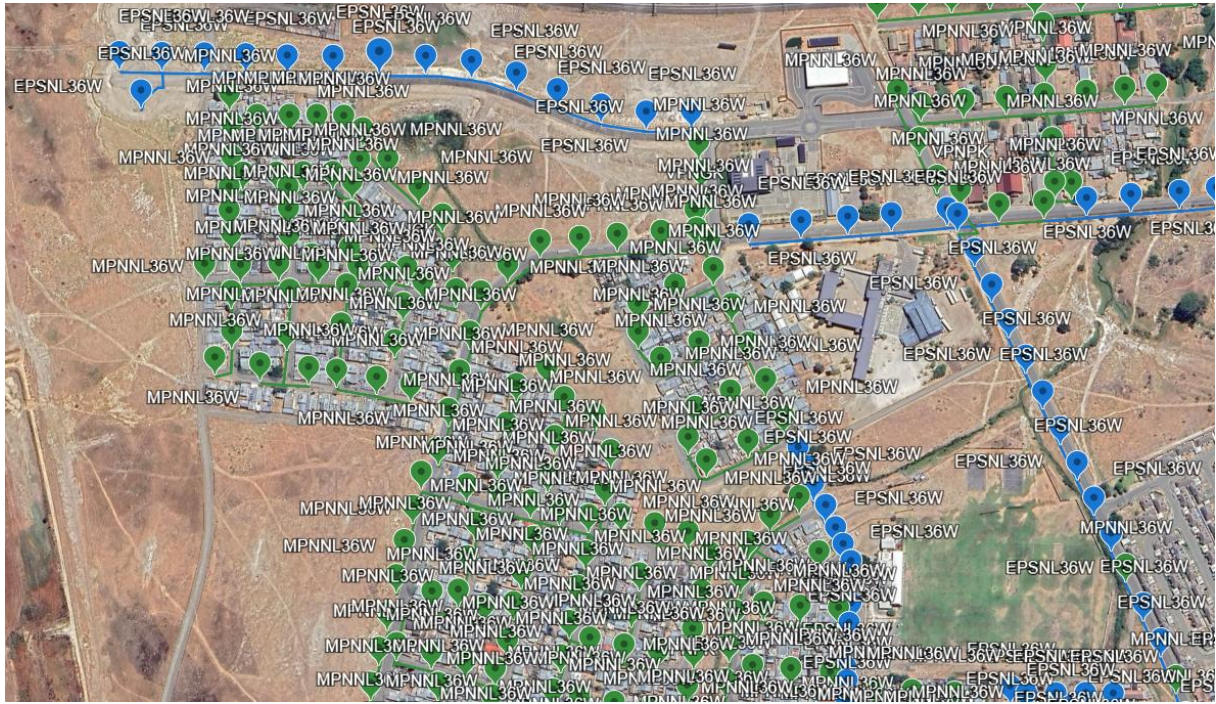


Figure 17

Similar to Figure 17, Figure 18 indicates a large residential mix of both infrastructures to stay, and new infrastructure. All residential area streetlights are to be replaced with 36W LED Luminaires.



Figure 18



20.2.7.1 Poles

Mostly 8m wooden poles are to be used as replacement, except for a small number of galvanized poles to optimize lighting in areas where the lighting level is no sufficient, and to comply with the aesthetics of existing infrastructure. The area “Mandela City” is to be fitted with 6 x High Mast lighting with a pole height from the ground of approximately 12m and 4 way light fittings to fit up to maximum of 6 luminaires each.

20.2.7.2 Kiosks

22 Municipal Kiosks must be installed next to the existing Eskom Kiosks, which will suffice as the new feeder, isolation, control and metering points of supply to the lighting loads. All kiosks must be steel and vandal proof as per the Stellenbosch Municipality specification, of which 15 is to be ground mounted, and 7 pole mounted. It is the responsibility of the contractor to do any excavation, lay the plinth, supply, install and reconnect cabling from the existing Eskom Kiosks to the new Stellenbosch Municipality Kiosks. Any arrangements with 3rd parties to achieve this within reasonable time, is also the responsibility of the contractor, and must not cause time delays to the project.

20.2.7.3 Reticulation

Approximately 50% of the village’s cable will be replaced in order to achieve “redundancy” with sequential connection of every 3rd light to the same phase. The areas least affected by cable replacement is most of the main roads, and formal housing schemes

20.2.7.4 Luminaires

The residential road areas will be using the 36W LED lights, and the higher volume main roads the 76W LED lights. The Mandela City area will receive high mast lighting units, as overhead Eskom infrastructure is installed on both sides of the roads. This High Mast Lighting may consist of solar lighting implementation, if so chosen by Stellenbosch Municipality upon appointment of the winning bidder.

20.2.7.5 Earthworks, Boring & Drilling

A large portion of the excavation will be done for pole installations and underground cable reticulation, as well as feeding new and existing kiosks. Care must be taken to reach the exact depth requirement of each pole respective to its length



20.2.7.6 Site Specific Scope

Installation Materials:

- 8m Wooden streetlight poles
- 6m Concrete streetlight poles
- 8m Galvanised Steel Poles
- 12m Galvanised Steel Poles
- Anti Vandalism Cable protection concrete build up against poles within high vandalism areas indicated by the engineer & client
- 2.5mm² 3 Core silicone cable
- 25mm² 4 core aluminium wire (ABC overhead)
- 25mm² 4 core aluminium wire (underground)
- 300mm 0° Galvanised steel outreach arms
- 1m 0° Straight Galvanised steel outreach arms for wooden poles
- 1.5m 0° Bent/bowed galvanised steel outreach arms
- 36W LED Luminaires
- 43W Star Shaped Post Top Luminaires
- 70W LED Luminaires
- 300mm 0° Galvanised steel outreach arms
- 1m 0° Galvanised steel outreach arms for wooden poles
- Ground- and/or pole mounted poly or steel vandal proof populated kiosks (Fully populated with circuit breakers, contactors, meters, photo sensors)

20.2.8 MR177 km 29.78 to km 32.25

The relevant road portion, commonly referred to as the R310 Polkadraai road, starts at MR177 km 29.78 and ends at MR177 km 32.25 (Provincial Roads Naming Reference). The GPS coordinates for the start and end points are respectively -33.94599618, 18.82667433 and -33.93780540, 18.85064172 and have been divided into zones (see Figure 19 below) following different criteria and requirements:

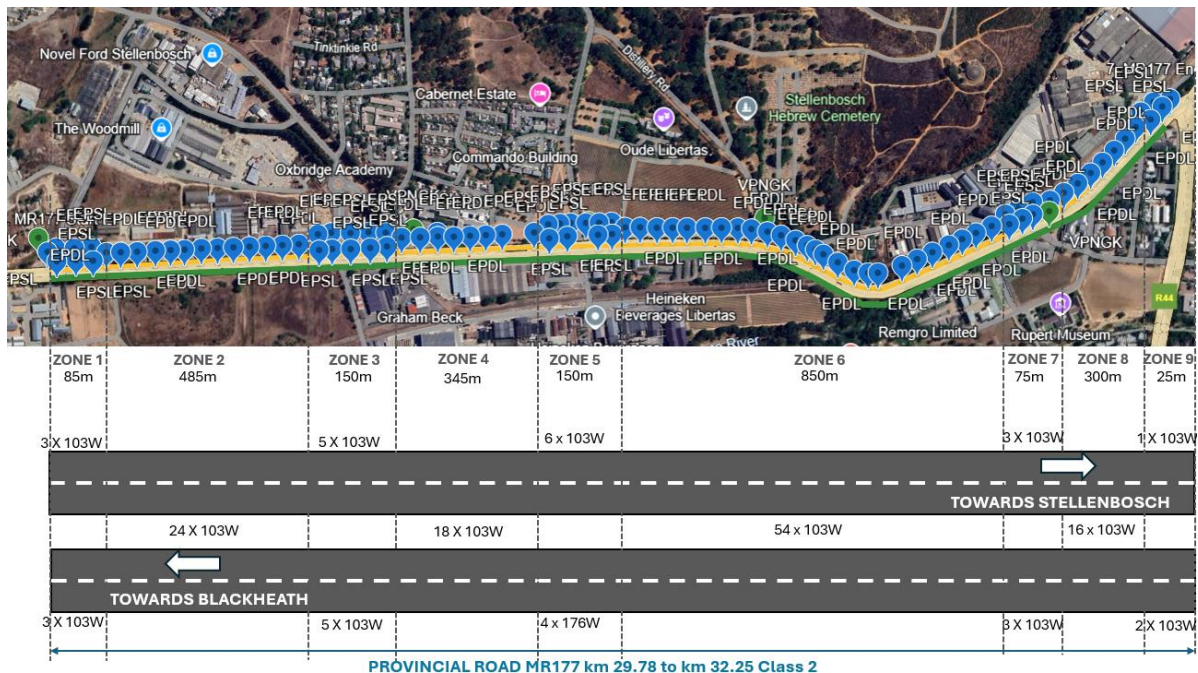


Figure 19

With further reference to the previously mentioned Figure 19, herewith the details per zone:

ZONE 1 While the current lighting infrastructure exists, provision has been included for LED lighting replacement, ensuring compliance:

Speed limit	60km/h
Road Class	A3 Med 600 Vehicles
Luminaires Used	6 x 103W (Arrangement: Opposite)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	arched 1.5m
Comment	All light angles are to be changed to 0°

ZONE 2 While current lighting infrastructure exists, provision has been included for LED lighting replacement, ensuring compliance:

Speed limit	60km/h
Road Class	A3 Med 600 Vehicles
Luminaires Used	24 x 103W (Arrangement: Median)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	arched 1.5m
Comment	All light angles are to be changed to 0°



ZONE 3 While the current lighting infrastructure exists, provision has been included for LED lighting replacement, ensuring compliance:

Speed limit	60km/h
Road Class	A3 Med 600 Vehicles
Luminaires Used	10 x 103W (Arrangement: Opposite)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	arched 1.5m
Comment	All light angles are to be changed to 0°

ZONE 4 While current lighting infrastructure exists, provision has been included for LED lighting replacement, and the addition of a pole, ensuring compliance:

Speed limit	60km/h
Road Class	A3 Med 600 Vehicles
Luminaires Used	18 x 103W (Arrangement: Median)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	arched 1.5m
Comment	All light angles are to be changed to 0°

ZONE 5 While the current lighting infrastructure exists, provision has been included for LED lighting replacement, ensuring compliance:

Speed limit	60km/h
Road Class	A3 Med 600 Vehicles
Luminaires Used	10 x 103W & 4 x 176W (Arrangement: Opposite)
Pole Height	12m MH (max)
Rake Angle	0°



ZONE 6 While current lighting infrastructure exists, provision has been included for LED lighting replacement, and the addition of a pole, ensuring compliance:

Speed limit	60km/h
Road Class	A3 Med 600 Vehicles
Luminaires Used	54 x 103W (Arrangement: Median)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	arched 1.5m
Comment	All light angles are to be changed to 0° and a pole added

ZONE 7 While the current lighting infrastructure exists, provision has been included for LED lighting replacement, ensuring compliance:

Speed limit	60km/h
Road Class	A3 Med 600 Vehicles
Luminaires Used	6 x 103W (Arrangement: Opposite)
Pole Height	12m MH (max)
Rake Angle	0°

ZONE 8 While the current lighting infrastructure exists, provision has been included for LED lighting replacement, and the addition of a pole, ensuring compliance:

Speed limit	60km/h
Road Class	A3 Med 600 Vehicles
Luminaires Used	16 x 103W (Arrangement: Median)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	arched 1.5m
Comment	All light angles are to be changed to 0° and a pole added



ZONE 9 While the current lighting infrastructure exists, provision has been included for LED lighting replacement, ensuring compliance:

Speed limit	60km/h
Road Class	A3 Med 600 Vehicles
Luminaires Used	3 x 103W (Arrangement: Opposite)
Pole Height	12m MH (max)
Rake Angle	0°

20.2.9 MR172/MR191 km 15.76

The relevant road portion, known as the R310/R45 T-Junction at the Allee Blue Wine Estate, is located at MR191 km 15.76 (Provincial Roads Naming Reference). Recent changes have been made to the lighting, however portions not fully addressed with lighting infrastructure replacement must be addressed. The GPS coordinates are -33.86418800, 18.97835300, and have been divided into zones (see Figure 20a and 20b below) following different criteria and requirements:

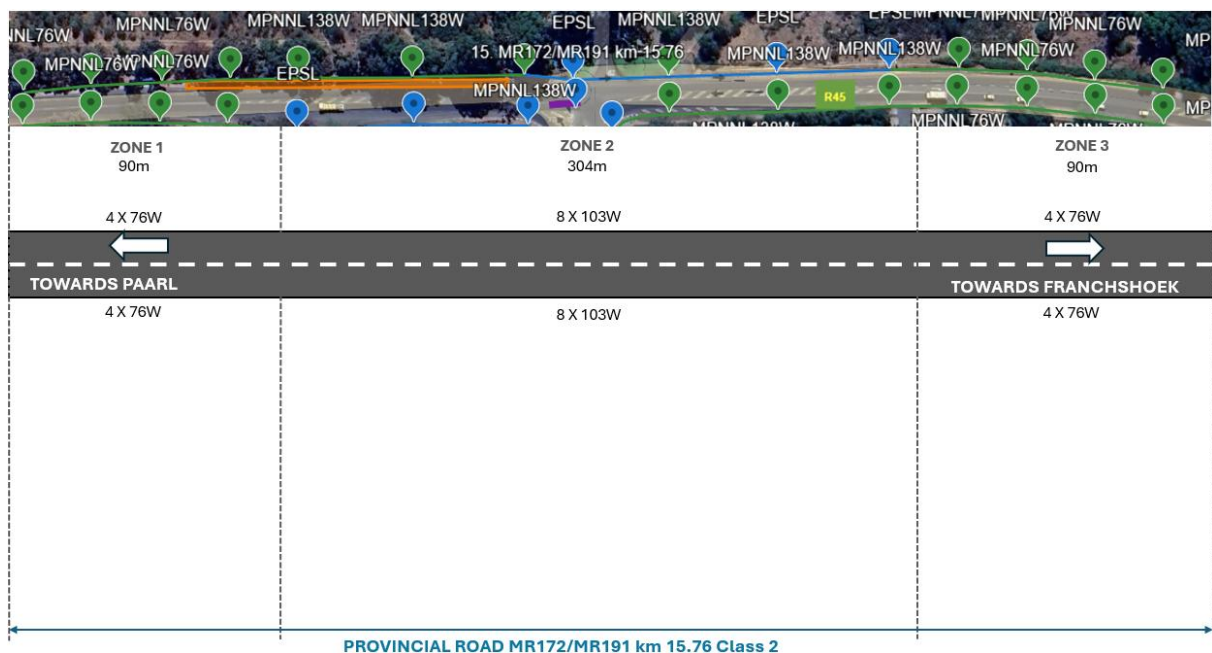


Figure 20a

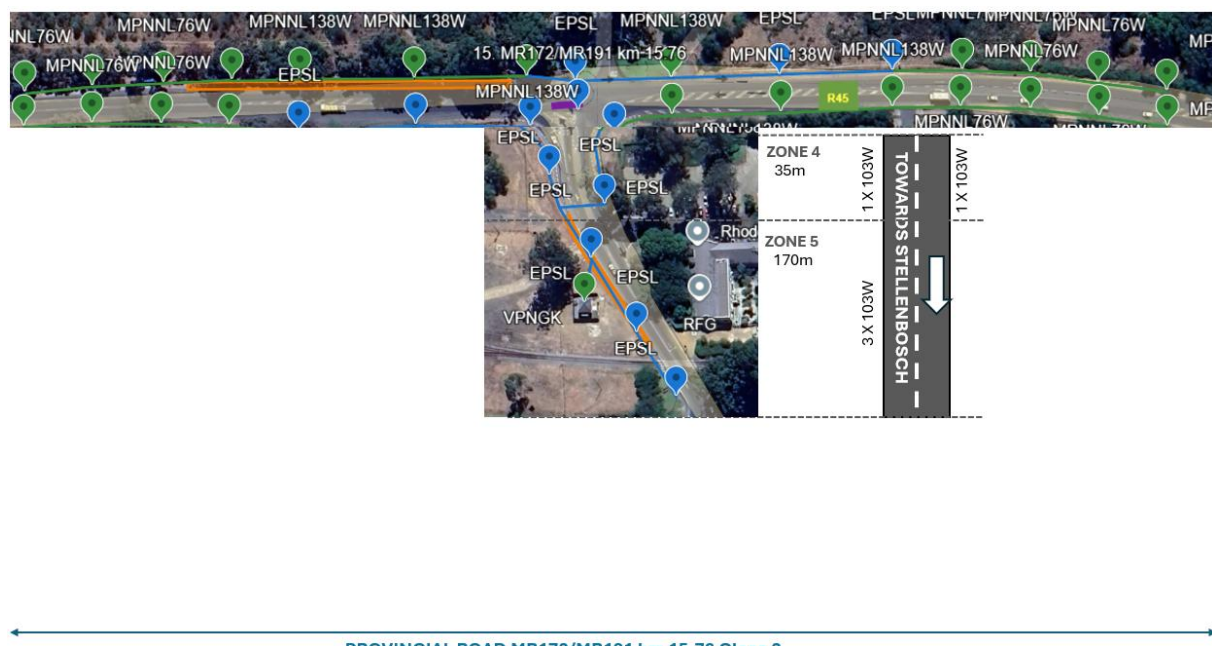


Figure 20b



With further reference to the previously mentioned Figures 20a and 20b, herewith the details per zone:

ZONE 1 While the current lighting infrastructure exists, provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	100km/h
Road Class	A3 Med 300 Vehicles
Luminaires Used	8 x 76 (Arrangement: Opposite)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Regression zone

ZONE 2 While the current lighting infrastructure exists, provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	100km/h
Road Class	A3 Med 300 Vehicles
Luminaires Used	16 x 103 (Arrangement: Opposite)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Additional poles to be added

ZONE 3 While the current lighting infrastructure exists, provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	100km/h
Road Class	A3 Med 300 Vehicles
Luminaires Used	8 x 76 (Arrangement: Opposite)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Regression zone



ZONE 4 While current lighting infrastructure exists, provision has been included for LED lighting replacement, ensuring compliance:

Speed limit	60km/h
Road Class	A3 Med 600 Vehicles
Luminaires Used	2 x 103W (Arrangement: Side)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	All light angles are to be changed to 0°

ZONE 5 While the current lighting infrastructure exists, provision has been included for LED lighting replacement, ensuring compliance:

Speed limit	60km/h
Road Class	A3 Med 600 Vehicles
Luminaires Used	3 x 103W (Arrangement: Side)
Pole Height	12m MH (max)
Rake Angle	0°



20.2.10 MR187 km 13.00 to km 14.71

The relevant road portion, commonly referred to as the R310 Polkadraai road, starts at MR177 km 29.78 and ends at MR177 km 32.25 (Provincial Roads Naming Reference). The GPS coordinates for the start and end points are respectively -33.94599618, 18.82667433 and -33.93780540, 18.85064172 and have been divided into zones (see Figure 21 below) following different criteria and requirements:

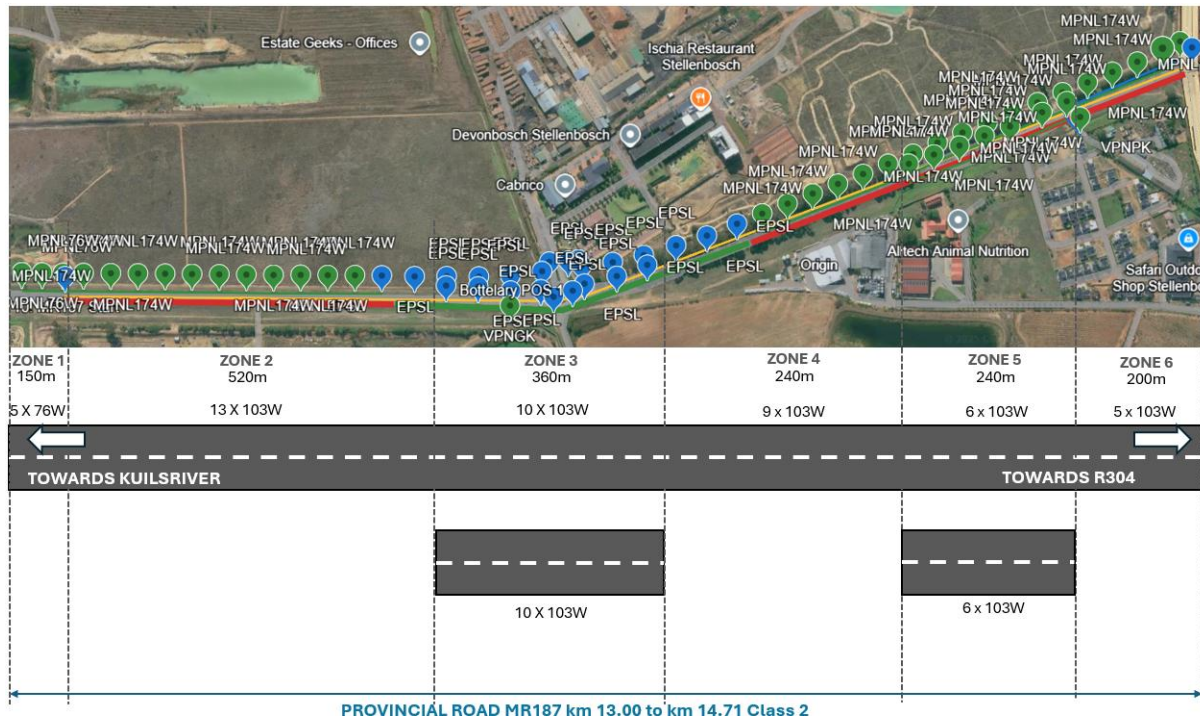


Figure 21

With further reference to the previously mentioned Figure 21, herewith the details per zone:

ZONE 1 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 Med 300 Vehicles
Luminaires Used	5 x 76 (Arrangement: Side)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	arched 1.5m
Comment	Regression zone, add new infrastructure



ZONE 2 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 Med 300 Vehicles
Luminaires Used	13 x 103W (Arrangement: Side)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	arched 1.5m
Comment	New Infrastructure to be installed

ZONE 3 Provision has been included for LED lighting replacement ensuring compliance:

Speed limit	80km/h
Road Class	A2 Med 300 Vehicles
Luminaires Used	20 x 103W (Arrangement: Opposite)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	arched 1.5m
Comment	New luminaires to be installed

ZONE 4 Provision has been included for LED lighting replacement, and some infrastructure ensuring compliance:

Speed limit	80km/h
Road Class	A2 Med 300 Vehicles
Luminaires Used	9 x 103W (Arrangement: Side)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	arched 1.5m
Comment	New luminaires & some poles to be installed



ZONE 5 Provision has been included for LED lighting replacement, and some infrastructure ensuring compliance:

Speed limit	80km/h
Road Class	A2 Med 300 Vehicles
Luminaires Used	12 x 103W (Arrangement: Opposite)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	arched 1.5m
Comment	New luminaires & some poles to be installed

ZONE 6 Provision has been included for LED lighting replacement, and some infrastructure ensuring compliance:

Speed limit	80km/h
Road Class	A2 Med 300 Vehicles
Luminaires Used	5 x 103W (Arrangement: Side)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	arched 1.5m
Comment	New luminaires & some poles to be installed



20.2.11 MR172 km 10.49 to km 13.34

The relevant road portion, commonly referred to as the R310 Pniel Hoof road, starts at MR172 km 10.49 and ends at MR172 km 13.34 (Provincial Roads Naming Reference). The GPS coordinates for the start and end points are respectively -33.90539876, 18.95169874 and -33.88379764, 18.96780725,

Which have been divided into zones (see Figure 22 below) following specific criteria and requirements:

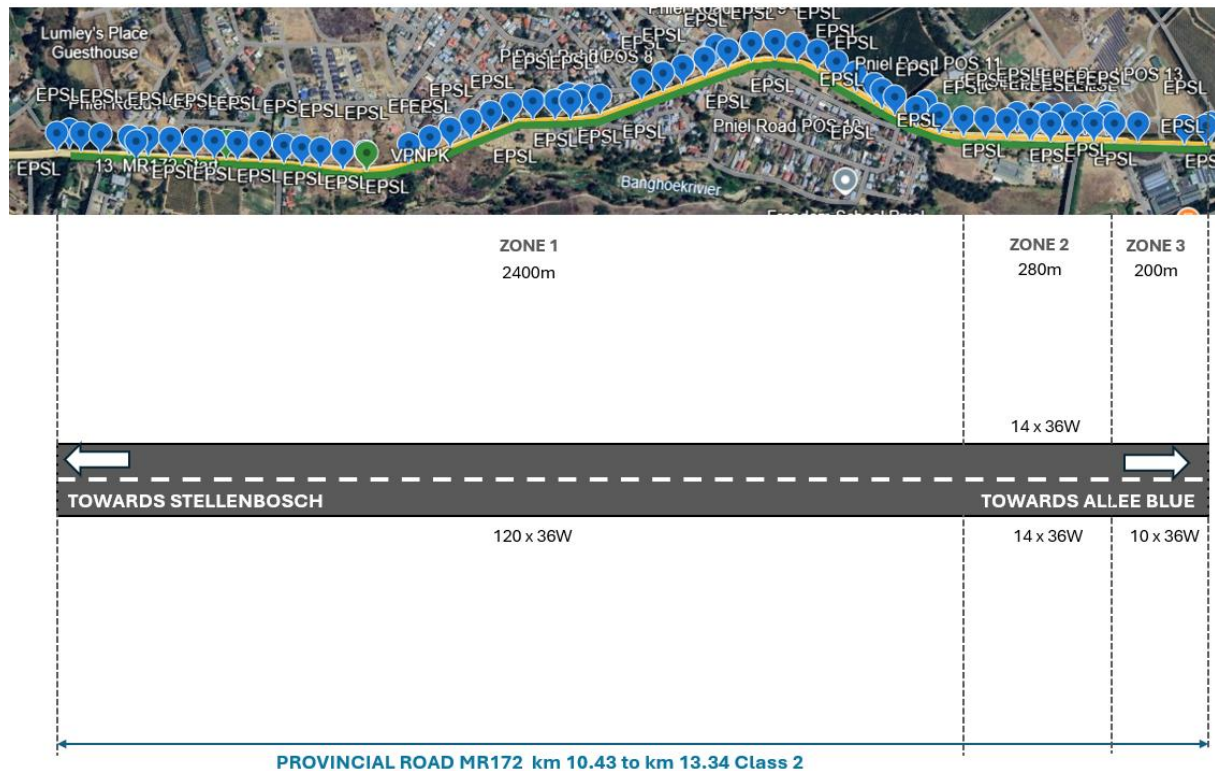


Figure 22

With further reference to the previously mentioned Figure 22, herewith the details per zone:

ZONE 1 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A3 Med 300 Vehicles
Luminaires Used	62 x 76W (Arrangement: Side)
Pole Height	8m MH
Rake Angle	0°
Outreach	0.5m
Comment	Poles are 50m apart. Add new poles to be 25m apart install 76W LED heritage type



ZONE 2 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A3 Med 300 Vehicles
Luminaires Used	28 x 76W (Arrangement: Opposite)
Pole Height	8m MH
Rake Angle	0°
Outreach	0.5m
Comment	Install 76W LED with arm and spigot. Poles are 50m apart. Add new poles to be 25m apart

ZONE 3 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A3 Med 300 Vehicles
Luminaires Used	10 x 76W (Arrangement: Opposite)
Pole Height	8m MH
Rake Angle	0°
Outreach	0.5m
Comment	Install 76W LED with arm and spigot. Poles are 50m apart. Add new poles to be 25m apart

20.2.12 MR191 km 19.64 to km 23.71

The relevant road portion, commonly referred to as the R45 Franschhoek road, starts at MR191 km 19.64 and ends at MR191 km 23.71 (Provincial Roads Naming Reference). The GPS coordinates for the start and end points are respectively -33.88505139, 19.07507597 and -33.90467222, 19.11198349, which have been divided into zones (see Figure 23 below) following specific criteria and requirements, including the installation of fibre glass streetlight poles:

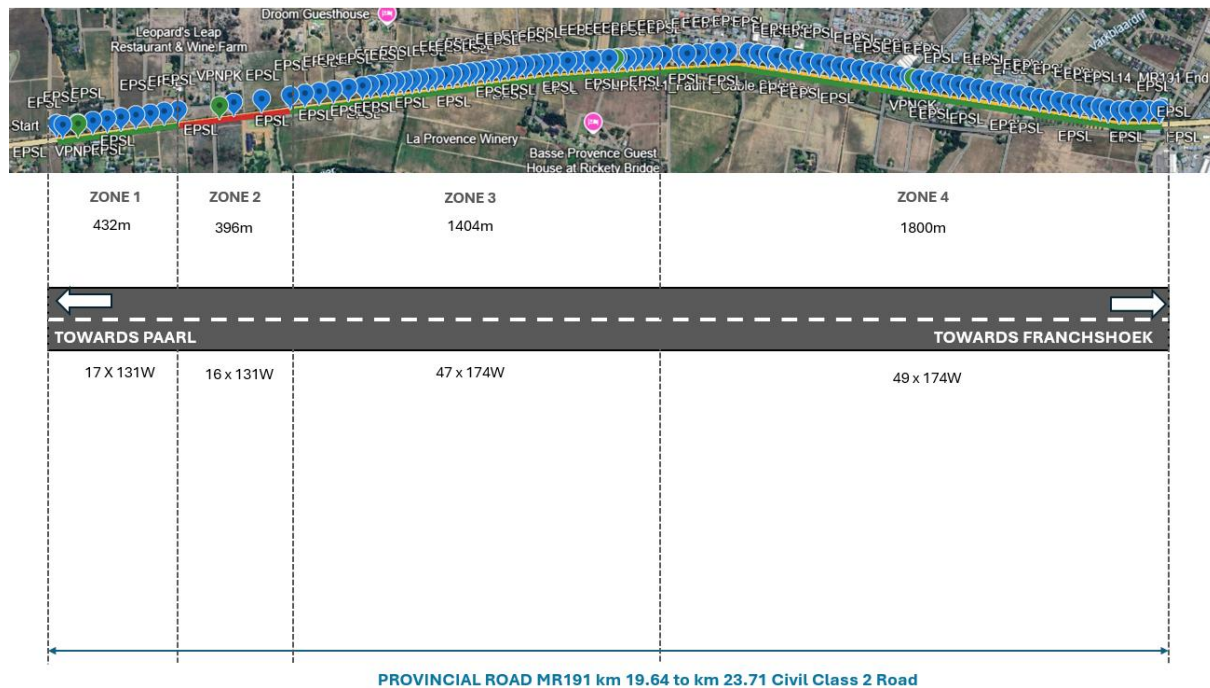


Figure 23

With further reference to the previously mentioned Figure 23, herewith the details per zone:

ZONE 1	Provision has been included for LED lighting replacement and pole additions ensuring compliance:
Speed limit	100km/h
Road Class	A1 No Med 600 Vehicles
Luminaires Used	22 x 131W (Arrangement: Opposite)
Pole Height	10m MH
Rake Angle	0°
Outreach	300mm
Comment	Add 8 fibre glass poles (BEKAPole or similar in quality and appearance) between the 9 existing poles, 9 poles opposite, and 22 new 131W LED luminaires in total



ZONE 2 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	100km/h
Road Class	A1 No Med 600 Vehicles
Luminaires Used	24 x 131W (Arrangement: Opposite)
Pole Height	10m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 10 fibre glass poles (BEKAPole or similar in quality and appearance) between the 2 existing poles, 12 fibre glass poles staggered opposite, and 24 new 131W LED luminaires in total. Additional 25mm ² 4C underground cable may be required, as it was noted vandalized/removed

ZONE 3 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	100km/h
Road Class	A1 No Med 600 Vehicles
Luminaires Used	47 x 174W (Arrangement: Side)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 5 poles between 42 existing poles, and 47 new 174W LED luminaires. Note that additional 25mm ² 4C underground cable may be required, as it was noted vandalized/removed

ZONE 4 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 No Med 600 Vehicles
Luminaires Used	49 x 174W (Arrangement: Side)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Comment

Add 1 poles where zone 4 starts (furthest point from town),
and 49 new 174W LED luminaires in total.

20.2.13 Vlaeberg Traffic Light Intersection/T-Junction

The relevant traffic light junction, commonly referred to as the Vlaeberg Traffic T-Junction, is located where the Vlaeberg Road, and Baden Powel Drive intersects. The GPS coordinates for the location is -33.996989310725155, 18.762600210556283, and have been divided into zones (see Figure 24 below) following specific criteria and requirements:



Figure 24

With further reference to the previously mentioned Figure 24, herewith the details per zone:

ZONE 1 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 No Med 600 Vehicles
Luminaires Used	6 x 103W (Arrangement: Side)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 3 poles between the 3 existing poles, 6 new 103W LED luminaires, and 6 x 300mm outreach in total



ZONE 2 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 No Med 600 Vehicles
Luminaires Used	8 x 174W (Arrangement: Side)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 4 poles between the 4 existing poles, 8 new 174W LED luminaires, and 8 x 300mm outreach in total

ZONE 3 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 Med 600 Vehicles
Luminaires Used	16 x 103W (Arrangement: Median)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	1,5m arched
Comment	Add 4 poles between the 4 existing poles, 16 new 103W LED luminaires, and 8 x 1,5m outreach in total

ZONE 4 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 Med 600 Vehicles
Luminaires Used	14 x 174W (Arrangement: Median)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	1,5m arched
Comment	Add 3 poles between the 4 existing poles, 14 new 174W LED luminaires, and 8 x 1,5m outreach in total



ZONE 5 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 Med 600 Vehicles
Luminaires Used	12 x 174W (Arrangement: Median)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	1,5m arched
Comment	Add 3 poles between the 3 existing poles, 12 new 174W LED luminaires, and 6 x 1,5m outreach in total

ZONE 6 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 Med 600 Vehicles
Luminaires Used	12 x 174W (Arrangement: Median)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	1,5m arched
Comment	Add 3 poles between the 3 existing poles, 12 new 174W LED luminaires, and 6 x 1,5m outreach in total



20.2.14 Lynedoch Traffic Light Intersection

The relevant traffic light junction, commonly referred to as the Lynedoch Traffic Intersection, is located where the Annandale Road, and Baden Powell Drive intersects. The GPS coordinates for the location is -33.98258749670518, 18.770941055821474, and have been divided into zones (see Figure 25 below) following specific criteria and requirements:



Figure 25

ZONE 1 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 No Med 300 Vehicles
Luminaires Used	6 x 103W (Arrangement: Side)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	1.5m Arched
Comment	Add 4 poles between the 2 existing poles, 6 new 103W LED luminaires, and 6 x 1.5m outreach in total



ZONE 2 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 No Med 300 Vehicles
Luminaires Used	5 x 76W (Arrangement: Side)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	1.5m Arched
Comment	Add 5 poles, 5 new 76W LED luminaires, and 5 x 1.5m outreach in total

ZONE 3 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 Med 600 Vehicles
Luminaires Used	8 x 103W (Arrangement: Median)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	1,5m arched
Comment	Add 2 poles between the 2 existing poles, 8 new 103W LED luminaires, and 4 x 1,5m outreach in total

ZONE 4 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 Med 600 Vehicles
Luminaires Used	8 x 174W (Arrangement: Median)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	1,5m arched
Comment	Add 2 poles between the 2 existing poles, 8 new 174W LED luminaires, and 8 x 1,5m outreach in total



ZONE 5 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 Med 600 Vehicles
Luminaires Used	8 x 174W (Arrangement: Median)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	1,5m arched
Comment	Add 2 poles between the 2 existing poles, 8 new 174W LED luminaires, and 4 x 1,5m outreach in total

ZONE 6 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 Med 600 Vehicles
Luminaires Used	8 x 103W (Arrangement: Median)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	1,5m arched
Comment	Add 2 poles between the 2 existing poles, 8 new 103W LED luminaires, and 4 x 1,5m outreach in total



20.2.15 Polkadraai Traffic Light Intersection

The relevant traffic light junction, commonly referred to as the Polkadraai Traffic Intersection, is located where the Polkadraai Road, and Baden Powel Drive intersects. The GPS coordinates for the location is -33.95035980456896, 18.809222199999994, and have been divided into zones (see Figure 26 below) following specific criteria and requirements:



Polkadraai Traffic Intersection

Figure 26

ZONE 1 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 No Med 300 Vehicles
Luminaires Used	12 x 103W (Arrangement: Both Sides)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 2 poles between the 4 existing poles, 6 poles on the other side of the road, 12 new 103W LED luminaires, and 12 x 300mm outreach in total



ZONE 2 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 No Med 300 Vehicles
Luminaires Used	10 x 76W (Arrangement: Both Sides)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 2 poles between the 3 existing poles, 5 poles on the other side of the road, 10 new 76W LED luminaires, and 10 x 300mm outreach in total

ZONE 3 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 Med 600 Vehicles
Luminaires Used	12 x 103W (Arrangement: Both Sides)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 3 poles between the 3 existing poles on both sides of the road, 12 new 103W LED luminaires, and 12 x 300mm outreach in total

ZONE 4 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 Med 600 Vehicles
Luminaires Used	8 x 174W (Arrangement: Both Sides)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 2 poles between the 2 existing poles on both sides, 8 new 174W LED luminaires, and 8 x 300mm outreach in total



ZONE 5 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 Med 600 Vehicles
Luminaires Used	8 x 174W (Arrangement: Both Sides)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 2 poles between the 2 existing poles on both sides, 8 new 174W LED luminaires, and 8 x 300mm outreach in total

ZONE 6 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 Med 600 Vehicles
Luminaires Used	12 x 103W (Arrangement: Both Sides)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 3 poles between the 3 existing poles on both sides of the road, 12 new 103W LED luminaires, and 12 x 300mm outreach in total

20.2.16 Annandale Traffic Light Intersection

The relevant traffic light junction, commonly referred to as the Annandale Traffic Intersection, is located where the Annandale Road, and R44 intersects. The GPS coordinates for the location is -33.9968777734984, 18.826137704285777, and have been divided into zones (see Figure 27 below) following specific criteria and requirements:



Figure 27

ZONE 1	Provision has been included for LED lighting replacement and pole additions ensuring compliance:		
	Speed limit	80km/h	
	Road Class	A2 No Med 300 Vehicles	
	Luminaires Used	10 x 76W (Arrangement: Both Sides)	
	Pole Height	12m MH (max)	
	Rake Angle	0°	
	Outreach	300mm	
	Comment	Add 5 poles each on both sides of the road, 10 new 76W LED luminaires, and 10 x 300mm outreach in total	



ZONE 2 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 No Med 300 Vehicles
Luminaires Used	6 x 103W (Arrangement: Both Sides)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 1 pole between the 2 existing poles, 3 poles on the other side of the road, 6 new 103W LED luminaires, and 6 x 300mm outreach in total

ZONE 3 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 No Med 100 Vehicles
Luminaires Used	6 x 103W (Arrangement: Both Sides)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 1 pole between the 2 existing poles, 3 poles on the other side of the road, 6 new 103W LED luminaires, and 6 x 300mm outreach in total

ZONE 4 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 No Med 100 Vehicles
Luminaires Used	10 x 76W (Arrangement: Both Sides)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 5 poles each on both sides of the road, 10 new 76W LED luminaires, and 10 x 300mm outreach in total



ZONE 5 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 Med 600 Vehicles
Luminaires Used	8 x 174W (Arrangement: Median)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 4 poles between the 2 existing poles, 8 new 174W LED luminaires, and 8 x 300mm outreach in total

ZONE 6 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 Med 600 Vehicles
Luminaires Used	8 x 174W (Arrangement: Median)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 4 poles between the 2 existing poles, 8 new 174W LED luminaires, and 8 x 300mm outreach in total

ZONE 7 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 Med 600 Vehicles
Luminaires Used	8 x 174W (Arrangement: Median)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 4 poles between the 2 existing poles, 8 new 174W LED luminaires, and 8 x 300mm outreach in total



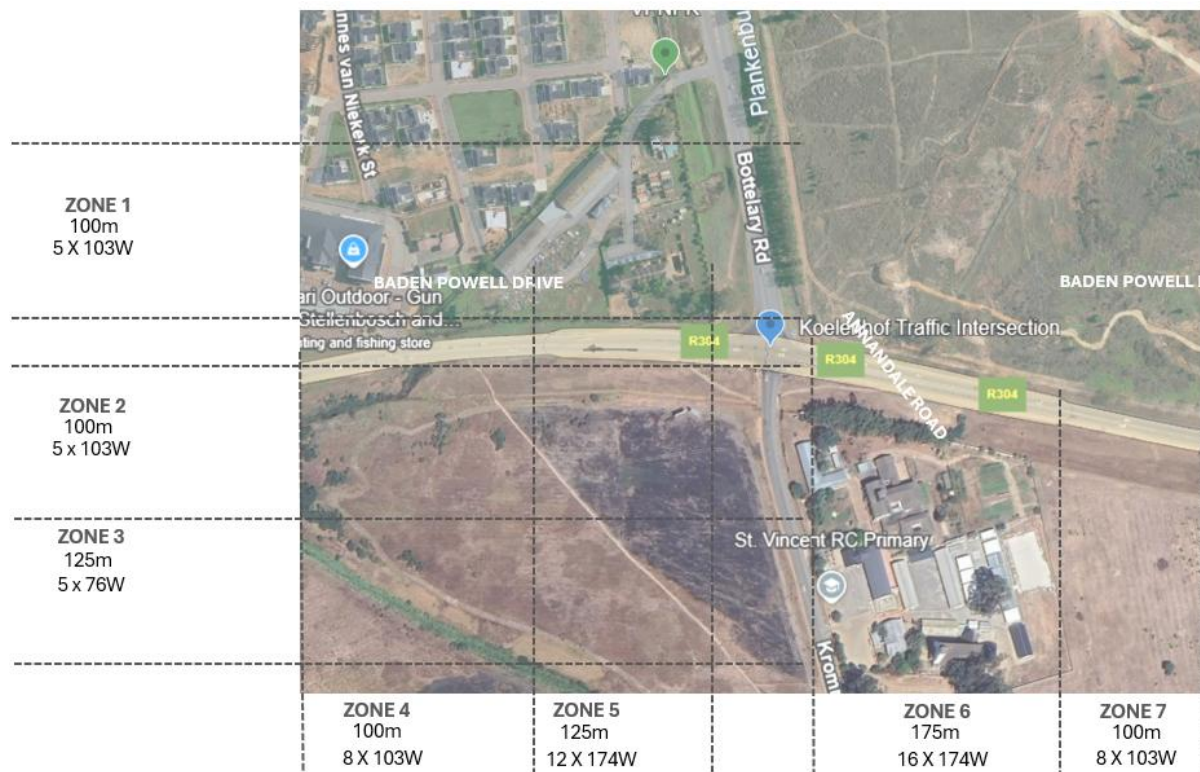
ZONE 8 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 Med 600 Vehicles
Luminaires Used	8 x 174W (Arrangement: Median)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 4 poles between the 2 existing poles, 8 new 174W LED luminaires, and 8 x 300mm outreach in total



20.2.17 Koelenhof Traffic Light Intersection

The relevant traffic light junction, commonly referred to as the Koelenhof Traffic Intersection, is located where the Bottelary Road, and R310 intersects. The GPS coordinates for the location is -33.874729638422586, 18.813822571164298, and have been divided into zones (see Figure 28 below) following specific criteria and requirements:



Koelenhof Traffic Intersection

Figure 28

ZONE 1 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 No Med 300 Vehicles
Luminaires Used	5 x 103W (Arrangement: Side)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 5 poles each on the road side with no trees, 5 new 103W LED luminaires, and 5 x 300mm outreach in total



ZONE 2 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 No Med 100 Vehicles
Luminaires Used	5 x 103W (Arrangement: Side)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 5 poles on the road side, 5 new 103W LED luminaires, and 5 x 300mm outreach in total

ZONE 3 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 No Med 100 Vehicles
Luminaires Used	5 x 76W (Arrangement: Side)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 5 poles on the road side, 5 new 76W LED luminaires, and 5 x 300mm outreach in total

ZONE 4 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 No Med 100 Vehicles
Luminaires Used	8 x 103W (Arrangement: Both Sides)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 4 poles each on both sides of the road, 8 new 103W LED luminaires, and 8 x 300mm outreach in total



ZONE 5 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 Med 600 Vehicles
Luminaires Used	12 x 174W (Arrangement: Both Sides)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 6 poles each on both sides of the road, 12 new 174W LED luminaires, and 12 x 300mm outreach in total

ZONE 6 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 Med 600 Vehicles
Luminaires Used	16 x 174W (Arrangement: Both Sides)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 8 poles each on both sides of the road, 16 new 174W LED luminaires, and 16 x 300mm outreach in total

ZONE 7 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 No Med 100 Vehicles
Luminaires Used	6 x 103W (Arrangement: Both Sides)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 6 poles each on both sides of the road, 6 new 103W LED luminaires, and 6 x 300mm outreach in total

20.2.18 Klapmuts Traffic Light Intersection

The relevant traffic light junction, commonly referred to as the Klapmuts Traffic Intersection, is located where the R44 Adam Tas Road, and R101 Old Paarl Road intersects. The GPS coordinates for the location is -33.80370273762174, 18.872472200000004, and have been divided into zones (see Figure 29 below) following specific criteria and requirements:

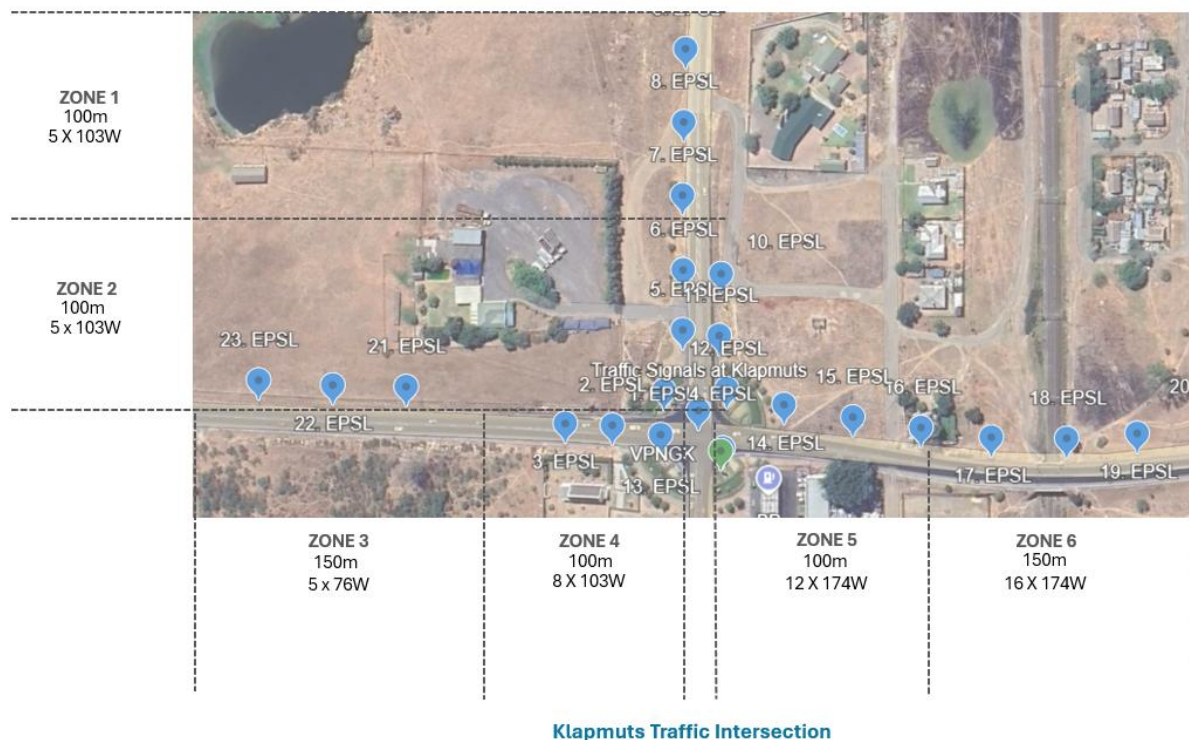


Figure 29

ZONE 1 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 No Med 100 Vehicles
Luminaires Used	5 x 103W (Arrangement: Side)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 5 poles, 5 new 103W LED luminaires, and 5 x 300mm outreach in total



ZONE 2 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 No Med 100 Vehicles
Luminaires Used	5 x 174W (Arrangement: Side)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 5 poles on the road side, 5 new 103W LED luminaires, and 5 x 300mm outreach in total

ZONE 3 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 No Med 600 Vehicles
Luminaires Used	12 x 103W (Arrangement: Both Sides)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 6 poles along one side, and add 3 poles to the existing 3 poles on the other side, 12 new 103W LED luminaires, and 9 x 300mm outreach in total

ZONE 4 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 No Med 600 Vehicles
Luminaires Used	10 x 174W (Arrangement: Both Sides)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 5 poles along one side, and add 2 poles to the existing 3 poles on the other side, 10 new 103W LED luminaires, and 10 x 300mm outreach in total



ZONE 5 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 No Med 600 Vehicles
Luminaires Used	10 x 174W (Arrangement: Both Sides)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 5 poles along one side, and add 2 poles to the existing 3 poles on the other side, 10 new 103W LED luminaires, and 10 x 300mm outreach in total

ZONE 6 Provision has been included for LED lighting replacement and pole additions ensuring compliance:

Speed limit	80km/h
Road Class	A2 No Med 600 Vehicles
Luminaires Used	12 x 103W (Arrangement: Both Sides)
Pole Height	12m MH (max)
Rake Angle	0°
Outreach	300mm
Comment	Add 6 poles along one side, and add 3 poles to the existing 3 poles on the other side, 12 new 103W LED luminaires, and 9 x 300mm outreach in total



20.2.19 Access to the sites

The contractor shall meet the necessary requirements from Stellenbosch Municipality in terms of access and security clearance. This shall include all the necessary inductions and medicals as well as security access cards and registrations required by Stellenbosch Municipality if and where applicable.

The contractor shall not access the site until formally instructed by Stellenbosch Municipality to do so.

20.2.20 General Technical Requirements and Conditions

No.	Description	Unit	Requirement / Condition
1	Nominal System Voltage	V	400
2	Maximum System Voltage	V	440
3	Lightning Impulse Withstand Voltage	kV	2
4	Creepage Distance	mm/kV	31
5	Fault Level (Design)	kA	10
6	Altitude above sea level	m	Up to 68
7	Maximum Ambient air temperature range	°C	40
8	Minimum Ambient air temperature range	°C	-5
9	Highest average daily maximum	°C	40
10	Average daily temperature	°C	35
11	Minimum Humidity (relative)	%	10
12	Maximum Humidity (relative)	%	90
13	Lightning ground flash density	flashes per km ² /year	1
14	Pollution		Medium
15	Climatic conditions		Winter rain

20.2.21 Construction Program

It should be noted that the project will be executed over three (3) Municipal Financial Years. This will be discussed in more detail with the appointed contractor.

The Contractor shall submit a construction program to the Engineer within 14 days after acceptance of the contract. The program shall be done in Microsoft Project and shall list all activities and resources of the project.

The contractor shall also submit a high-level program with the tender.

The contract period will be determined by the successful bidder and scheduled in such a way that the entire scope of works is completed within the three year period ending June 2028. Programmes must include lead times for materials

The Contractor shall also together with the program, submit cash flow projections for the project based on the summary of costs in the bill of quantities.

The Contractor shall not deviate from the program unless under instruction from the Engineer or for other valid reasons. Should the Contractor fall behind schedule for reasons other than that out of his control, the Contractor shall provide additional resources at his own expense. The Contractor shall do proper planning to optimise the utilisation of resources and shall use any opportunity to get ahead of schedule where possible.



20.2.22 Construction Camp

The Contractor shall establish a construction site camp at appropriate locations to ensure an effective and efficient construction programme that will ensure completion of the project within the three year period. The sites will be established upon appointment.

The construction site camp shall make provision for office accommodation for meetings held on site and other basic administrative requirements. In addition, the contractor shall allow for his own preliminaries and/or overhead costs as required for the execution of the contract.

The camp shall also be used for the establishment of facilities on site such as plant, shed, water, electricity, lighting, toilets etc. The Contractor shall make the necessary arrangements for all water and electricity required for the execution of the works. All costs will be for the contractor's account.

The site office shall have facilities for site meetings such as a large table and chairs. The site shall also have a 1.8m diamond mesh fenced camp for storing material. Area lighting shall also be present on site at night, manned with security. The Contractor shall be responsible for keeping the area allocated to him neat, tidy and clean. On completion of the contract all temporary buildings, roofs, fencing, etc., shall be removed from the site at the Contractor's expense and the campsite restored to the original condition and to the satisfaction of the Engineer and the Client.

The Contractor shall include the following in the preliminary and general costs:

- Contractual requirements.
- Operation and maintenance of facilities on site.
- Supervision by suitably qualified & capable personnel
- Crane Truck & Cherry Picker Operator with necessary rigging qualifications
- Safety, Health, Environment and Quality Requirements inclusive of a qualified on site SHEQ Officer
- Medicals and Induction.
- Scanning of existing services and marking it up on relevant documentation.
- Safely & Reliably Transport personnel to site(s).
- Plant Hire.
- Company and head office overhead costs.
- Other time related items.
- Security Costs
- NQF Level 4 / N3 Qualified on site Installations Electrician with 3 yrs minimum practical experience and trade test, as well as Installation Rules 1&2 passed and registration with DoL & 3 phase wireman's license

The following shall also apply during the construction period:

- The Contractor shall provide a Health and Safety Plan before construction starts.
- The Contractor shall ensure that he/she conforms to the Safety, Health, Environmental and Quality requirements.
- Personal Protective Equipment (PPE) shall be worn at all times by any person entering the site. The contractor shall ensure that the correct PPE is worn for specific activities on site.
- The contractor shall ensure that good housekeeping is maintained on site throughout the duration of the project.
- A visitor register shall also be kept on site.
- The contractor shall provide, where necessary, induction to all visitors and shall provide basic Personal Protective Equipment such as hard hats and reflective clothing to visitors not in possession thereof.
- A site file shall be kept on site with all the necessary documentation such as appointments of workers for different specialised tasks such as crane operation, safety supervisor etc. Minutes of safety meetings, risk assessments etc. shall also be kept in the file. All other quality checklists and Environmental Management plans shall be in the file together with the Health and Safety plan of the Contractor.



- All construction work shall be done according to the Construction Regulations.
- All equipment test and calibration certificates shall be kept up to date and valid for the duration of the project.
- All authorizations, working permits, inductions and medicals, access permits etc. shall be kept up to date and valid for the duration of the project.
- All personnel, including permanent staff, temporary staff, subcontractors, suppliers etc. entering the site shall be under the contractor's responsibility and shall be treated as contracting staff and the contractor shall ensure that they adhere to all the requirements in terms of access, working permits, authorizations, medicals and inductions, security clearance etc. while on site.
- The contractor to have a site diary which will be updated daily with construction progress, incidents, delays etc. This will form part of the monthly progress payment evaluations.

The following shall further apply to the Works:

- The Scope of "Works" is an extension of the drawings, specifications and bills of quantities listed. The Contractor shall notify the Engineer of any discrepancies before commencement of the works.
- The Contractor is required to supply all material, labour, plant, equipment, loose tools, consumables and transport for the duration and completion of the project unless alternatively instructed to use Stellenbosch Municipality Free Issue Material such as meters, luminaires, electrical cable, kiosks, lamp poles etc. The contractor shall be notified timeously if such an event would occur.
- The Contractor is required to supply all consumables, ancillary, auxiliary requirements for the installation, termination, and fixing of materials, and/or equipment as part of the general and overall scope of work expectation in regard to this bid document. It shall be deemed that all prices (rates) provided in the bid BOQ shall include for all these items and requirements not specifically quantified, and/or qualified, to complete the scope of work and to ultimately ensure that the works are whole, complete and functional.
- Loose tools shall include but is not limited to spades, pickaxes, drills, screwdrivers, electrical insulation testers and meters etc
- The Contractor shall provide all costs for the execution of the works of the complete project in the Bill of Quantities.
- The Contractor must immediately notify the Employer in writing of scope and site variations.
- The Contractor will report all obstacles on site that could impact negatively on time and cost in writing to the Employer.
- Contractor to clear and de-establish total site on completion of proposed works.
- Contractor is required to clear and cart away rubble and surplus works. Rubble shall be disposed of at an approved dumping site. Old equipment such as isolators, steelwork etc. shall be returned to Stellenbosch Municipality.



20.2.23 Surveyor Requirements

This section will provide information with regard to the expectation of the works that the surveyor would need to perform, complete and deliverables expected as part of the contractor's scope of work.

20.2.23.1 General Requirements for the Surveyor requirements.

In the following section, images are provided as reference for the surveyor scope expectations. It shall be noted that the surveyor shall be required to provide survey data (indicated in the table below) for each of the relevant areas identified within this bid document, and that forms part of the scope of work, as follows:

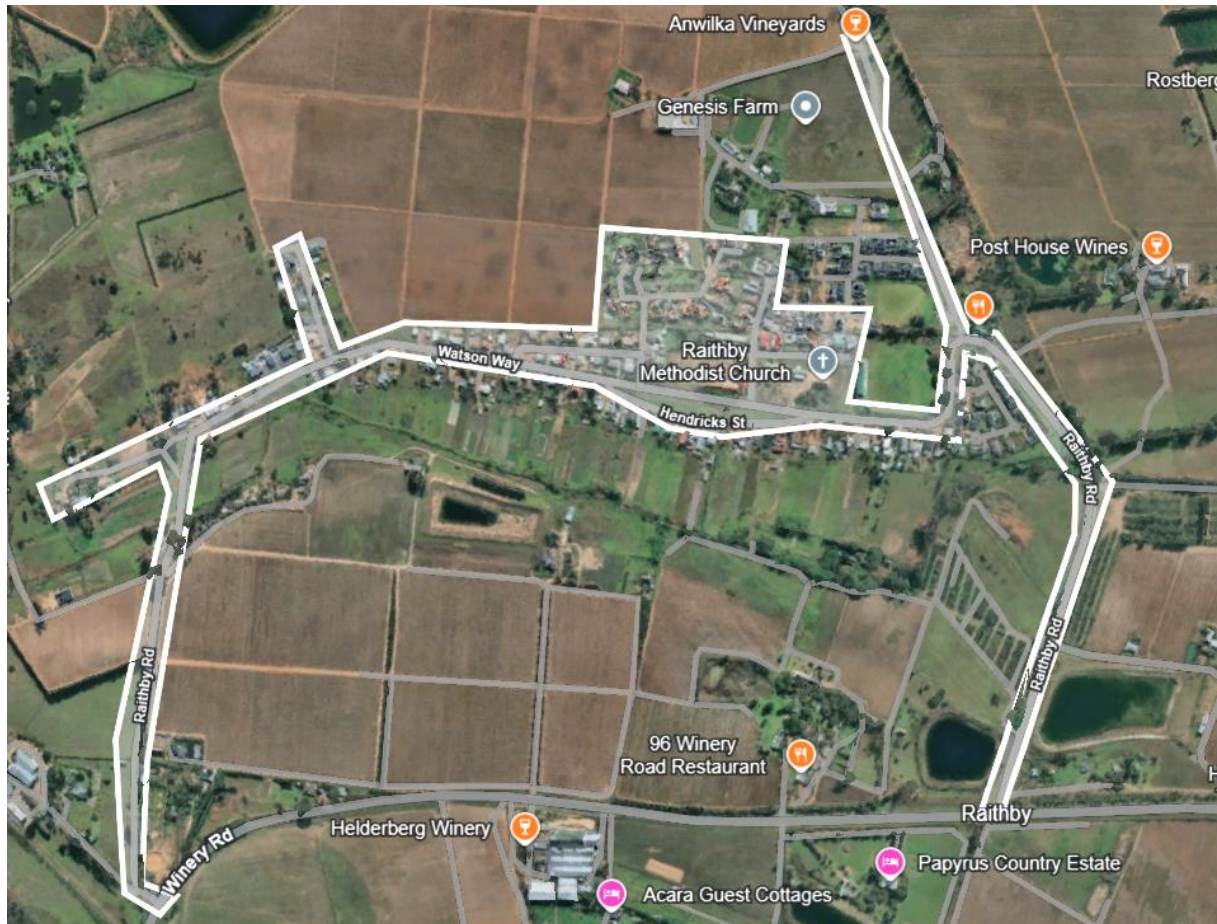
All traffic road areas within the indicated battery limit(s) – tarred and/or gravel roads	All road reserve areas (clearly indicating the sidewalk area up to road curb / edge, i.e. road curb / edge up to property boundary)
All street names	All electrical kiosks and miniature substations
All data within this table should be able to be reference to GPS coordinates within a DWG and DXF file by the surveyor.	All data within this table should be able to be reference to XY coordinates within a DWG and DXF file by the surveyor.

It shall be noted to the bidder / tenderer that the survey data mentioned above, shall be reflected on all documentation / drawings from the surveyor in hard and soft (DWG & DXF format) to the engineer.

With regards to the expectations from the surveyor discussed in this document, the battery limits for the surveying requirements can be provided, and indicated, as per the following images, and needs to be considered by the bidder / tendered as part of the bidding process:

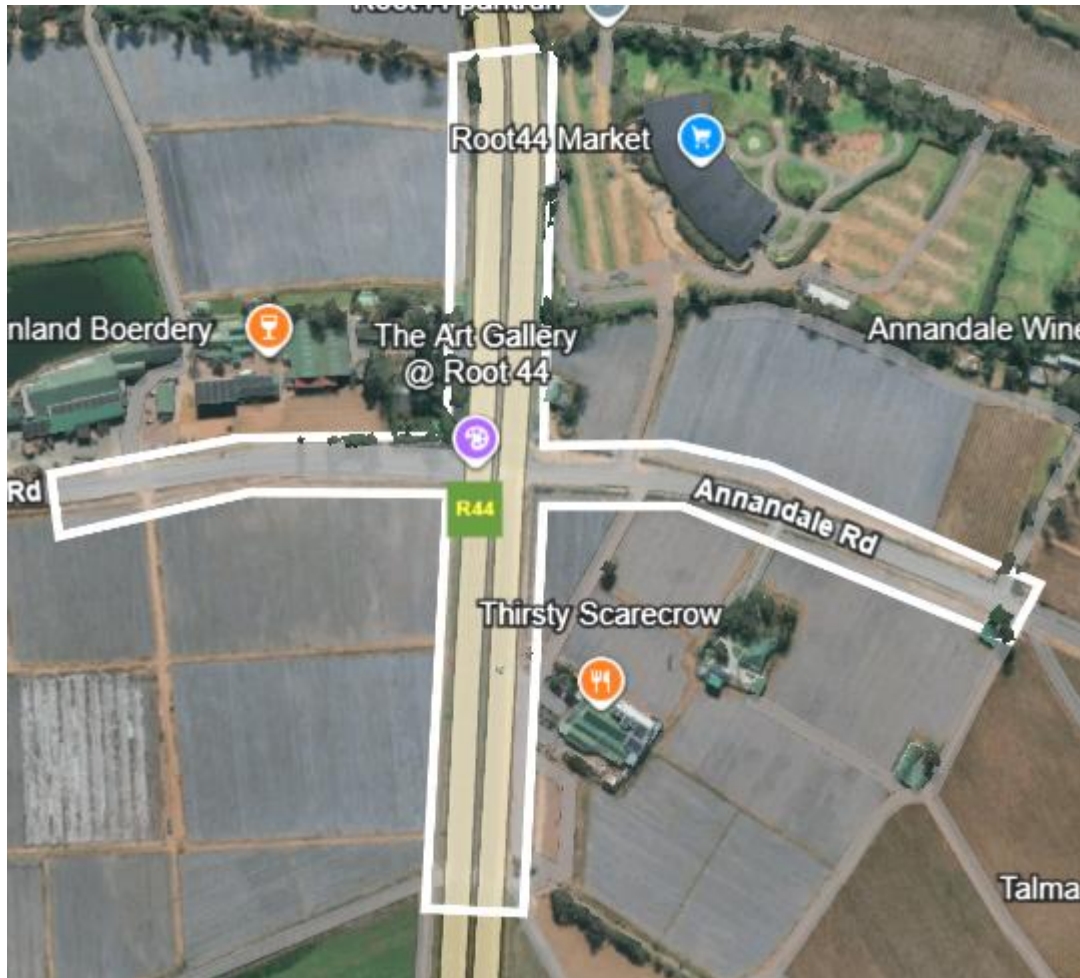


Village: Raithby
 Survey Area: District A



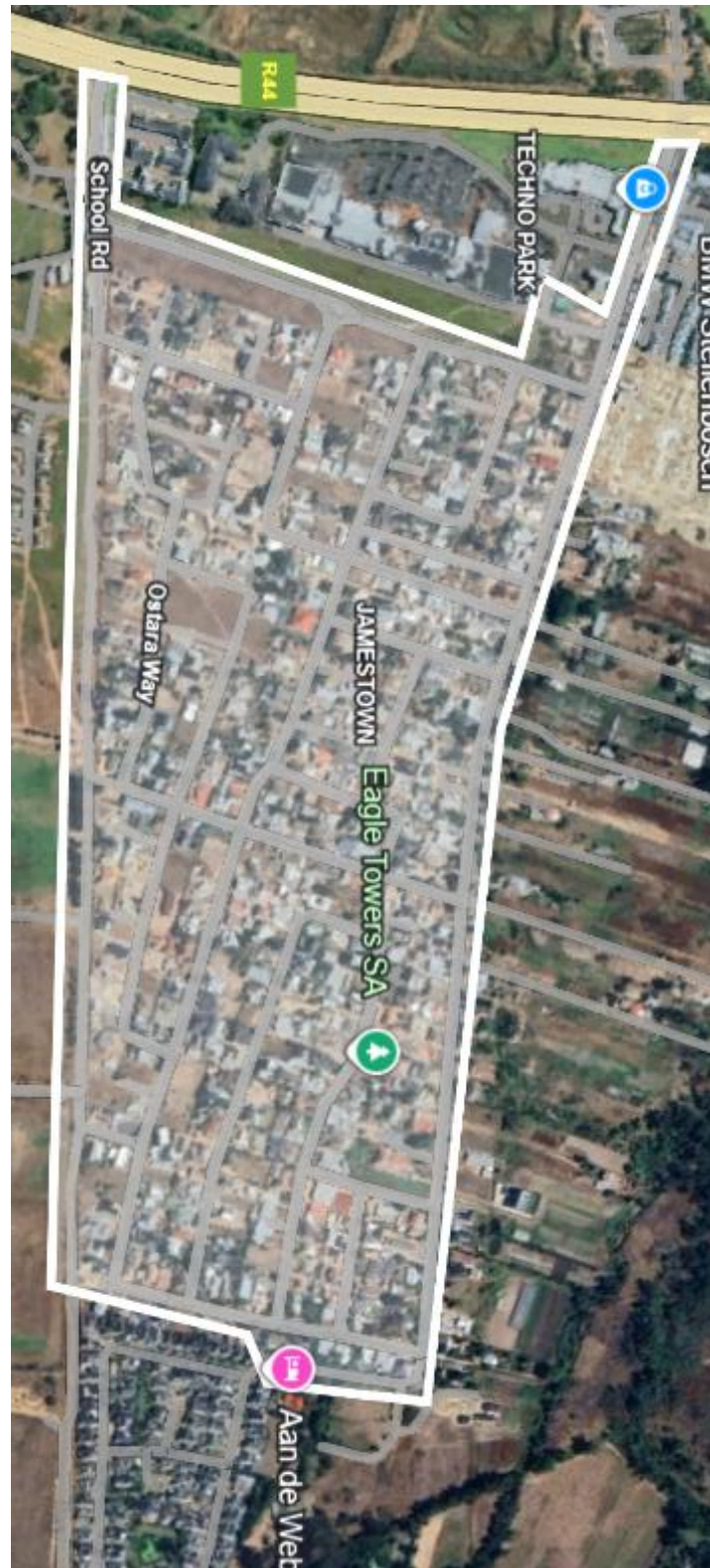


Traffic Light Intersection: R44 / Annandale
 Survey Area: District A





Village: Jamestown
Survey Area: District A





Provincial Road: MR177 km 28.78 to km 32.25
 Survey Area: District A





Traffic Light Intersection: Vlaeberg
Survey Area: District A





STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Traffic Light Intersection: Baden Powell / Annandale
Survey Area: District A





Traffic Light Intersection: Polkadraai
 Survey Area: District A



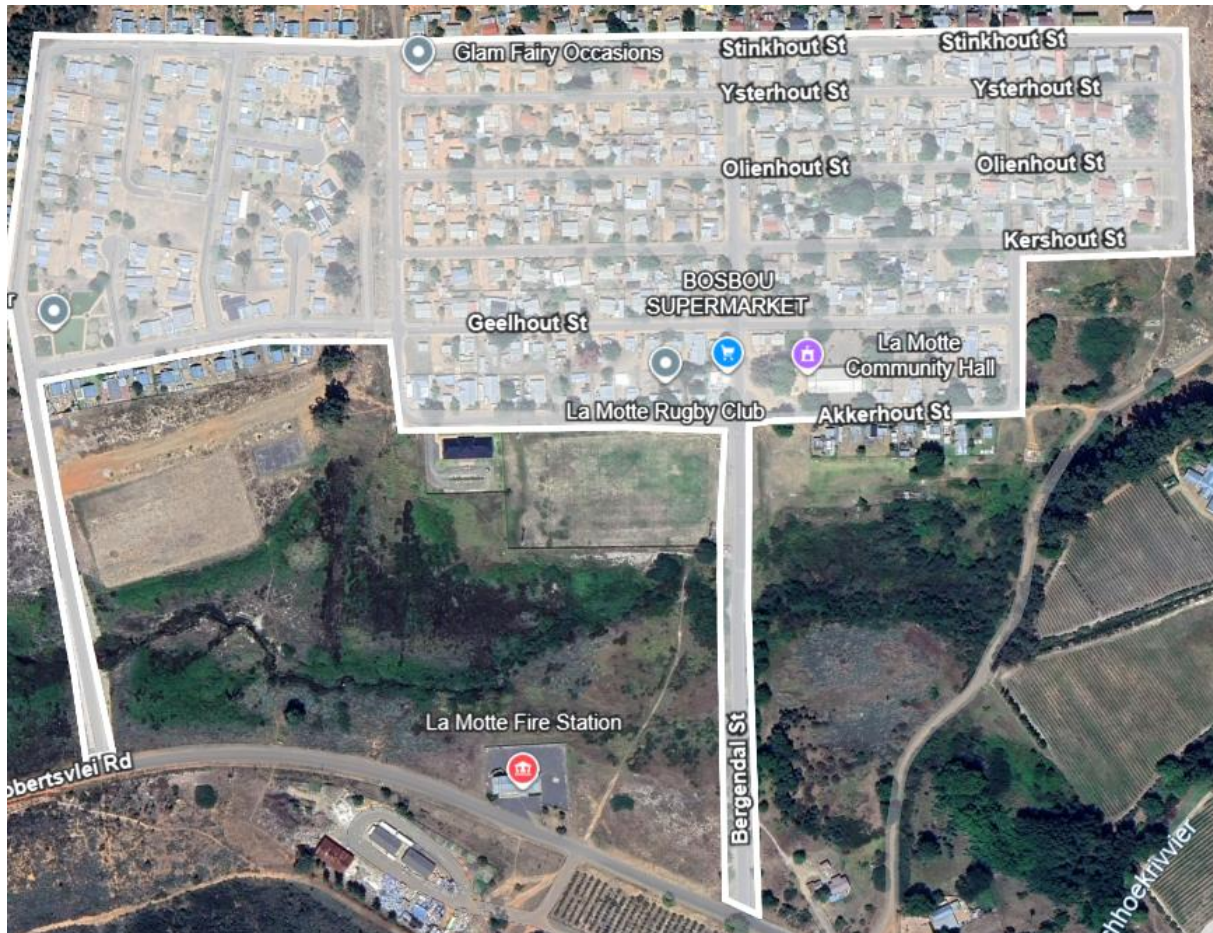


Village: Kylemore
 Survey Area: District B





Village: La Motte
 Survey Area: District B





Village: Lanquedoc
 Survey Area: District B





STELLENBOSCH
 STELLENBOSCH • PNIEL • FRANSCHHOEK
 MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Provincial Road: MR191 km 19.64 to km 23.71
 Survey Area: District B





Provincial Road: MR172 km 10.43 to km 13.34
 Survey Area: District B





STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

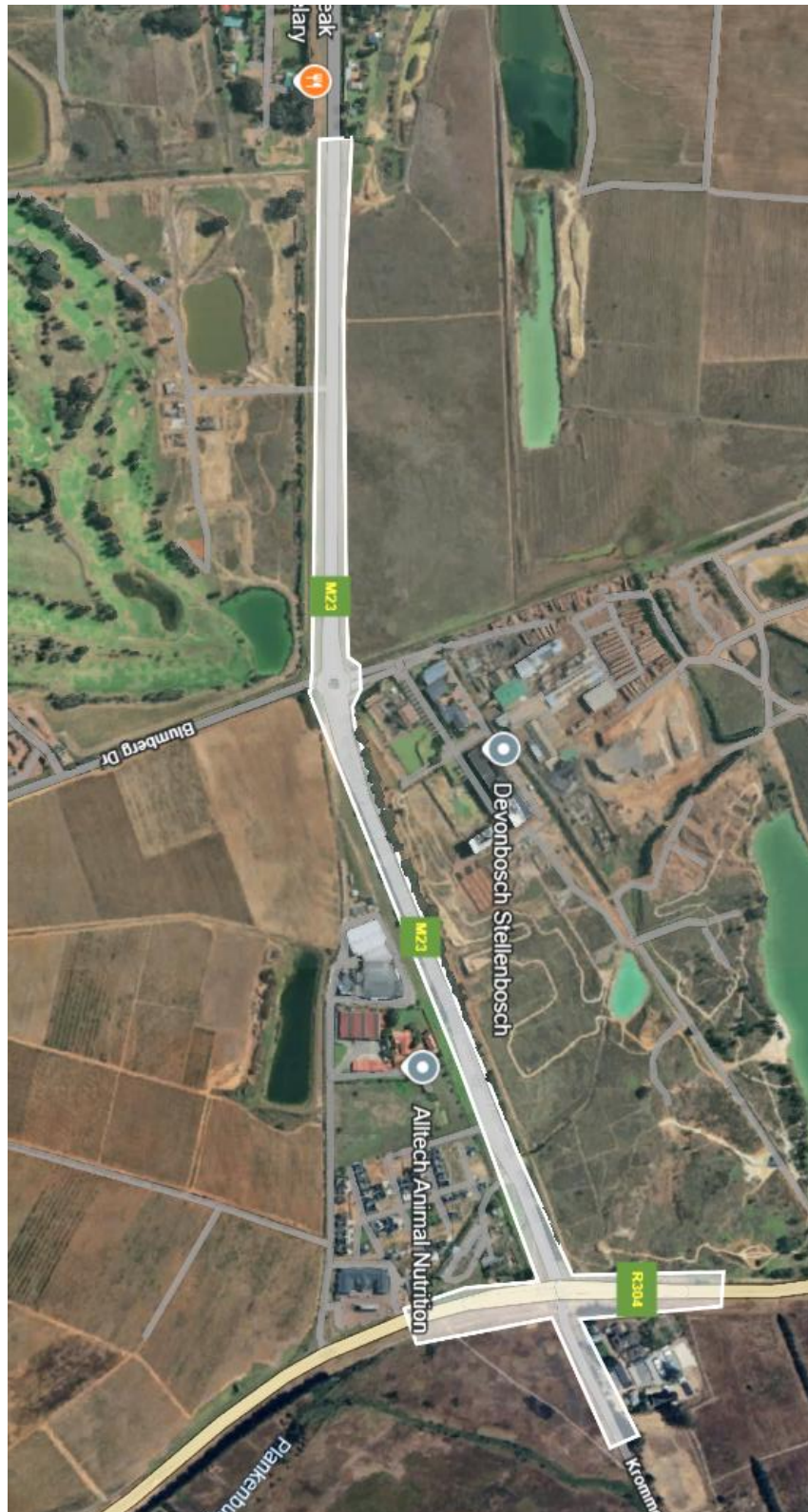
Village: Klapmuts
Survey Area: District C





STELLENBOSCH
 STELLENBOSCH • PNIEL • FRANSCHHOEK
 MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Provincial Road: MR187 km 13.00 to km 14.71
 Survey Area: District C



Provincial Road: MR172 / MR191 km 15.76 T-Section
 Survey Area: District C





20.2.23.2 Anticipated Workflow between the surveyor (the contractor), and the engineer for a work area

Stage 1: Within 20 calendar days of the formal appointment of the successful bidder / tendered it shall be expected that the contractor (with his surveyor) provides the engineer with the relevant surveyed data (in DWG and DXF) format. On receipt of the mentioned data, by the engineer, the engineer shall confirm to the contractor if the data is of a satisfactory level and format. If the engineer finds the data unsatisfactory, the onus will be on the contractor (and their surveyor) to make the necessary adjustments to meet the engineer's requirements, at no additional cost.

Stage 2: Following Stage 1 (above), once the engineer receives the information, and declares in writing to the contractor (and their surveyor), that the information is to the engineer's satisfaction, will the engineer commence with the final drawings for the project. Once the engineer declares that the information from the survey data is satisfactory, shall the engineer have 30 calendar days to finalise the relevant drawings.

Stage 3: Following Stage 2 (above), will the engineer provide the contractor (and their surveyor) with the final streetlight drawings in hard-copy and soft (DWG and PDF) copy. The onus will then be on the contractor (and their surveyor) to determine coordinates (as applicable) for equipment, and/or materials, which need to be installed and/or to be relocated (as applicable).

Special note to bidder / tenderer: The process, and stages above, shall not be utilised by the successful bidder / tenderer to claim for any potential delays to the project, or extension of time, for any portion, or overall portion, of the works discussed within this bid document. The process, and stages above, shall be considered by the bidder / tenderer as part of their bid submission, in preparation of potential project programs and/or schedules, and hence forth no extension of time, or delays to the processes of the project, shall be entertained by the engineer, or the client (Stellenbosch Municipality) in this regard for the duration of the project. The process, and stages above, shall not prevent or limit the successful bidder's/tenderer's in completing their scope of work expectations (confirming scope quantities, identifying scope discrepancies, placing orders for materials, etc.) as the project progresses, all the while adhering to necessary protocols, and/or other processes, discussed within this bid document.

20.2.24 As Built Drawings and Documentation

- The contractor shall mark up all the drawings after completion of the project and shall submit three sets of As-built drawings for the scope of works etc. after completion. The contractor shall also submit all drawings in PDF, DWG and DXF formats on a CD and USB-stick to both the engineer and the client.
- The contractor shall also provide three files in hard copies as well as three soft copies on CD, and USB-stick after completion of the project which shall include, but not limited to, all software files, operating manuals, service and maintenance manuals, drawings including scheme diagrams, software packages, test reports, settings, COCs etc. All diagrams shall also be in DWG and DXF format. All programs and data files shall also be in the original file format. All documentation, drawings, programs, data files etc. shall together with the original file format also be in PDF format.



20.2.24 Material Inspections and approvals

No.	Material Description	Pre-Approval Requirement	Approval and Inspection Requirement
1a	3CR12 Kiosk, populating products, ready Board & mounting back-plate	Manufacturing drawings, and proposed single line diagram, to be approved by the Engineer and Stellenbosch Municipality prior to manufacturing. Sample to be provided/presented to Engineer for approval.	Kiosk to be inspected once delivered to site by Engineer and Stellenbosch Municipality Representative.
1b	Poly Kiosk, populating products, ready Board & mounting back-plate	Manufacturing drawings, including schematics, to be approved by the Engineer and Stellenbosch Municipality prior to manufacturing.	Factory Inspection by the Engineer and Stellenbosch Municipality Representatives.
2	Galvanised steel poles, arms and spigots	Manufacturing drawings, to be approved by the Engineer and Stellenbosch Municipality prior to manufacturing. Sample to be provided/presented to Engineer for approval.	Galvanised steel poles, arms and spigots to be inspected once delivered to site by Engineer and Stellenbosch Municipality Representative.
3	Wooden poles, arms and spigots	Manufacturing drawings, to be approved by the Engineer and Stellenbosch Municipality prior to manufacturing. Sample to be provided/presented to Engineer for approval.	Wooden poles, arms and spigots to be inspected once delivered to site by Engineer and Stellenbosch Municipality Representative.
4	Silicone- and Aluminium cable	Datasheets to be approved by the Engineer and Stellenbosch Municipality. Sample to be provided/presented to Engineer for approval.	Silicone- and Aluminium cable to be inspected once delivered to site by Engineer and Stellenbosch Municipality Representative.
5	Luminaires	Datasheets to be approved by the Engineer and Stellenbosch Municipality. Sample to be provided/presented to Engineer for approval.	Luminaires inspected once delivered to site by Engineer and Stellenbosch Municipality Representative.



20.2.25 Materials

- All materials to be used on the project shall be new and as per the Specifications and Technical Schedules and shall have a proven track record and support structure in South Africa. This shall be valid for both purchased, and Stellenbosch Municipality Free Issued Stock.

20.2.26 Existing Services and Site Conditions

- The Contractor shall ensure that he is familiar with conditions of access roads and sites as well as subsurface conditions prior to tendering and to include this in his pricing.
- The contractor shall further also before commencement with construction, allow for underground scanning of existing services and shall submit a drawing to the Engineer and shall use the drawing where necessary to prevent damage to existing services.
- The Contractor is required to make all the necessary arrangements with the Local Authorities for road crossing structures and removal thereof, e.g. Removal of pavements, thrust boring under roads etc.

20.2.27 Construction Methodology

The contractor shall before construction submit a proposed construction methodology for the works which shall also include the sequence of events of the project as well as some of the milestones and hold points of the project. The construction methodology shall also be the basis of the construction program.

20.2.28 Licenses

Stellenbosch Municipality shall have the right to disclose documents, drawings etc. to employees, contractors, utilities, Stellenbosch Municipality direct customers etc. for the purpose of repair, modification or enhancement in future.

20.2.29 Standards and Compliance

The contractor shall ensure that all individual plant items comply with the relevant IEC and/or NRS Standards.

20.2.30 Approval of Drawings and Equipment

The contractor shall prepare all manufacturing drawings for materials and equipment and submit it to the Engineer for approval before commencement of any manufacturing of the items. The contractor shall further ensure that all equipment to be used are inter compatible and that the drawings clearly indicate how a specific piece of equipment will be integrated with another piece of equipment.

These drawing sets shall include, but not limited to the following:

- Manufacturing drawings for the concrete pole, arm and spigot
- Manufacturing drawings for the wooden pole, arm and spigot
- Manufacturing drawings for the luminaires
- Manufacturing drawings for the populated kiosk and the mounting back-plate, including a wiring diagram (see example of wiring diagram below in Figure 30)

The contractor may only start with the manufacturing of equipment once all the drawings have been signed off by the Engineer



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

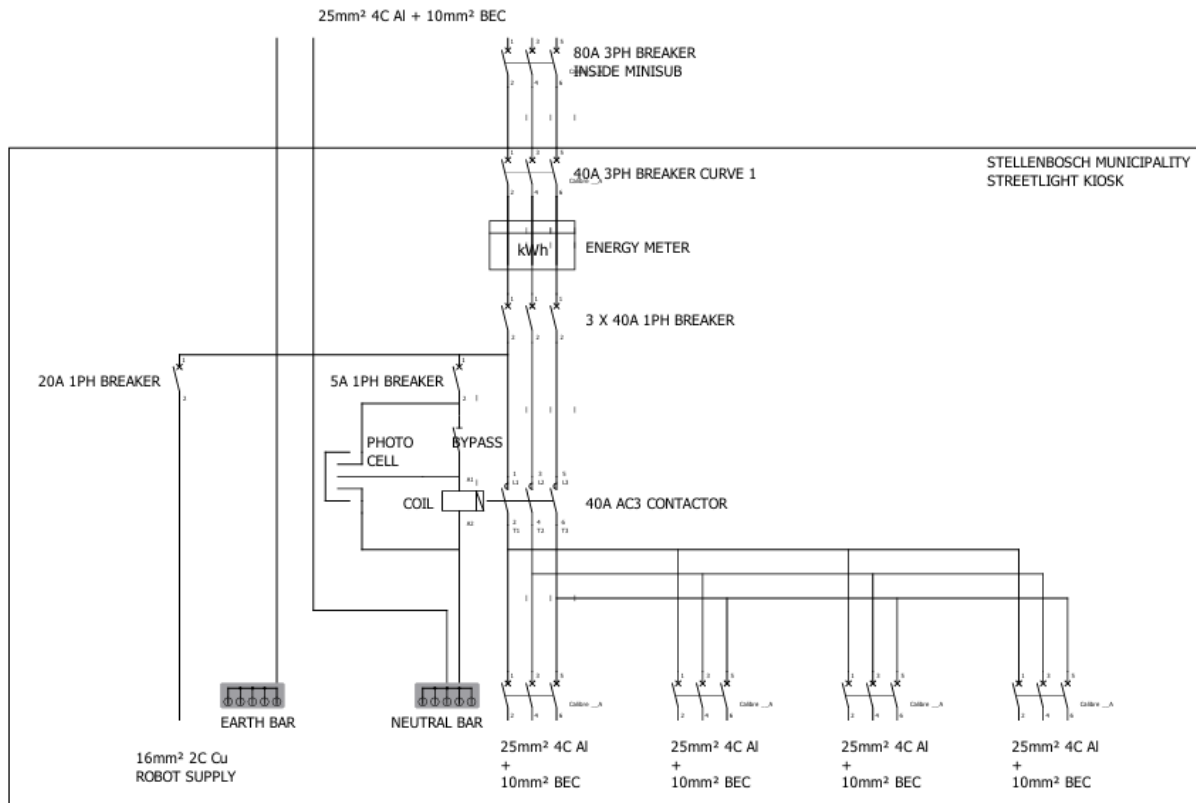


Figure 30



20.3 STANDARDS

The product, management and installation shall comply with:

Origin	Number	Description
IEC	5502	Information technology equipment. Radio disturbance characteristics
IEC	55015	Limits and methods of measurements of radio disturbance characteristics of electrical lighting and similar equipment
IEC	62051	Electricity Metering
IEC	60068-2-27	Environmental Testing: Shock
IEC	60068-2-6	Environmental Testing: Vibration
IEC	60598-1	Luminaires – Part 1: General requirements and tests
IEC	60598-2-3	Luminaires – Part 2: Particular requirements Section 3
IEC	60598-2-3	Luminaires for road and street lighting
IEC	61000-4-5	Electromagnetic compatibility (EMC) - Surge immunity test
IEC	62052-11	Electricity metering equipment-General requirements, tests and test conditions Part 11 Metering Equipment
IEC	62053-21	Electricity metering equipment-Particular requirements Part 21 Static meters for AC active energy (classes 0,5, 1 and 2
ISO	4762	Hexagon socket head cap screws
ISO	14001:2004	Environmental Management System
ISO	9001:2008	Quality Management System
OHS	ACT	Occupational Health and Safety Act and regulations 1.2.13
OHS	18001:2007	Occupational Health & Safety Management System
NRS	056 Part 1	Service Distribution Boxes-Meter Kiosks and Distribution Kiosks Part 1: Low Voltage non-steel meter kiosks for use in underground networks
SABS	657	Steel tubes for non pressure purposes
SABS	1200	Standard Specifications for Civil Engineering Construction
SANS	121	Hot dip galvanized coatings on fabricated iron and steel articles – Specifications and test method
SANS	121	Hot dip galvanized coatings on fabricated iron and steel articles — Specifications and test methods.
SANS	475	Luminaires for interior lighting, streetlighting and floodlighting Performance requirements
SANS	529	Heat-resisting wiring cables
SANS	60529	Degrees of protection provided by enclosures (IP Code)
SANS	61000-3-2	Electromagnetic compatibility (EMC) Part3-2: Limits for harmonic current emission (equipment input current.



SANS 1088	Luminaires entries and spigots
SANS 1507	Electric cables with extruded solid dielectric insulation for fixed installations (300/500V to 1 900/3 300V) Part 3: PVC Distribution cables
SANS 1574	Electric flexible cores, cords and cables with solid extruded dielectric insulation Part 3: PVC insulated cores and cables
SANS 1765	Low Voltage Switchgear and control gear assemblies (distribution boards) with a rated short circuit withstand strength up to and including 10kA
SANS 60529	Degrees of protection provided by enclosures (IP Code)
SANS ARP035:2014	Guidelines for the installation and maintenance of street lighting
SATS 17576:2014	Light-emitting diode products for interior lighting, streetlighting and floodlighting — Performance requirements



20.4 SPECIFICATION

NOTE: To all potential bidders; it shall be noted that in this section of the document the technical specifications/requirements for electrical materials and equipment are provided. Further to the aforementioned, it shall be noted that the technical compliance needs to be marked (indicated) by the bidder/contractor for all specific, and individual sub-item, requirements of the relevant compliance expectation. Failure to do so, as part of the bid/tender submission, shall render the bid unresponsive. It shall further be noted, that should a bidder mark “No” against any of the items for compliance, it shall render the bid unresponsive, as it translates that the bidder will not be able to comply, or meet, the technical requirements (and expectations) of Stellenbosch Municipality in full.

NOTE: To all potential bidders; it shall be noted that the bidder, as part of the bid submission, shall be required to provide an official datasheet for the proposed equipment that the bidder intends to utilize for the relevant project. Further to the aforementioned, it shall be noted that the equipment, and or material, data sheet needs to be provided as part of the final bid submission document by the bidder/contractor. Failure to do so, as part of the bid/tender submission, shall render the bid unresponsive

A3 FOUR QUADRANT ELECTRONIC DEMAND AND ENERGY METERS

A3.1 Scope

This contract calls for the suppliers to submit quotations to supply and deliver three phase four quadrant electronic demand and energy. Meters to be supplied are.

NO	Item description
A3.1.1	Solid State Programmable whole current meters, 400V, 20A -100A
A3.1.2	Plug-in General Packet Radio Services (GPRS) modem with external antenna for Item A3.1.1
A3.1.3	Transformer operated four quadrant programmable meters, 400V, 5A(10A)
A3.1.4	Plug-in General Packet Radio Services (GPRS) modem with external antenna for Item A3.1.3
A3.1.5	Single phase direct connected bi-directional energy meters, 230V, 100A (not prepaid meters)
A3.1.6	Plug-in General Packet Radio Services (GPRS) modem with external antenna for Item A3.1.5

The energy meters to be supplied are required for Large Power Users and commercial use within Stellenbosch Municipality electrical network for the purpose of metering Small Scale Embedded Generation and are to be read remotely via a GPRS modem.

A3.2 Applicable standards

The equipment shall conform in all respects with a relevant national standard. The standards below are applicable to **A3.1.1**, **A3.1.3** and **A3.1.5**

Compliance with standard specifications		YES	NO
a. Watt-hour meters – Alternating Current (AC) electronic meters for active energy	SANS 1799 -2004		
b. Electricity Metering Equipment (AC) – general requirements, test, and test conditions – Part 11: Metering equipment	SANS 62052 Part 11 – 2003		



Compliance with standard specifications		YES	NO
c. Electromechanical meters for active energy (Classes 0.5 1 and 2)	SANS 62053-11. (Part 11)		
d. Static meters for active energy (Classes 0.2S and 0.5S)	SANS 62053-22 (2003). Part 22 Replaced 60687 (1992)		
e. Electricity Metering Equipment (AC) – requirements Part 21: Static meters for active energy (Classes 1 and 2)	SANS 62053 Part 21 – 2003		
f. Electricity Metering – Data exchange for meter reading, tariff and load control – Part 21: Direct local data exchange	SANS 62056 Part 21 2003		
g. Automated Meter Reading for Large Power Users	SANS 473: 2006(NRS 071:2004)		
h. Code of Practice for Electricity Metering	SANS 474: 2006(NRS 057:2005)		

A3.3 Technical specification

A3.3.1 Ratings for item A3.1.1

	Unit	Value	YES	NO
a. Rated Voltage	V _{rms}	230/400		
b. Rated Maximum Amperage	A	100A		
c. System Frequency	Hz	50		
d. Accuracy Class(kWh)		1		
e. Accuracy class(kVArh)		2		

A3.3.2 Ratings for item A3.1.3

	Unit	Value	YES	NO
a. Rated Voltage	V _{rms}	230/400 and 6.53/110(software selectable)		
b. Rated Maximum Amperage	A	5A(10A)		
c. System Frequency	Hz	50		
d. Accuracy Class(kWh)		1		
e. Accuracy class(kVArh)		2		

A3.3.3 Ratings for item A3.1.5

	Unit	Value	YES	NO
a. Rated Voltage	V _{rms}	230V		
b. Rated Maximum Amperage	A	100A		
c. System Frequency	Hz	50		
d. Accuracy Class(kWh)		1		



	Unit	Value	YES	NO
e. Meter Constant (LED flash rate)		1000 imp/kWh		

A3.3.4 Constructional requirements for both item A3.1.1 and A3.1.3

		YES	NO
1. Network and connection type	Three phase 4 wire		
2. Measuring	kW, kWh, kVAr and kVArh all import and export values. Power factor.		
3. Ingress Protection (IP) rating	51 minimum		
4. Meter sealable (terminal cover)	Required		
5. Display	Liquid Crystal Display and be able to display up to 7 digits		
6. Minimum life expectancy	10 years minimum		
7. Terminal arrangement and diameter size	BS5685, 50 mm ² or higher (item 1.1) And 2.5mm ² or higher (item 1.3)		
8. Optical Port (IEC 620556-21)	Required		
9. Auxiliary terminal must be fixed, and no additional attachments must be required	Fixed 6 x Pulse outputs and 4 x input pulses		
10. Communication port	RS 232(RJ12/RJ45) and		
	RS485(RJ12/RJ45)		
11. The meter shall retain the reading in memory in the event of a power failure.			
12. Means of powering the LCD display in the event of a power failure to be included as an optional extra if available.			
13. Meters to be compatible to Automatic Meter Reading. Details of the AMR compatibility shall be specified by the bidder.			
14. The successful bidder must provide the latest version of meter programming software, the complete installation thereof, adequate training and software manuals must be provided without cost prior to the supplying of meters			
15. All meters shall be calibrated at an accredited calibration laboratory and supplied with a calibration certificate.			
16. Failure to provide proof of certification may result in non-compliance on the tender.			
17. The meters must be suitable for surface mounting with front connections.			
18. The meter lower fixing screws shall only be accessible after breaking the terminal cover seal and removing the cover.			
19. A wiring diagram of the connections shall, be fixed to the inside of terminal cover.			

	YES	NO
20. The meters must have internal battery.		
21. The battery lifespan must be at least 3 years.		
22. The following facilities and programmable capabilities shall be provided:		
(a) A sealable manual reset button		
(b) The maximum demand readings must be date and time stamped.		
(c) The period of integration for the maximum demand shall be programmable to accommodate a 5 minute to a 60-minute setting.		
(d) A minimum of four programmable pulse outputs to accommodate kWh, kVAh or (kVARh -lag or lead), integration period reset, and month end reset. The output pulses must be voltage free, capable of switching 230 V AC and must be of an impulse action type .		
23. Time of use (TOU)		
(a) Meters must be fully programmable to accommodate Time-Of-Use (TOU) rates for a minimum of 7 TOU active energy registers which include a totalized energy register.		
(b) Must have a minimum of 4 seasons		
(c) Must have a minimum of 10 tier switches per day		
24. Access to allow for uploading (modification) of tariff schemes shall only be by means of unique passwords.		
25. Display requirements (Must have at least two display modes)		
26. DISPLAY MODE 1 minimum requirements		
1) tariff name		
2) date and time		
3) energy and demand registers		
27. DISPLAY MODE 2 minimum requirements		
1) voltage on each element		
2) current on each element		
3) instantaneous active power		
4) instantaneous reactive power		
5) instantaneous apparent power		
6) instantaneous power factor		
7) instantaneous active power on each element		
28. All items shall be fitted with an internal clock with a time drift of not more than 1 second per day.		
29. The meters must have memory capacity to store at least 4 channels of load profile data (30-minute integration period) for a minimum period of at least four months.		
30. The software to program and access and utilize all available Features and facilities of the meters shall be supplied at no cost. Upgrade software revisions shall be supplied at		



	YES	NO
no cost when it becomes available. This software must be Microsoft windows compatible.		
31. Communication protocol shall be provided to any third party on request for AMR implementation at no charge.		
32. Suppliers could be requested to demonstrate their offered meter's AMR software capability on Council's existing system to determine compatibility. If not, the successful supplier must provide infrastructure at the Bidders cost, to achieve the functionality.		
33. Makings and labeling shall be according to the relevant standard		
34 Programmable display sequence with English display descriptors		
35 Meter must have no keypad. Only buttons to scroll the menu, reset and display information must be on the meter.		



A3.3.5 Constructional and general requirements for item A3.1.5

		YES	NO
1 Network and connection type	Single phase 2 wire		
2. Measuring	kW, kWh, kVAr and kVArh all import and export values. Power factor.		
3. Ingress Protection (IP) rating	51 minimum		
4. Meter sealable (terminal cover)	Required		
5. Display	Liquid Crystal Display and be able to display up to 7 digits		
6. Minimum life expectancy	10 years minimum		
7. Terminal arrangement and diameter size	BS5685, 35 mm ² or higher		
8. Optical Port (IEC 620556-21)	Required		
9. The meter shall retain the reading in memory in the event of a power failure.			
10. Means of powering the LCD display in the event of a power failure to be included as an optional extra if available.			
11. Meters to be compatible to Automatic Meter Reading. Details of the AMR compatibility shall be specified by the bidder.			
12. The successful bidder must provide the latest version of meter programming software, the complete installation thereof, adequate training and software manuals must be provided without cost prior to the supplying of meters			
13. All meters shall be calibrated at an accredited calibration laboratory and supplied with a calibration certificate.			
14. Failure to provide proof of certification may result in non-compliance on the tender.			
15. The meters must be suitable for surface mounting with front connections.			
16. The meter lower fixing screws shall only be accessible after breaking the terminal cover seal and removing the cover.			
17. A wiring diagram of the connections shall, be fixed to the inside of terminal cover.			
18. The meters must have internal battery.			
19. The battery lifespan must be at least 3 years.			
20. The following facilities and programmable capabilities shall be provided: (a)A sealable manual reset button			



	YES	NO
(b) The maximum demand readings must be date and time stamped.		
(c) The period of integration for the maximum demand shall be programmable to accommodate a 5 minute to a 60 minutes setting.		
21. Time of use (TOU) (a) Meters must be fully programmable to accommodate Time-Of-Use (TOU) rates for a minimum of 7 TOU active energy registers which include a totalized energy register. (b) Must have a minimum of 4 seasons (c) Must have a minimum of 10 tier switches per day		
22. Access to allow for uploading (modification) of tariff schemes shall only be by means of unique passwords.		
23. Display requirements (Must have at least two display modes)		
23.1 DISPLAY MODE 1 minimum requirements 4) tariff name 5) date and time 6) energy and demand registers		
23.2 DISPLAY MODE 2 minimum requirements 8) phase voltage 9) Phase current 10) instantaneous active power 11) instantaneous reactive power 12) instantaneous power factor		
24. All items shall be fitted with an internal clock with a time drift of not more than 1 second per day.		
25. The meters must have memory capacity to store at least 4 channels of load profile data (30-minute integration period)		
26. The software to program and access and utilize all available Features and facilities of the meters shall be supplied at no cost. Upgrade software revisions shall be supplied at no cost when it becomes available. This software must be Microsoft windows compatible.		
27. Communication protocol shall be provided to any third party on request for AMR implementation at no charge.		
28. Suppliers could be requested to demonstrate their offered meter's AMR software capability on the Council's existing system to determine compatibility. If not, the successful supplier must provide infrastructure at the Bidders cost, to achieve the functionality.		
30. Makings and labeling shall be according to the relevant standard		
31 Programmable display sequence with English display descriptors		



A3.3.6 Technical specification for items A3.1.2, A3.1.4 and A3.1.6

A3.3.6.1 Requirements

	YES	NO
a. Plug-in modem to be power from the meters power supply		
b. Plug-in modem to be GPRS enabled and be able to be configured for Stellenbosch APN		
c. Software to configure the modem to be supplied at no cost		
d. Plug-in modem must have a slot to insert a standard or micro or nano SIM Card if no SIM card slot available modem must have a chip SIM (Please specify)		

A3.3.6.2 Documentation (for items A3.1.2, A3.1.4 and A3.1.6)

		Yes	No
a. Type test certificates (1set)	Required		
b. Installation, operating and maintenance instructions (1 sets)	Required		
c. Details of special tools required (1 set)	Required		
d. Calibration Certificate	Required		

A4. GPRS EXTERNAL MODEMS

A4.1 GENERAL

Nothing in this specification shall lessen the obligations of the supplier. The supplier shall be fully responsible for the design and its satisfactory performance in service. Approval by Stellenbosch Municipality shall not relieve the supplier of the responsibility for the adequacy of the design.

A4.2 COMPLIANCE

Proof of ICASA registration of the device must be issued with the bid.

All requirements shall be offered as a complete standard package unit. No separate additional features/units required for the modem to conform to our specification will be accepted.

Bidder shall have available technical support (technicians) for possible callouts, site assistance as well as repairs on modems. Supporting documentation shall be issued.

**A4.3 MODEM REQUIREMENTS**

No	Description	Yes	No
A4.3.1	General		
A4.3.1.1	The housing shall be manufactured of plastic or similar with connection information indicated on the faceplate.		
A4.3.1.2	The overall dimension of the unit shall not exceed 130mm in width, 80mm in height and 60 mm in depth.		
A4.3.1.3	The unit shall be DIN rail mounted.		
A4.3.1.4	Modems shall have intelligent power management with "Watchdog" processor to manage the operation by resetting the modem under certain conditions. The modem shall reset under the following conditions:		
	a. No network communication for two minutes		
	b. A maximum call duration of one hour		
	c. Periodic time out (twice a day)		
A4.3.1.5	Modem must allow SMS configuration (APN parameters) as and additional option to the configuration by a physical communication cable and be remotely managed		
A4.3.1.6	Modem must be able to switch between CSD and GPRS connections		
A4.3.1.7	APN configuration to be stored in a modem		
A4.3.1.8	Modem must have;		
	a. 1 x slot for standard SIM card and		
	b. 2 x chip SIM ready (1 x Vodacom and 1 x MTN)		
A4.3.1.9	Temperature range: -10 to +55 Degrees Celsius		
A4.3.2	POWER SUPPLY REQUIREMENTS		
a.	Power supply shall range between 90VAC – 260VAC		
b.	Power output: 2 Watt		
A4.3.3	NETWORK FEATURES		
a.	Dual Band 900 / 1800 MHz		
b.	AT Command set		
c.	ETSI GSM Phase 2+ compliance		
d.	GPRS Class 10 (2G)		
A4.3.4	CONNECTIONS PORTS		
A4.3.4.1	Modem must have two connection ports which are;		
	1. RS232 housed in RJ12		
A4.3.4.2	2. RS485 housed in RJ12		
A4.3.4.3	Antenna connection must be a SMA (female)		
A4.3.5	STATUS INDICATORS		
A4.3.5.1	The modem must have the following LED indicators		
	a. Power on/off indicator		
	b. GSM/GPRS status indicator		
	c. Transmit indicator – to indicate outgoing data		
	d. Receive indicator – to indicate incoming data		
A4.3.6	PROGRAMMING CAPABILITY(ARCHITECTURE)		
A4.3.6.1	The microcontroller of the modem must have a firmware that supports the following features;		
	a. TCP/IP Server		



	b. CSD Server		
	c. SMS Server		
A4.3.7	ANTENNA		
a.	Antenna must have a magnetic base with 5dBi gain and with a 3-meter cable		

A6. LOW VOLTAGE INSTRUMENT CURRENT TRANSFORMERS

No	Description		
A6.1	General		
	Nothing in this specification shall lessen the obligations of the supplier. The supplier shall be fully responsible for the design and its satisfactory performance in service. Approval by Stellenbosch Municipality shall not relieve the supplier of the responsibility for the adequacy of the design. This specification covers the requirements for small power distribution boards. The small power distribution boards shall be manufactured in accordance with SANS 60044 The specific requirements for Stellenbosch Municipality are specified below. Where conflicting requirements with the SANS 60044 occur, this specification shall take precedence.		
A6.2	Compliance with standard specifications	Yes	No
	Instrument transformers: Part 1 Current Transformers	SANS 60044 Part 1 –2003	
A6.3	Constructional Requirements – General	Yes	No
	Type Fully Encapsulated Insulation Mounting Ring Mounting Square Secondary wiring terminals Terminal housing Ring/Square	Ring/Square Required Suitable for indoor use Slots brackets for panel mounting Fitted with screws to fit to buss bar Brass Sealable	
A6.4	General notes	Yes	No
	1.Name plates shall be of metal with the details indelibly marked thereon and shall be riveted to the base or fixed to the transformer in a position where it can be easily read. 2. No paper, plastic or similar labels are acceptable. 3. All terminals shall be clearly marked that they are visible from the outside. 4.Failure to provide proof of certification may result in non-compliance on the tender		
A6.5	Marking and labelling	Yes	No
	As per relevant SANS document		
A6.6	Documentation	Yes	No
	Type test certificates(1set) Installation, operating and maintenance instructions (1set) Calibration Certificate	Required Required Required for each ct	
A6.7	General		
	Price to include supply of goods and delivery to the Municipal Store in Stellenbosch. Equipment shall only be newly manufactured. No second hand or refurbished equipment.		

A6.1.1 ROUND TYPE INSTRUMENT CURRENT TRANSFORMERS

ITEM	Range	Inner Diameter	VA	Class	Fault Rating	Rated Voltage	System Frequency
A6.1.1.1	100/5	36mm	10	0.5	20Ka for 1s	Vrms 600	50 Hz
A6.1.1.2	150/5	36mm	10	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.1.3	200/5	36mm	10	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.1.4	250/5	57mm	10	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.1.5	300/5	63mm	10	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.1.6	350/5	63mm	10	0.5	20kA for 1s	Vrms 600	50 Hz



A6.1.1.7	400/5	63mm	10	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.1.8	500/5	71mm	10	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.1.9	600/5	71mm	10	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.1.10	700/5	86mm	10	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.1.11	750/5	86mm	10	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.1.12	800/5	86mm	10	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.1.13	1000/5	86mm	10	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.1.14	1200/5	86mm	10	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.1.15	1600/5	86mm	10	0.5	20kA for 1s	Vrms 600	50 Hz

A6.1.2 SQUARE TYPE INSTRUMENT CURRENT TRANSFORMERS

ITEM	Range	Inner Diameter	VA	Dimensions	Class	Fault Rating	Rated Voltage	System Frequency
A6.1.2.1	100/5	32m	5	H)89 x (W)70 x (D)40mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.2.2	150/5	32m	5	H)89 x (W)70 x (D)40mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.2.3	200/5	32m	5	H)89 x (W)70 x (D)40mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.2.4	250/5	32m	10	H)89 x (W)70 x (D)40mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.2.5	300/5	32m	10	H)89 x (W)70 x (D)40mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.2.6	350/5	32m	10	H)89 x (W)70 x (D)40mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.2.7	400/5	32m	15	H)89 x (W)70 x (D)40mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.2.8	500/5	32m	15	H)89 x (W)70 x (D)40mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.2.9	600/5	32m	15	H)89 x (W)70 x (D)40mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.2.10	700/5	32m	15	H)89 x (W)70 x (D)40mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.2.11	750/5	32m	15	H)89 x (W)70 x (D)40mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.2.12	800/5	32m	15	H)89 x (W)70 x (D)40mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.2.13	1000/5	85mm	15	(H)188 x (W)172 x (D)35mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.2.14	1250/5	85mm	15	(H)188 x (W)172 x (D)35mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.2.15	1600/5	85mm	15	(H)188 x (W)172 x (D)35mm	0.5	20kA for 1s	Vrms 600	50 Hz

A6.1.3 SQUARE TYPE INSTRUMENT CURRENT TRANSFORMERS – SPLIT CORE

ITEM	Range	Inner Diameter	VA	Dimensions	Class	Fault Rating	Rated Voltage	System Frequency
A6.1.3.1	100/5	32m	5	H145mmxW144mm x D80mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.3.2	150/5	32m	5	H145mmxW144mm x D80mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.3.3	200/5	32m	5	H145mmxW144mm x D80mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.3.4	250/5	32m	10	H145mmxW144mm x D80mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.3.5	300/5	32m	10	H145mmxW144mm x D80mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.3.6	350/5	32m	10	H145mmxW144mm x D80mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.3.7	400/5	32m	15	H145mmxW144mm	0.5	20kA	Vrms 600	50 Hz



				x D80mm		for 1s		
A6.1.3.8	500/5	32m	15	H245mm x W184mm x D80mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.3.9	600/5	32m	15	H245mm x W184mm x D80mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.3.10	700/5	32m	15	H245mm x W184mm x D80mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.3.11	750/5	32m	15	H245mm x W184mm x D80mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.3.12	800/5	32m	15	H245mm x W184mm x D80mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.3.13	1000/5	85mm	15	(H)245mm x W184mm x D80mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.3.14	1250/5	85mm	15	H245mm x W184mm x D80mm	0.5	20kA for 1s	Vrms 600	50 Hz
A6.1.3.15	1600/5	85mm	15	(H)245mm x W184mm x D80mm	0.5	20kA for 1s	Vrms 600	50 Hz

A.6.1.4 PVC Compression Glands No 1Black / White

		Compliance	
ITEM NO	Description	YES	NO
A6.1.4.1	- Material Polyamide - Dimensions Height: 22.00 mm Width: 25.00 mm Weight: 9.50 gms Depth: 40.00 mm		



SECTION B: UNDERGROUND CABLES, MATERIAL AND ACCESSORIES

B1. NETWORK CABLES:

PLEASE NOTE: CABLE MUST BE MARKED STELLENBOSCH MUNICIPALITY AND AS FOLLOW:

LV & MV IN CONDUCTOR SIZES 50MM² AND LAGER WITH MINIMUM 18 WIRE CONSTRUCTIONS.

These cables must be sequentially marked with a 4mm wide tape which is inserted inside the conductor with the legend "STELLENBOSCH MUNICIPALITY" appearing at intervals of approximately 100mm on the tape. The cable embossing and drum markings shall include the following information below.

- STELLENBOSCH MUNICIPALITY
- Year of manufacture
- Voltage rating
- Conductor size
- Relevant SANS number as according to the specification
- Supplier's name

LV & MV IN CONDUCTOR SIZES SMALLER THAN 50MM²

These cables must be sequentially marked with a 4mm wide tape, which is applied to the cable during the process of laying up the cores and must be present under or over the bedding layer. This tape will include the legend "STELLENBOSCH MUNICIPALITY".

The cable embossing and drum markings shall include the following information below.

- STELLENBOSCH MUNICIPALITY
- Year of manufacture
- Voltage rating
- Conductor size
- Relevant SANS number as according to the specification
- Supplier's name

B1.2 LOW VOLTAGE AND COMMUNICATIONS CABLE

B1.2.1	GENERAL			
a.	Nothing in this specification shall lessen the obligations of the supplier. The supplier shall be fully responsible for the design and its satisfactory performance in service. Approval by Stellenbosch Municipality shall not relieve the supplier of the responsibility for the adequacy of the design.			
B1.2.2	COMPLIANCE WITH STANDARD SPECIFICATIONS		Yes	No
a.	Armoured cables shall comply with the requirements	SANS 1507-3:2007		
b.	Unarmoured cables shall comply with the requirements	SANS 1507-6:2007		
c.	Saferdac cables shall comply with the mixture requirements	SANS 1411-6 & 1411-1		

B2. BARE COPPER WIRE

No	Description		
B2.1	General: Conductor Bare Copper 16mm ²		
	Specification	SABS 182	Conductor Details
	Stranded and Wire Diameter	7/1.70	mm ²
	Overall Diameter	5.10	mm
	Copper Area	15.88	mm ²
	Copper Mass	145	Kg/km
B2.2	General: Conductor Bare Copper 35mm ²		
	Specification	SABS 182	Conductor Details
	Stranded and Wire Diameter	7/2.50	mm ²
	Overall Diameter	7.50	mm



	Copper Area	34.36	mm ²
	Copper Mass	310	Kg/Km
B2.3	General: Conductor Bare Copper 70mm²		
	Specification	SABS 182	Conductor Details
	Stranded and Wire Diameter	7/3.55	mm ²
	Overall Diameter	10.65	mm
	Copper Area	69.29	mm ²
	Copper Mass	620	Kg/km
B2.4	General: Conductor Bare Copper 95mm²		
	Specification	SABS 182	Conductor Details
	Stranded and Wire Diameter	19/2.50	mm ²
	Overall Diameter Copper	12.50	mm
	Copper Area	93.27	mm ²
	Copper Mass	839.18	Kg/km
B2.5	General: Conductor Bare Copper 120mm²		
	Specification	SABS 182	Conductor Details
	Stranded and Wire Diameter	37/2.03	mm ²
	Overall Diameter	14.21	mm
	Copper Area	119.75	mm ²
	Copper Mass	1085	Kg/km
B2.6	ANTI-THEFT BONDING & EARTHING CABLE		
Area	Max.Res@20°C	Permissible Short Circuit for 1 Second	Nom.Ømm
10mm	1.840m ohm	1.7 kilo Amp	10
35mm ²	0.529m ohm	5.0 Kilo Amp	15.00

B4.LOW VOLTAGE CABLE JOINTS – RESIN SPICING KIT

		Compliance	
Item no	Description/ specification	YES	NO
B4.1	The LV cable joint resin spicing kit must • Be equipped for armoured cables • Be tough and moisture proof • Have Long lasting physical and electrical protection • Be complete and shall include tape to insulate, ferrules, sealing mould ends and flame-retardant resin Max Voltage: 1.1kV • Include SABS performance test report.		

B6. SILICONE FLEXIBLE CABLES

High conductivity bunched flexible tinned copper conductors, insulated and colour coded with a silicone rubber dielectric final sheath in a heat-resistant silicone rubber. Minimum distance 100m

		Compliance	
Description/ specification		Yes	No
Voltage rating	450/750 Volts		
Temperature Range	-60°C to + 180°C		
Flexibility Class	5		
Conductor Type	Tinned flexible high conductivity copper		
Industrial Material	Silicone rubber		
Sheath Colour	Red		
Core Colours	3Core Blue, Brown and Green/Yellow		

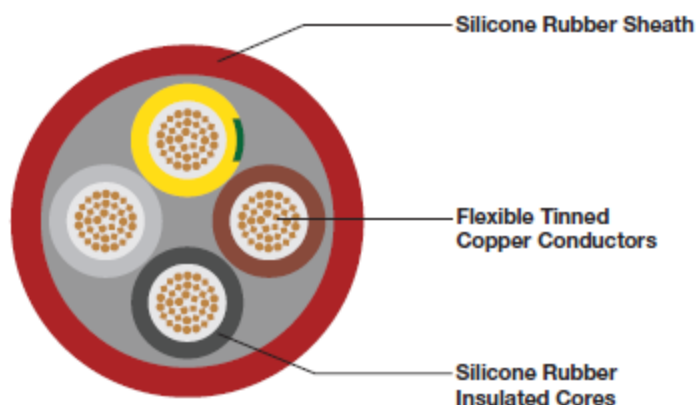


Illustration of a silicone flexible cable

B7. SILICONE CONTROL CABLE

Item no.	Description/ specification	Compliance	
		Yes	No
a.	High conductivity bunched flexible copper tinted conductor to sans 1411 part 1. Insulated with silicon red rubber type RD 7 colour coded with general purpose flexible grade with silicone rubber.		
b.	Cable size	1.5mm	
c.	Number of cores	3	
d.	Sheath Colour	Red	
e.	Rated Voltage	300/500V	
f.	Silicone Insulation	All cores	
g.	Packing information	100m shrink-wrapped coils	

B10. NITRILE TRAILING CABLE

Item no.	Description/ specification	Compliance	
		Yes	No
a.	High conductivity bunch plain flexible copper conductor to SANS 1411 Part 1. Cores insulated and bedded with Flexible PVC. Flexible Grade PVC/Nitrile outer sheath.		
b.	Cable size	16mm	25mm
c.	Number of cores	4	4
d.	Overall Diameter	23mm	26.2mm
e.	Resistance @20°C	1.21	0.78
f.	Current rating	65A	95A
g.	Voltage drop	2.4	0.87
h.	Cable mass per meter	1kg	1.4kg
i.	Packing information	500-meter wooden drum. Sheath identification PVC/Nitrile - Orange	

B12. CABLE DUCTS(CABLEFLEX)

						Compliance	
Item	Description	Size mm	Length m	Outside Ø mm	Inside Ø mm	YES	NO
B12.1	Comply with SABS in respect of	110	6	110	95		
B12.2	SANS (SANS61386-24) entitled						



	Conduit systems for cable management Part 24 Upper Working temperature of 100° Double wall construction with knock on coupling	160	6	160	137		
--	--	-----	---	-----	-----	--	--

B13. CABLE CLAMPS – CAB-STRUT CHANNEL

Item no.	Description/ specification	Clamp size (mm)	Bolt size	Bø (mm)	Compliance	
					Yes	No
B13.1	Clamp and bolt must be galvanized.	16	M6	16		
B13.2		26	M6	26		
B13.3		46	M8	46		
B13.4		66	M8	66		
B13.5		78	M8	78		

B14. CABLE GLANDS AND RUBBER SHROUDS ADJUSTABLE (Nickel Plated Brass)

Item no.	Description/ specification	Gland size	Compliance	
			Yes	No
B14.1	- Must comply with SANS 1213. - Adjustable-fits any size armouring. - Gearbox Action to ensures unprecedented clamping force. - Loose Cone to ensures best armour grip. - To be completely re-usable. - To be adaptable to other thread types. - To be convertible for use with unarmoured cable. - Supplied complete with locknut & shroud	1		
B14.2		2		
B14.3		3		
B14.4		4		
B14.5		5		

B15. HEAT-SHRINK CABLE BREAKOUT BOOT

Item no.	Description/ specification	Boot size (mm ²)	Conductor size (mm ²)	Type	Compliance	
					Yes	No
B15.1	To be manufactured from a high-quality cross-linked polymer compound. Suitable for terminating and sealing of low voltage cables, plastic, paper and rubber. Breakouts to be internally coated with a hot melt adhesive to prevent the ingress of moisture into the crutch are. Operating temperature range -30°C to +80°C. Good weather ability and UV resistance	16 x2C	1-25	EN2 30/8		
B15.2		16 x4C	6-35	EN4 35/15		
B15.3		35&70x4 C	25-150	EN4 60/25		
B15.4		95x4C	70-185	EN4 75/30		

B16. HEAT-SHRINKABLE CABLE END CAPS

Item no.	Description/ specification	Inside Diameter (mm)	Length (mm)	Width (mm)	Type	Compliance	
						Yes	No



B16.1	Endcaps to be manufactured from a high-quality, cross-linked compound of polyolefin. The internal surface of the end cap is coated with hot melt thermoplastic adhesive, which retains the flexible properties after the shrinking process, producing a water-tight seal. Operating temperature must be between - 55°C to 110°C. Colour must be black. Shrink temperature must be 120°C	55	134	3.9	55/25		
B16.1		75	170	3.33	75/32		

B17. STAINLESS STEEL STRAPPING & BUCKLES

							Compliance	
Item no.	Description/ specification	Grade	Thickness (mm)	Length (mm)	Width (mm)	Type	Yes	No
B17.1	Stainless Steel Strapping	307	0.75	30	19			
B17.2	Stainless Steel Buckles Jaw Type / Grade-304 Width-19mm	304			19	Jaw		

B18. FERRULES (For Stranded copper conductor)

						Compliance	
Item no.	Description/ specification	Inside diameter (mm)	Outside diameter (mm)	Length (mm)	Nominal Sleeve (mm ²)	Yes	No
B18.1	Ferrules Crimping CU	3.4	5.3	17.7	6		
B18.2	Ferrules Crimping CU	4.4	6.3	19.8	10		
B18.3	Ferrules Crimping CU	5.5	7.6	22	16		
B18.4	Ferrules Crimping CU	8.2	10.7	27.5	35		
B18.5	Ferrules Crimping CU	11.7	15	34.4	70		
B18.6	Ferrules Crimping CU	13.5	17.4	38.6	95		
B18.7	Ferrules Crimping CU	15.5	19.8	42.9	120		
B18.8	Ferrules Crimping CU	17	22	48.1	150		
B18.9	Ferrules Crimping CU	19	24.4	53.6	185		

B19. CABLE LUGS CRIMPING (For Stranded copper conductor/cable)

								Compliance	
Item no.	Description/ specification	Nominal Lug size (mm ²)	Stud size (mm)	Barrel length (mm)	Length (mm)	Hole (mm)	Width (mm)	Yes	No
B19.1	Lugs Crimping CU 6mm	6	10	11	19	7.5	15		
B19.2	Lugs Crimping CU 10mm	10	10	11	19	7.5	15		
B19.3	Lugs Crimping CU 16mm	16	8	12	18	7.5	13		
B19.4	Lugs Crimping CU 16mm	16	10	12	20	7.5	15		



B19.5	Lugs Crimping CU 16mm	16	12	12	25	10.5	18		
B19.6	Lugs Crimping CU 35mm	35	10	15	19	9	16		
B19.7	Lugs Crimping CU 35mm	35	12	15	22	10	18		
B19.8	Lugs Crimping CU 70mm	70	12	18	24	10	20		
B19.9	Lugs Crimping CU 95mm	95	10	21	26	11	22		
B19.10	Lugs Crimping CU 95mm	95	12	21	21	12	22		
B19.11	Lugs Crimping CU 120mm	120	12	23	28	13	26		
B19.12	Lugs Crimping CU 150mm	150	12	26	28	12	28		
B19.13	Lugs Crimping CU 185mm	185	12	27	33	16	32		

B20. CABLE TIES - BLACK

								Compliance	
Item no.	Description/ specification	width (mm)	Length (mm)	Bundle Ø Max	N (mm)	Material (mm)	Packaging Per bag	Yes	No
B20.1	Cable Ties T18R	2.5	100	22	80	PA66W	100		
B20.2	Cable Ties T30R	3.5	150	35	135	PA66W	100		
B20.3	Cable Ties T50R	4.6	200	50	225	PA66W	100		
B20.4	Cable Ties T120R	7.6	387	100	535	PA66W	100		

B21. WIPING METAL (Solder Alloy)

							Compliance	
Item no.	Description/ specification	Grade	S'n	S,b	Max Impurities	Melting range (Celsius)	Yes	No
B21.1	Wiping metal 30%	SABS S5	30 %	1.0- 1.7%	0.25%	185-248		

B22. PVC ELECTRICAL INSULATION TAPE

							Compliance	
Item no.	Description/ specification	Width (mm)	Length (mm)	Thickness (mm)	Dielectric Strength		Yes	No
B22.1	To be the highest quality PVC insulated tape, unsurpassed strength and elasticity ensures a neat, safe and easy wrap. Weather resistance with a long-term adhesion.	19	20	0.2	10kV			



	To be supplied in useful re-usable plastic containers to keep tape clean and free of fault causing filings. Colours red, blue, yellow, black and green						
--	--	--	--	--	--	--	--

B24. BARRIER TAPE

					Compliance	
Item no.	Description/ specification	Colour	Length (m)	Width (mm)	Yes	No
B24.1	Red and White plastic Barrier Tape	Red & White	500m	75mm		

B25. ELECTRICAL CABLE WARNING TAPE (DANGER TAPE)

					Compliance	
Item no.	Description/ specification	Colour	Length (m)	Width (mm)	Yes	No
B25.1	Orange or Yellow plastic without adhesive with a warning message "ELECTRIC CABLE BELOW"	Orange or Yellow	500m	150mm		

SECTION C: OVERHEAD CONDUCTORS, MATERIAL AND ACCESSORIES

					Compliance	
Item no.	Description/ specification	Colour	Length (m)	Width (mm)	Yes	No
B25.1	Orange or Yellow plastic without adhesive with a warning message "ELECTRIC CABLE BELOW"	Orange or Yellow	500m	150mm		

C1. AERIAL BUNDLE CONDUCTOR CABLES

No	Description	Compliance	
C1.1	LOW VOLTAGE AERIAL BUNDLE CONDUCTOR		
C1.1.1	GENERAL	YES	NO
a.	Nothing in this specification shall lessen the obligations of the supplier. The supplier shall be fully responsible for the design and its satisfactory performance in service. Approval by Stellenbosch Municipality shall not relieve the supplier of the responsibility for the adequacy of the design.		
b.	This specification covers the requirements for LV ABC cable. LV ABC cable shall be manufactured in accordance with SANS 1418. The specific requirements for Stellenbosch Municipality are specified below. Where conflicting requirements with the SANS 1418 occur, this specification shall take Precedence.		



	Cable and drum markings shall include the following information – -STELLENBOSCH MUNICIPALITY: Year of manufacture; Voltage rating; Conductor size; Relevant SANS number as according to the specification and Supplier's name				
C1.1.2	COMPLIANCE WITH STANDARD SPECIFICATIONS			Yes	No
a.	Aerial Bundled Conductor Systems	SANS 1418 part 1:1987			
b.	Part 1: Cores	SANS 1418 part 2:2001			
C1.1.3	RATINGS			Yes	No
a.	Rating	Unit Vrms	Value 600/1000		
C1.1.4	CONSTRUCTIONAL REQUIREMENTS			Yes	No
a	Phase Conductor	Stranded compacted aluminium			
b	Neutral	Aluminium alloy			
c	Neutral construction	Strain-bearing			
d	Insulation	Carbon loaded XLPE			
C1.1.5	CORE IDENTIFICATION			Yes	No
a.	Phase 1, 2 3 And 4 indented (Excluded item 4)				
b	Neutral –1 x longitudinal rib on surface				
C1.1.6 STANDARD SIZES					
	Conductor Size (mm²)	Auxiliary conductor size(mm²)	Neutral / earth conductor size (mm²)		
a.	25	---	25		
b.	70	25	54.6		
c.	95	25	54.6		
d.	120	25	70		
C1.1.7	TESTS			Yes	No
a.	Test reports for type and routine tests as per SANS1507 to be provided.				
b.	Test to be done by an accredited laboratory.				
C1.1.8	RAISING PLINTH			Yes	No
a.	Shall bear the SABS 1507 mark of approval.				
b.	The cable shall be sequentially marked at one metre intervals with the legend 000m, 001m etc. starting with 000m at the barrel of the drum and finishing with the number Indicating the length of cable on the drum at the outer end of the cable. The error in the length marking shall be less than 1%.				
C1.1.9	Packing			Yes	No



a.	Supplied on wooden drums. Cable ends to be sealed.		
b.	For cables of 16mm ² or smaller –500 lengths.		
C1.1.10	General	Yes	No
a.	Prices to include supply of goods and delivery to the Municipal Store in Stellenbosch		
b.	Equipment shall only be newly manufactured. No second hand or refurbished equipment shall be offered.		

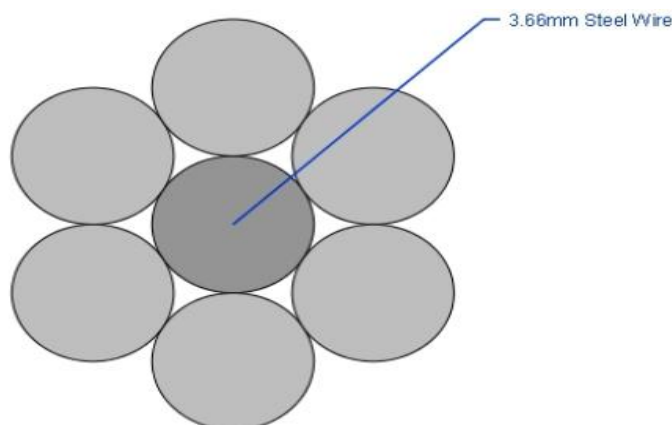
C2 ACSR MINK (63/11) OVERHEAD UNGREASED CONDUCTOR

No	DESCRIPTION		COMPLIANCE	
C2.1	GENERAL		Yes	No
a	Nothing in this specification shall lessen the obligations of the supplier. The supplier shall be fully responsible for the design and its satisfactory performance in service. Approval by Stellenbosch Municipality shall not relieve the supplier of the responsibility for the adequacy of the design. This specification covers the requirements for mink overhead ungreased conductor. Conductor shall be manufactured in accordance with SANS 182. The specific requirements for Stellenbosch Municipality are specified below. Where conflicting requirements with the SANS 182 occur, this specification shall take precedence. Cable and drum markings shall include the following information -STELLENBOSCH MUNICIPALITY; Year of manufacture; Voltage rating -Conductor size; Relevant SANS number as according to the specification -Supplier's name			
C2.2	COMPLIANCE WITH STANDARD SPECIFICATION		Yes	No
a	Conductors for overhead electrical transmission lines	SANS 182		
C2.3	RATINGS		Yes	No
a.	Amperes	Unit A	Value 260,8	
b.	DC Resistances at 20C	Ohms/km	0,45455	
C2.4	CONSTRUCTION REQUIREMENTS		Yes	No
a.	Strand	6/3,66mmAL+ 1/3,66mm Steel		
b.	Strand build up	1+6		
c.	Diameter over steel	3,66 mm		
d.	Overall diameter	10.98 mm		
e.	Steel area	10,52 mm ²		
f.	Aluminium area	63,13 mm ²		
g.	Total area	73,65 mm ²		
h.	Steel mass	82 kg/km		
i.	Type of grease	Not applicable		
j.	Grease drop point	Not applicable		
k.	Grease mass	Not applicable		
l.	Total mass	255,4 kg/km		
M	Tensile strength	21672 N		
n.	Breaking load	2209,2 kg		
o.	Coefficient of linear expansion	19,3 per degree C		
p.	Initial modulus of elasticity	49100 N/mm ²		
q.	Final modulus of elasticity	80400 N/mm ²		
Reference No:		B/SM 109/25	Page 173 of 373	



C2.5	PACKING		
a	Supplied on wooden drums. Cable ends to be sealed		

Figure 2: Illustration of ACSR mink overhead ungreated conductor construction

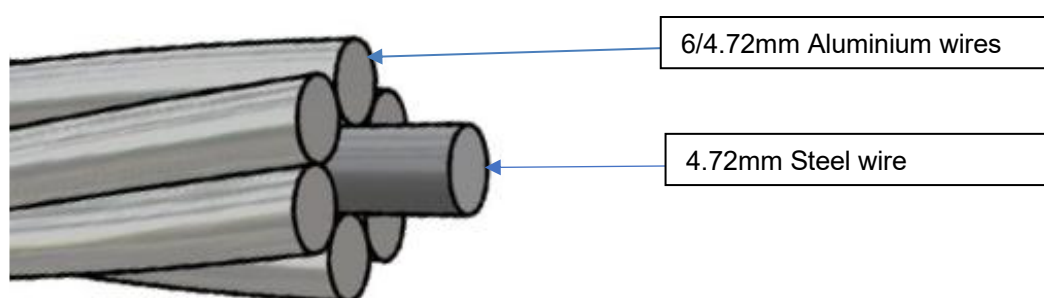


C3 ACSR 6/1/4.72mm HARE OVERHEAD UNGREASED CONDUCTOR

No	DESCRIPTION				
C3.1	GENERAL				
a	Nothing in this specification shall lessen the obligations of the supplier. The supplier shall be fully responsible for the design and its satisfactory performance in service. Approval by Stellenbosch. Municipality shall not relieve the supplier of the responsibility for the adequacy of the design.				
b	This specification covers the requirements for ACSR hare overhead ungreated conductor. Conductor shall be manufactured in accordance to SANS 182. The specific requirements for Stellenbosch Municipality are specified below. Where conflicting requirements with the SANS 182 occur, this specification shall take precedence.				
c	Bidders are to indicate "Yes" for compliance with the specification and "No" for not complying with the specification. Failure to indicate compliance will result in disqualification of the bidder's offer.				
d	Pricing must be completed in full and delivery period clear indicated. Failure to indicate delivery period will result in disqualification of the bidder's offer. Bidders must attach to their offer a technical data sheet for the ACSR conductor quoting for.				
				COMPLIANCE	
C3.2	COMPLIANCE WITH STANDARD SPECIFICATION			YES	NO
a	Conductors for overhead electrical transmission lines	SANS 182			
C3.3	RATINGS				
a	Amperes	Unit A	Value 360		
b	DC Resistances at 20C	Ohms/km	0,2733		
C3.4	CONSTRUCTION REQUIREMENTS				
a.	Strand		6/4.72mm AL + 1/4,72mm Steel		
b.	Strand build up		1+6		
c.	Diameter over steel		4.72 mm		
d.	Overall diameter		14.16 mm		
e.	Steel area		17.5 mm ²		
f.	Aluminium area		104.98 mm ²		
g.	Total area		122.48 mm ²		
h.	Steel mass		137 kg/km		
i.	Aluminium Mass		288 kg/km		

j.	Type of grease	Not applicable		
k.	Grease drop point	Not applicable		
l.	Grease mass	Not applicable		
m.	Total mass	425.1 kg/km		
n.	Tensile strength	36046 N		
o.	Breaking load	3674.4 kg		
p.	Coefficient of linear expansion	19,3 per degree C		
q.	Initial modulus of elasticity	48500 N/mm squared		
r.	Final modulus of elasticity	80400 N/mm squared		
C3.5	PACKING			
a.	Supplied on wooden drums and labelled "Stellenbosch Municipality". Cable ends to be sealed			
b.	Standard conductor length must be 1500m per drum			

Figure 3: Illustration of ACSR HARE overhead ungreased conductor



C4 AERIAL BUNDLE CONDUCTOR ACCESSORIES

		Compliance	
ITEM NO.	DESCRIPTION	YES	NO
C4.1. ABC LOW VOLTAGE NEUTRAL STRAIN ASSEMBLY-TYPE EAS 54-10		YES	NO
C4.1.1	Strain assembly must be suitable for insulated neutral 54.6mm ² .		
C4.1.2	Must have a minimum breaking load of 1500kg.		
C4.1.3	Must consist of an Aluminum alloy pole mounted bracket and a thermo resistance PVC wedge type clamp for the conductor.		
C4.1.4	The method of mounting on pole must be by an M16 bolt or 2 stainless steel straps of 20mm wide and 0.7mm thick. The clamp must be fixed to the bracket with flexible stainless-steel cable with a PVC liner to protect the cable contact with the bracket.		
C4.2. ABC LOW VOLTAGE SUSPENSION CLAMP ASSEMBLY-TYPE ES 54-14		YES	NO
C4.2.1	Suspension clamp assembly must be suitable for insulated neutral 54.6mm ² .		
C4.2.2	Must have a glass fibre reinforced thermo-PVC suspension suitable for a 54.6mm ² conductor.		
C4.2.3	The suspension clamp must have a self-lockable device to lock around the catenary for a secure fitment of the conductor.		
C4.2.4	The method of mounting on pole must be by an M16 bolt or 2 stainless steel straps of 20mm wide and 0.7mm thick.		
C4.3. AIRDAC CONDUCTOR CONSUMER SERVICE STRAIN CLAMP		YES	NO
C4.3.1	Suspension clamp assembly must be suitable for 4, 10 and 16mm ² .airdac cables.		
C4.3.2	This unit must have a bracket from hot dip galvanized steel bail and a thermo PVC wedge type cable clamp. Alternative a stainless-steel bail may be used.		
Reference No: B/SM 109/25		Page 175 of 373	



C4.3.3	Must have a minimum breaking load of 1500kg.		
C4.4. ABC FUSE SWITCH DISCONNECTORS		YES	NO
C4.4.1	Fuse switch disconnectors must be designed to be used with NH00 and NH02 size fuse up to a maximum of 400 Amp of line protection without blades.		
C4.4.2	Must be designed for full load switching with fuse links of disconnector blades up to 400A		
C4.4.3	The upper housing of the switch is hinged to the lower body and can be withdrawn by the insulated operating link stick thereby enabling changing of fuse from ground level.		
C4.4.4	Must be fully insulated and made from corrosion proof, impact resistant, weather & UV resistant glass fiber reinforced polyamide compound suitable for consistent performance under adverse climatic conditions.		
C4.5. ABC INSULATED PIERCING CONNECTORS – TYPE PC1WP1F		YES	NO
C4.5.1	The connector must be suitable for bulk main line connections on ABC line T-off service connections 35 to 95mm ² to 10 and 16mm ² cable connections		
C4.5.2	The unit must consist of two insulated clamps fitting around the ABC conductors and bolted together with single bolt. These bolts must be the shear off type head to ensure a maximum torque tightness.		
C4.5.3	The clamp must be geometrically balanced when tightened.		
C4.5.4	The unit must be weather/ waterproof. The clamp conductor must have two contact plates and must be suitable for Al – Al and Al – Cu connections.		
C4.5.5	The unit must be open ended so that conductors can exit on either side of the clamp.		
C4.5.6	This unit must have a minimum voltage withstand rating of 6kV.		
C4.6. ABC INSULATED PIERCING CONNECTORS – TYPE BC-21F		YES	NO
C4.6.1	Must be suitable for line connections on ABC line T-off connections from 35mm ² to 185mm ² bare overhead line connections.		
C4.6.2	The unit must consist of two insulated clamps fitting around the ABC conductors and bolted together with single bolt. These bolts must be the shear off type head to ensure a maximum torque tightness.		
C4.6.3	The clamp must be geometrically balanced when tightened. The unit must be weather/ waterproof.		
C4.6.4	The clamp conductor must have two contact plates and must be suitable for Al – Al and Al – Cu connections.		
C4.6.5	The unit must be open ended so that conductors can exit on either side of the clamp.		
C4.6.6	This unit must have a minimum voltage withstand rating of 6kV.		
C4.7. ABC INSULATED PIERCING CONNECTORS – TYPE PC3WP2F		YES	NO
C4.7.1	Must be suitable for bulk main line connections on ABC line T-off and shackle extensions from 35 to 95mm ²		
C4.7.2	The unit must consist of two insulated clamps fitting around the ABC conductors and bolted together with double bolts. These bolts must be the shear off type head to ensure a maximum torque tightness.		
C4.7.3	The clamp must be geometrically balanced when tightened.		
C4.7.4	The clamp conductor must have four contact plates and must be suitable for Al – Al and Al – Cu connections.		
C4.7.5	The unit must be open ended so that conductors can exit on either side of the clamp.		
C4.7.6	This unit must have a minimum voltage withstand rating of 6kV.		
C4.8. ABC INSULATED PIERCING CONNECTORS – TYPE PC6WP2CF		YES	NO
C4.8.1	Must be suitable for bulk main line connections on ABC line T-off and shackle extensions from 35 to 95mm ²		
C4.8.2	The unit must consist of two insulated clamps fitting around the ABC conductors and bolted together with double bolts. These bolts must be the shear off type head to ensure a maximum torque tightness.		
C4.8.3	The clamp must be geometrically balanced when tightened.		
C4.8.4	The unit must be weather/ waterproof.		
C4.8.5	The clamp conductor must have four contact plates and must be suitable for Al – Al and Al – Cu connections.		
C4.8.6	In the case of Cu cable connections, a shaped cable core of up to 185mm ² must be accommodated.		



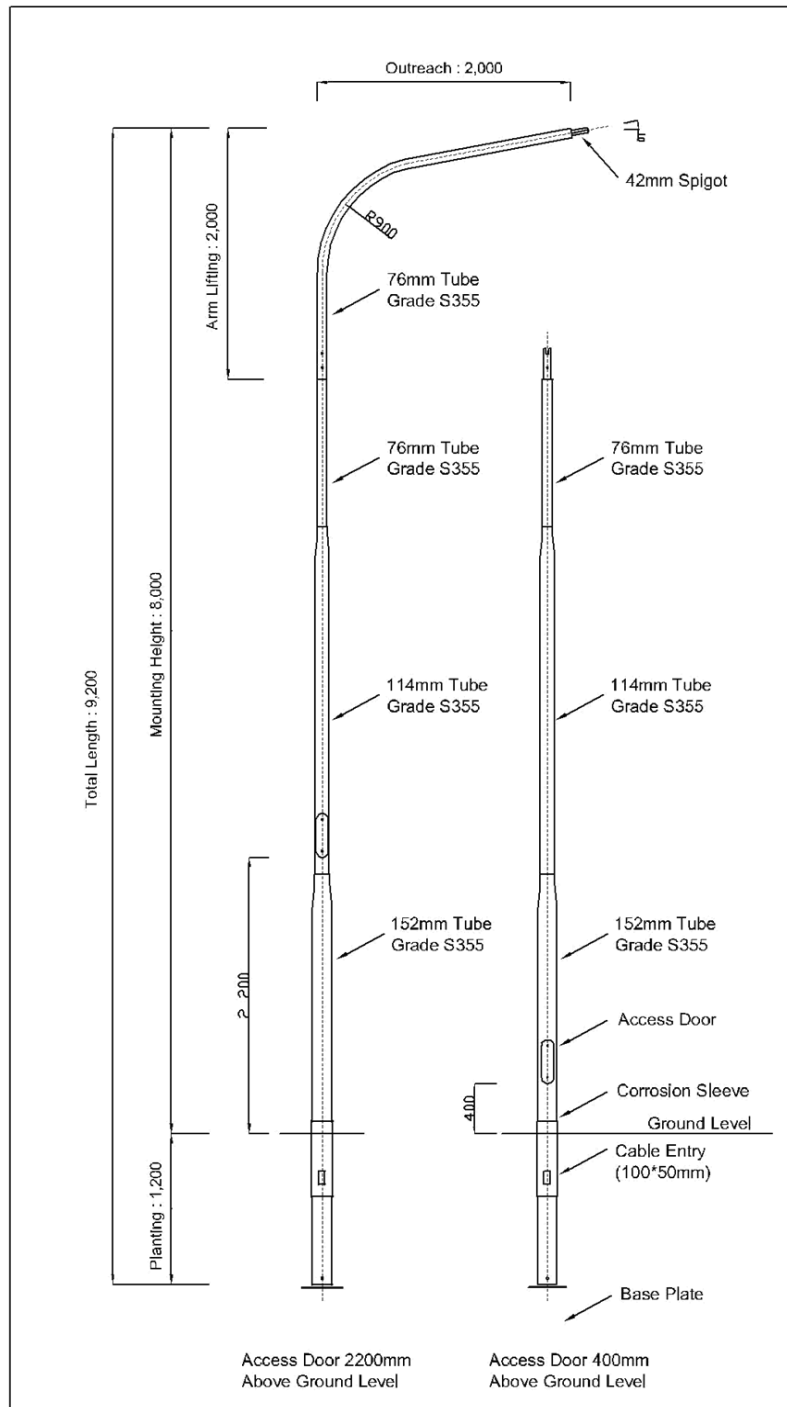
C4.8.7	The unit must be open ended so that conductors can exit on either side of the clamp.		
C4.8.8	This unit must have a minimum voltage withstand rating of 6kV.		
C4.9. ABC INSULATED COMPRESSION JOINTS – TYPE MJPT		YES	NO
C4.9.1	Must be suitable for linear jointing of ABC conductors midspan.		
C4.9.2	The type MJPT unit must indicate the insulation stripping length of the conductors on the outer body of the connector.		
C4.9.3	The unit must be able to join two conductors of the following sizes; 25mm ² - 25mm ² ; 35mm ² - 35mm ² ; 50mm ² - 50mm ² ; 70mm ² - 70mm ² ; 95mm ² - 95mm ² ; 120mm ² - 120mm ² ; 54.6mm ² - 54.6mm ² ;		
C4.10. ABC INSULATED BI-METAL COMPRESSION LUGS – TYPE CPTAU		YES	NO
C4.10.1	Must consists of aluminium, copper and PVC insulation suitable for ABC conductors to be connected to equipment studs.		
C4.10.2	The type CPTAU unit must indicate the insulation stripping length of the conductors on the outer body of the connector.		
C4.10.3	The unit must be have the following sizes; 25mm ² (conductor)x 16mm ² (hole); 35mm ² (conductor)x 16mm ² (hole); 50mm ² (conductor)x 16mm ² (hole); 70mm ² (conductor)x 16mm ² (hole);		

SECTION D: STREETLIGHTING, MATERIAL AND ACCESSORIES

D1		POLES TRANSMISSION AND NETWORK	
D1.1	GALVANISED STREETLIGHT POLE	Yes	No
D1.1.1	SPECIFICATION:	i) 50year mean return period ii) Category 2 Class B structure iii) Altitude –Sea level	
D1.1.2	DESIGN CONDITIONS:	i) The poles must be designed to withstand a wind velocity of up to 150kph ii) The wind area of the pole must be calculated with a lantern wind area of 0.35m ² in addition to the tapering projected area of the pole iii) In the design of the poles the analysis must be based on the plastic theory, with result that all components have a – load	
D1.1.3	CONSTRUCTION:	The construction of the poles must be from pre-formed steel pipe of various sizes welded together through reducers by means of continuous full strength butt welds, ie tubular stepped in sections.	
D1.1.4	MATERIAL	The tubular material used is grade 300MPa to SABS 657 with welding conforming to SABS 1200 H minimum thickness 4mm.	
D1.1.5	FINISH	The poles and all ancillary must be hot dipped galvanized to SABS 763 specification.	
D1.1.6	BASE PLATE:	Planted poles are supplied with a loose base plate 400 x 400 x 4mm thick, which is attached to the pole shaft by means of 2 x M16 hook bolts.	
D1.1.7	CABLE ENTRY:	A single cable entry 100 x 50mm wide is provided 400mm below ground level.	
D1.1.8	PROTECTION SLEEVE:	The streetlight poles must be supplied with a ground sleeve 600mm long and 5mm thick. When planted the top portion of sleeve must be 100mm above ground level	
D1.1.9	ACCESS OPENING:	A flush mounted door to be supplied with the poles as well as recessed Allen cap screw. Connection chamber to be at 2200mm/400mm above ground level.	



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY





D1.2	POLES TRANSMISSION (WOOD):	All poles will be according to SANS 759 (wooden creosote treated) and a permit to manufacture those poles must accompany the tender document.		
D1.3	POLES CONCRETE	Poles will be supplied with either concrete caps or hot dipped galvanized epoxy coated spigots as per order. Poles to be designed to comply with design requirements of SANS 470 –1972. Switch boxes which include a hardwood backboard are to the dimensions detailed below: a) 8.4 m –9m b) 407mm x 127mm x 140mm deep c) 4.5m –720m d) 394mm x 114mm x 127mm deep Cable in boxes size: a) 152mm x 152mm x 51mm at both ends of pole		

D2. STREELIGHT BRACKET GALVANISED SLEEVE

D2.1	Streetlight Bracket Galvanised Sleeve (76mm Spigot) as per Attached Drawing	YES	NO
D2.1.1	Sleeve - 300mm x 3mm x 88mm outside diameter + welded cap		
D2.1.2	Pipe welded to the side with a 10° rake - 1.5m x 43mm		
D2.1.3	Galvanized bolts staggered for clamping 4 x M12		

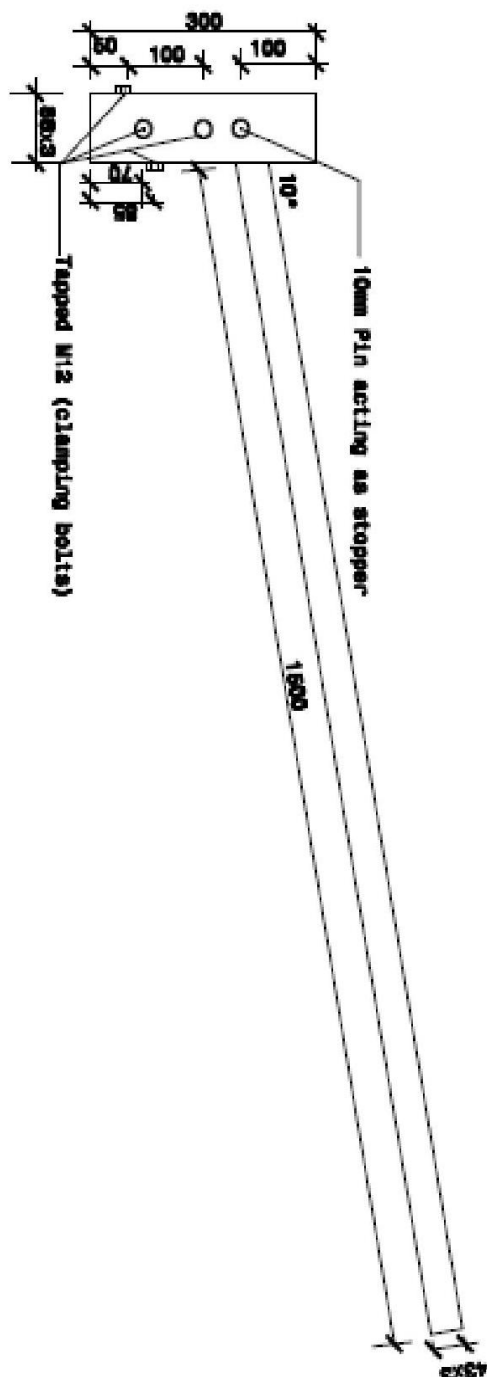
D2.2	Description	YES	NO
D2.2.1	Streetlight Bracket Galvanized Sleeve (42mm Spigot)- 2.5M Double caved outreach arms (See attached picture)		
D2.2.2	Streetlight Bracket Galvanized Sleeve (42mm Spigot) – 2.5M single caved outreach arm (see attached picture)		
D2.2.3	Streetlight Bracket Galvanized Sleeve (42mm Spigot) – 2M double caved outreach arm (see attached picture)		
D2.2.4	Streetlight Bracket Galvanized Sleeve (42mm Spigot) – 2M single caved outreach arm (see attached picture)		



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

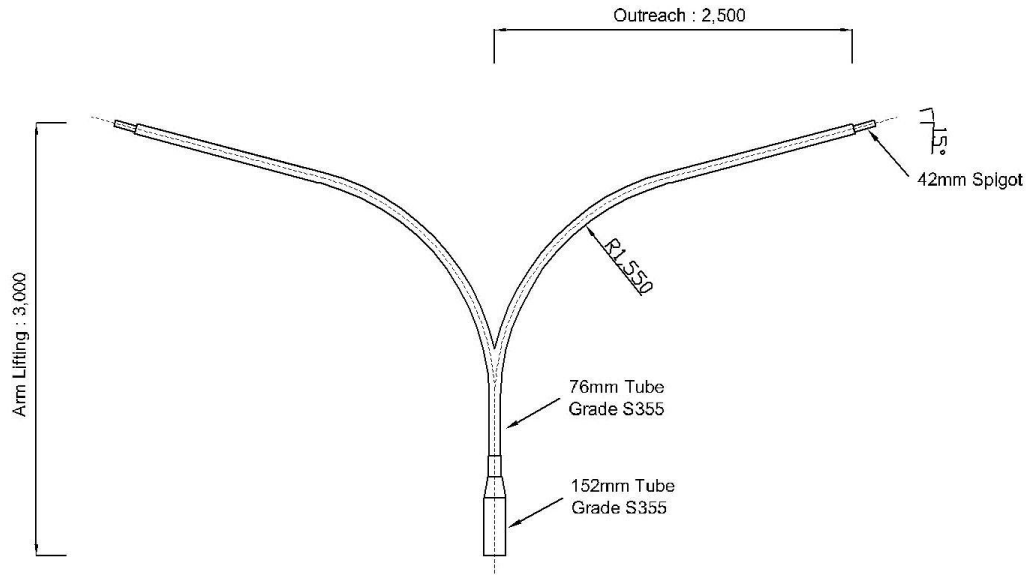
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY



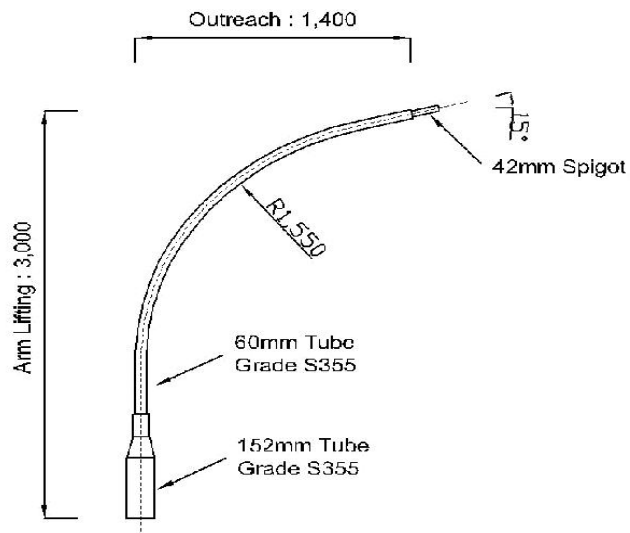
1.5m OUTREACHED ARM FOR 76mm SPIGOT



2.5M Double Curved Outreach Arm (Concrete Pole)



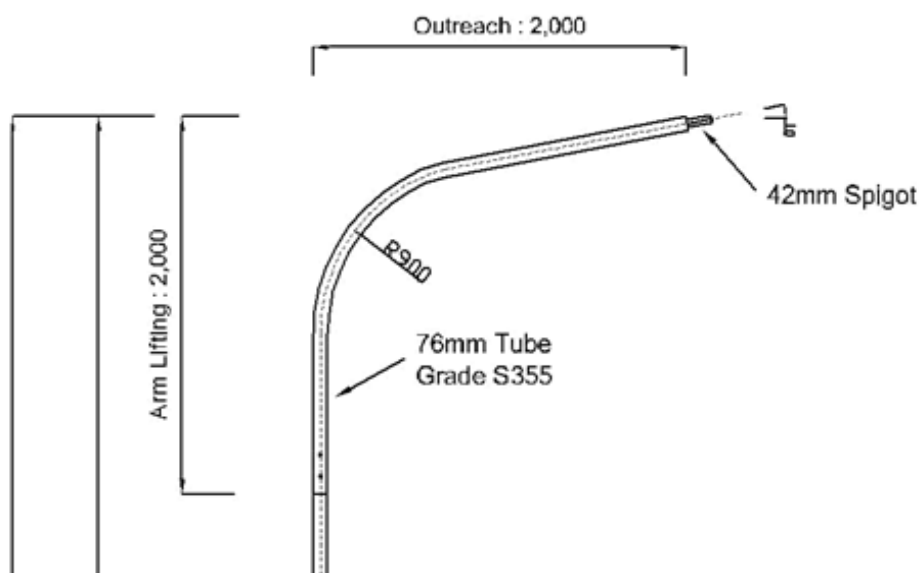
2.5M Single Curved Outreach Arm (Concrete Pole)



2.0M Double Curved Outreach Arm (Galvanized)



2.0M Single Curved Outreach Arm (Galvanized)



D3. LED LUMINAIRE

D3.1 TECHNICAL REQUIREMENTS OF LIGHT EMMITING DIODE (LED) STREETLIGHT AND LUMINAIRES

The following standards contain provisions which, through reference in this text, constitute requirements of this specification

At the time of publication, the editions indicated were valid

Item No	Specification Item	Description	Yes	No
D3.1.1	IEC 60598-1	Luminaires – Part 1: General requirements and tests		
D3.1.2	IEC 60598-	Luminaires – Part 2: Particular requirements Section 3 Luminaires for road and street lighting		
D3.1.3	ISO 4762	Hexagon socket head cap screws		
D3.1.4	SANS 529	Heat-resisting wiring cables		
D3.1.5	SANS 121	Hot dip galvanized coatings on fabricated iron and steel articles – Specifications and test method		
D3.1.6	SANS 1088	Luminaires entries and spigots		
D3.1.7	SANS 60529	Degrees of protection provided by enclosures (IP Code)		
D3.1.8	SANS 1507	Electric cables with extruded solid dielectric insulation for fixed installations (300/500V to 1 900/3 300V) Part 3: PVC Distribution cables		
D3.1.9	SANS 1574	Electric flexible cores, cords and cables with solid extruded dielectric insulation Part 3: PVC insulated cores and cables		
D3.1.10	SANS ARP 035:2014	Guidelines for the installation and maintenance of street lighting		
D3.1.11	SANS 61000-3-2	Electromagnetic compatibility (EMC) Part3-2: Limits for harmonic current emission (equipment input current.		
D3.1.12	OHSACT (Act 85 of 1993)	Occupational Health and Safety Act and regulations 1.2.13		
D3.1.13	ARP 035.2015	Guidelines for installation and maintenance of streetlights		



Item No	Description	Yes	No
D3.2	General		
a.	The luminaires shall be Class 1 of IEC 60598-1 and be of the totally enclosed type. Luminaire shall be delivered completely assembled with housing, driver, and LED module and protector lens		
b.	The luminaire output shall be provided as nominal flux at Tq of 3		
c.	The colour temperature of the luminaires shall be neutral white, 4000K and a colour rendering index of 70 (minimum).		
d.	The luminaires shall deliver 80% of the initial lumens, when installed for a minimum of 60 000 hours. The bidder shall provide a lumen depreciation graph by means of the IES LM 80-08 data of the LED'. The LED light source test data shall provide the expected data for at least 25% of rated LED light source lifetime, i.e. 15 000 hours. Documentary evidence of this shall be submitted as annexure The following information and conditions shall be met: • The LED light source(s) have been tested according to LM-80-08 • The LED drive current specified by the luminaire manufacturer is less than or equal to the drive current specified in the LM-80 test report. • The LED light source(s) manufacture shall indicate a temperature measurement point (Ts) on the light source(s). • The Ts is accessible to allow temporary attachment of a Thermo couple for measurement of in-situ temperature. Access via a temporary hole in the housing, tightly resealed during testing with a flexible sealant allowable. • For the hottest LED light source in the luminaire, the temperature measured at the Ts is less than or equal to the temperature specified in the LM-80 test report for the corresponding drive current.		
e.	The LED module or array shall be designed in such a manner that the failure of one LED shall not cause failure of luminaire Documentary evidence of this shall be submitted.		
f.	Temperature sensors shall be fitted as protection devices to the luminaire, placed directly next to the LEDs. These shall not switch off the luminaire manages its temperature, through the use of sensors and the effect on lumen maintenance, shall be supplied		
g.	The entire assembly and testing of the complete LED luminaire shall be undertaken within an ISO 9001 certified factory, within South Africa.		
D3.3	IP Rating		
(a)	The luminaires shall have minimum rating of IP 66 in accordance with SANS 60529 for both the driver and LED module compartments, when normally mounted as per SANS 475		
D3.4	CONSTRUCTION OF LUMINAIRES		
(a)	Luminaires shall be suitable for operation at an ambient temperature, Ta, of 3C. Fixing devices, junctions, water. Pockets and ledges in which condensation may accumulate shall be avoided.		
(b)	The luminaires shall contain a heat sink with no fans, pumps or liquids, and the design thereof on the external surfaces shall prevent the accumulation of dirt and nesting of insects or ants, thus ensuring continuous effective cooling. Heat from the LED source should take the shortest path to the exterior by direct conduction or any other reliable form of cooling that will not compromise the useful life of the LEDs		
(c)	The luminaires shall have aluminium housings of grade EN1706 AC-44300(or higher) aluminium alloy. This shall be substantiated by an independent metallurgical report confirming the grade of aluminium for the luminaires offered.		
(d)	Luminaires shall be supplied in raw aluminium and shall not be powder coated.		
(e)	Ferrous components shall be hot dip galvanised and shall withstand the test specified in the current edition of SANS 121 for heavy duty application		
(f)	External small components (such as toggle clips, bolts, screws, nuts, washers) shall be stainless steel (grade 304 or better).		



	• Due attention shall be paid to the accessibility of parts and to other requirements necessary for efficient maintenance and cleaning, where required. If screws are used to secure covers, they shall be held captive when opened. • The upgrading and/or service of the LED unit and the driver/power supply shall be possible without removing the whole luminaire but by means of replacing only the optical/gear compartment by means of hinging mechanism. • Various items/components such as the aluminium housings, printed circuit boards (PCB's), glass and stainless-steel latches/clips shall be manufactured (not simply assembled) in South Africa.		
D3.5	MOUNTING		
(a)	Spigot entries shall be designed to fit easily over the bracket pipe and shall be truly parallel to the fitting axis and shall comply with Table 1 of SANS 1088:1990		
(b)	Attachment of the luminaire base casting to its bracket arm should be by means of at least two stainless steel M8 grub screws into stainless steel sockets or any other methods to prevent cathodic corrosion between stainless steel and aluminium. The attachment of the luminaire should be designed to withstand wind speeds of up to 150 km/hour on the projected surface of the luminaire, without due deflection.		
D3.6	OPTICS		
(a)	The luminaire shall be able to be equipped with variety of lenses, providing the desired light distribution, ensuring a great diversity of light distributions for different applications. A minimum of 15 different optic distributions shall be available for flexibility of lighting designs, ensuring compliance to lighting requirements per application.		
(b)	Luminaires should be photo metered according to the C-Gamma system as detailed in CIE Publication No. 27. For LED luminaires with nonreplaceable LED modules, the intensity values shall be given in candela. The results should be published in an intensity distribution table, indicating the intensity in cd/klm at each horizontal and vertical angle. The intensity distribution table should be converted by an accredited test facility and/or luminaire supplier into a suitable electronic format for use with any of the commercially available lighting computer programs.		
D3.7	PROTECTOR		
(a)	The protector shall be high-impact, toughened, clear flat glass.		
(b)	The protector shall form a seal completely preventing the entry of moisture, dust and insects into the lamp housing. A one-piece gasket, made of silicon sponge material, shall be fitted into groove in the housing and shall be seated in a manner ensuring the integrity of the IP66 rating and shall not work loose during maintenance of the luminaire		
D3.8	POWER SUPPLY OR DRIVER REQUIREMENTS		
(a)	LED module(s) drivers shall be housed fully within the sealed body of the luminaire		
(b)	The output frequency of the drivers shall be 100Hz or greater, to avoid visible flicker. The harmonic distortion levels of the LED module driver(s) shall comply with the limits as stipulated in SANS 61000-3-2		
(c)	The LED module driver(s) shall operate at a power factor of 0,95 or greater, and the harmonic distortion levels shall be limited so as to not cause interference on the electrical network.		
(d)	The power supply or driver compartment shall be sealed in the same manner as described in items 2.5.1 and 2.5.2		
(e)	The power supply or driver shall be able to withstand surges of up to 10kV/10ka by means of an external inline fused surge protection device mounted inside the gear compartment. This surge protection shall be easily replaceable		
(f)	The power supply or driver should incorporate a thermal switch to prevent exceeding the case temperature for maximum lifetime of equipment		
(g)	The lifetime of the power supply or driver shall be 100 000hrs with 90% survival over the lifetime		
D3.9	EARTHING		
(a)	The luminaire shall be earthed in accordance with Clause 13 of the Electrical Machinery Regulations of the OHSACT (Act 85 of 1993)		
(b)	Metal parts of luminaires which may become alive in the event of insulation fault and which are not accessible when the luminaire is mounted, but liable to come into contact with the supporting surface, shall be permanently and reliably connected to an earthing terminal and shall withstand the test specified in IEC 60598-2-3.		



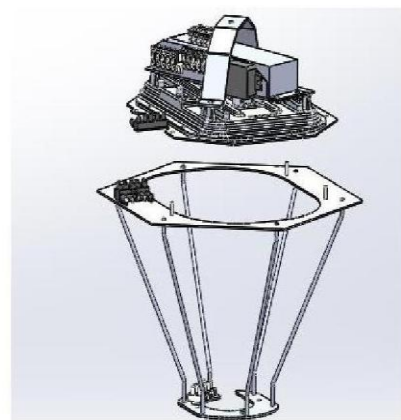
(c)	Earth connections shall be effected by means of suitable lugs in a manner avoiding all possibility of electrolytic corrosion		
D3.10	WIRING		
(e)	1 The internal wiring of the luminaires shall be flexible and suitably insulated to withstand the voltage and the temperature		
(f)	Wiring to the LED module compartment shall be suitably grommet, ensuring a perfect seal between compartments		
(g)	The supply terminals shall accept 4mm ² wires and easily accessible. No part of the cover shall damage the supply wires when closed.		
(h)	A clamp fitted for fastening supply wires to body of fitting.		
(i)	Have a supply lead 1,5mm silicone cap tire 10m long. With a 5A Barrel Fuse fitted on wire in, the fitting.		
D3.11	GUARANTEE		
(a)	All luminaires offered shall have a minimum guarantee period of five years		
(b)	The scope of this guarantee includes the LED module drivers, luminaire housing, LED module(s), brackets and protector		
(c)	If luminaires are found to have failed within this period as a result of poor manufacturing processes and/ or poor materials it shall be replaced free of charge by the manufacturer		

D4. LIGHT EMITTING DIODE POST TOP LUMINAIRE

Item No	Specifications	Yes	No
a	The luminaire shall consist of a spigot base, lamp compartment with integral control gear and top cover and shall be designed to operate 16LED 36W LED unit. The cable entry grommet shall be designed for the connection of a 3 x 1.5mm ² cab tyre of an overall diameter of 9mm The luminaire shall bear the SANS 475 performance mark and the SANS 60598-2-3 safety mark. Luminaire spigot entries comply with SANS 1088 –Table 1 for type 2:ø76mm x 75mm.		
b	The luminaire shall bear the SANS 475 performance mark and the SANS 60598-2-3 safety mark. Luminaire spigot entries comply with SANS 1088 –Table 1 for type 2:ø76mm x 75mm.		
c	The luminaire shall have a degree of protection that complies with SANS 60598-2-3		
d	Lamp compartment: IP 65		
e	The IP Rating shall be certified by an SABS test report (Attached as annexure)		
f	The top cover shall be robustly constructed from die-cast aluminium; powder coated for added protection in the colour RAL6005 and shall be firmly secured with a single aluminium décor casting. White reflective paint shall be on the inside		
g	The spigot base shall be manufactured from high-pressure die-cast aluminium, powder coated for added protection in the colour specified. The luminaire shall be secured to the pole by three M8 stainless steel grub screws.		
h.	The high-impact non-discolouring acrylic diffuser bowl shall be hexagonal in shape and shall be smooth on the outside, but shall have internal prisms to reduce the direct glare component. A drip ridge shall be provided at the bottom edge to avoid direct rain water contact with the gasket.		
i	The LED unit shall be designed to meet the lighting criteria for Group B roads as required. a. Design life: In excess of 15 years b. The LED replacement will be for existing 125W MV and or 70W HPS Post Tops on a mounting height of between 3-6m. The tenderer shall provide a photometric design proving that the offered unit can replace the 125W MV or 70W HPS units and retain the same lux levels as before. (Attached as annexure.....) c. The retrofit shall be down facing and completely glare free. The LED Engine shall be equipped with optical lenses to control the light in a specific direction		



j	The retrofit unit shall incorporate a temperature sensor which monitors the temperature of the LEDs on the PCBs. Once a critical temperature is reached, the current shall be reduced to a safe temperature level. The temperature sensor shall not completely switch off the LEDs at high temperatures, which shall facilitate maintenance to be undertaken during daylight hours.		
k	The power supply or driver shall be able to withstand surges of up to 10kV/10kA by means of an external inline fused surge protection device mounted inside the gear compartment. This surge protection shall be easily replaceable.		
l	The power supply or driver should incorporate a thermal switch to prevent exceeding the case temperature for maximum life time of equipment. The lifetime of the power supply or driver shall be 100 000hrs with 90% survival over the lifetime.		
m	Minimum IP rating of the sealed LED compartment shall be IP66.		
n	The Post Top luminaire shall be certified, in terms of SANS 60598, to operate at an ambient temperature of 35°C. The thermal design shall be particularly designed for African exterior conditions, i.e. high temperatures, high pollution, corrosion resistant.		
o	The LED life expectancy shall be 60,000 hours at 80% lumen maintenance		
p	Use of high efficiency >90 lumens / watt: LED's Absolute Photometry) CRI > 70. Documentary evidence of compliance to this clause shall be submitted with the tender. (Attached as)		
q	Colour temperature shall be neutral white (4000K) with an option to be supplied in warm white (3000K)		
Power Supply			
	• The power factor shall be rat • The power supply shall be removable and shall be suitable for operation with the specified rating of the lamp on a 120-277 VAC 50Hz single phase system. • Operating temperatures shall be from -15deg to +60deg on the housing (case temperature • Operating humidity shall be from 20% to 95%. • The control gear shall incorporate a thermal switch for protection when exceeding the case temperature • Provisions shall be made to withstand surges up to 10kV/10kA.		
	The unit shall be EMC compliant to the SANS 55015 and SANS 61347-1 Standard		
	All internal wiring shall be teflon® coated with protective sleeving to prevent damage by possible abrasion. All screws, bolts and metal parts shall be stainless steel or noncorrosive material. Mains connections shall be by means of a Suitable screw terminal block with a wire clamping contact		
	Only offers for LED post top luminaires which are manufactured and supported by the original manufacturer, with maintenance facilities and spare parts located in South Africa will be Considered.		
	The LED post top luminaire shall be identical and similar to the below two-line drawing/artist impressions.		



LED Luminaire Complete

LED Retrofit

D6. DAY/NIGHT SWITCHES

ITEM No	DESCRIPTION	Max Switching capacity	Voltage(V)	Width(mm)	Height (mm)	Yes	No
D6.1	To be convenient for wall or any other flat surface mounting. Watertight junction box to be equipped with strip connectors, brackets, six side inlets and one rear inlet to ensure installation versatility. Side inlets to be M20 treaded with re-insertable knock outs	16	230	87	87		
D6.2	To be suitable for mounting inside enclosures such as substations, electrical boxes and streetlight luminaires. Equipped with M20 entry, terminal block and 300mm wire leads. Fixing the daylight switch may be either by the enclosed bracket or by securing a 20mm diameter hole with the enclosed locknut together with rubber seals.	16	230	32	68.8		

D8. NON-SPARKING END CONNECTORS AND INSULATING SLEEVES

							Compliance	
ITEM No	DESCRIPTION	Conductor size	Internal(hole) diameter(mm2)	Length (mm)	Height(mm)	Allen key size	Yes	No
D8.1	The non-sparking end connector shall be made from brass and nickel with a screw on top that can only be opened or	2 x 16mm2	10mm2	13	13	4		
D8.2		2 x 25mm2	13.5mm2	15	19	4		



	tightened with an Allen key							
--	--------------------------------	--	--	--	--	--	--	--

ITEM NO	Descriptio	Compliance	
		YES	NO
	- The luminaire must be able fit on a standard 76mm streetlight pole. - The luminaire must be produced in an ISO 9001 accredited factory within South Africa - Luminaire - The luminaire should offer efficient thermal management of the LED's. - The battery, charge controller and LED engine compartments shall be clearly separated to ensure the intended battery life is achieved. - All compartments as mentioned above shall be able to be accessed individually to ensure future maintenance occurs without another being compromised. - The luminaire must be IP66 rated. - The LED engine compartment should be sealed by means of a silicone gasket and use IK07 acrylic diffuser for the post top version and IK 10 polycarbonate diffuser for the streetlight version to ensure maximum efficiency and easy cleaning – so called "IP rated lenses" will not be acceptable. - The LED's lifetime used should at least be L70B10 based on 60 000 hours @ TQ 25° C. - The luminaire housing must be manufactured of durable NON-CORROSIVE material to withstand the most corrosive environments. The different components shall be manufactured of the following: Post Top Version: - Spigot – Marine grade high-pressure die-cast aluminium (EN 1706 AC-44300) - Top cover – Acrylonitrile styrene acrylate (ASA) - Protector – Hexagon Shaped High-impact Acrylic Streetlight Version: - Housing – Marine grade high-pressure die-cast aluminium (EN 1706 AC-44300) - Top cover – Acrylonitrile styrene acrylate (ASA) - Protector – High-impact Polycarbonate - Material certificates should be submitted at the time of tender. - The LED's should be able to be supplied in the standard option of 4000K, however also have options to supply in 3000 and 5700K. - The Luminaire entries and spigots shall comply with SANS 1088 Photovoltaic Panels - The photovoltaic panels must be Tier 1 Photovoltaic modules which ensures optimum performance and reliability. The solar panel must have a minimum capacity of: 30W Streetlight 200W 26W Post Top 200W 46W Streetlight 400W - The panel type should be able to ensure maximum harvesting of the available energy, even in low light conditions.		



	• Tier 1 manufacturers offer a 25-year linear performance warranty for a minimum of 81% of the nominal power output of the module over the 25-year life cycle as well as a 10-year product warranty. • Further the panels have a global quality standards certification in accordance with IEC-standards 61215 and IEC 61730 and this assures compliance to international quality control standards. • The SOLAR panel should be wrapped neatly around the pole to conceal the battery housing. Power storage devices – • LiFePO4 (Lithium Iron Phosphate) technology should be offered as a minimum standard. • In addition, all LiFePO4 battery packs must have an integrated Battery Management System (BMS) which monitors the health, charging and discharging of the battery pack. This safeguards the cells so that they are not over charged or discharged, maximising their lifetime. The energy storage must have a minimum capacity of: • 30W Streetlight 42Ah • 26W Post Top 42Ah • 46W Streetlight 84Ah • Battery pack operating temperature: -20°C to +40°C. • The battery pack should be housed within an external HDG battery enclosure and mounted on a standard 76mm streetlight pole. • The LiFePO4 battery used should have a minimum warranty of 5 (five) years. Charge Controller – • The charge controller must regulate the flow of current from the solar panel to the battery during daytime and from the battery to the luminaire at night time. • The charge controller should be of the MPPT type as PWM controllers would not be permitted. • The charge controller should prevent the power storage device from overcharging and deep discharging past 80%, thus increasing system efficiency and expected lifespan. • The charge controller should act as a daylight switch by monitoring the voltage produced by the PV panel. When the voltage dips below a predetermined level it assumes that the sun has set and switches the luminaire on. When the voltage climbs above this threshold again, the charge controller assumes that the sun has risen and switches the luminaire off again. • Even at low sun radiation periods due to inclement weather, the charge controller used should be of the “anti-blackout” type, meaning that the charge controller will assess energy stored and regulate the output in a way that would avoid total darkness from occurring. The following features are mandatory in the offered solar solution: • Voltage and current regulation • Programmable charging technology • Current compensated load disconnection • Automatic load reconnection • Temperature compensation • Integrated self-test • Overcharge protection • Deep discharge protection • Reverse polarity protection of load, module and battery		
--	---	--	--

	• Short circuit protection of load and module • Open circuit protection without battery • Reverse current protection at night • Over-temperature and overload protection • Battery overvoltage shutdown Technical Illumination Performance • A conforming lighting design should be submitted at time of tender indicating the required road class is achievable at 100% lumen output. • The luminaire should be able to meet the various SANS lighting requirements through effective dispersion of light through lens distributions. • The luminaire may in no way be tilted to achieve the required values and must be installed on the fixed spigot provided which would not exceed the 5-degree tilt as designed for. • Increasing the luminaire tilt will increase the windage risk to the pole structure and may not occur. • Any luminaire not meeting a minimum required output of 160lumen/W (nominal flux) would not be considered. • The dimming profile should be clearly indicated. • No movement sensors will be allowed. • The luminaire total output @ 100% should be stated clearly by means of a relevant table that could be assessed by normal math calculation. Nominal flux for the luminaire @ 100% operation shall be greater than: • 30W Streetlight 5100 lumen • 26W Post Top 4200 lumen • 46W Streetlight 8500 lumen		
--	--	--	--

D.11.6 LED Streetlight Luminaires

		Compliance															
ITEM NO	Description	YES	NO														
	SCOPE This specification details the manufacture, testing, supply and delivery of street light luminaires, as specified below. The street light luminaires shall be suitable for use with light emitting diode (LED) technology. <table><tr><td>CIE Publication 27</td><td>Photometry of luminaires for street lighting</td></tr><tr><td>SATS 17576:2014</td><td>Light-emitting diode products for interior lighting, streetlighting and floodlighting — Performance requirements</td></tr><tr><td>IEC 60598-1</td><td>Luminaires - Part 1: General requirements and tests</td></tr><tr><td>IEC 60598-2-3</td><td>Luminaires - Part 2: Particular requirements - Section 3: Luminaires for road and street lighting</td></tr><tr><td>SANS 475</td><td>Luminaires for interior lighting, streetlighting and floodlighting Performance requirements</td></tr><tr><td>SANS 529</td><td>Heat-resisting wiring cables</td></tr><tr><td>SANS 121</td><td>Hot dip galvanized coatings on fabricated iron and steel articles — Specifications and test methods.</td></tr></table>	CIE Publication 27	Photometry of luminaires for street lighting	SATS 17576:2014	Light-emitting diode products for interior lighting, streetlighting and floodlighting — Performance requirements	IEC 60598-1	Luminaires - Part 1: General requirements and tests	IEC 60598-2-3	Luminaires - Part 2: Particular requirements - Section 3: Luminaires for road and street lighting	SANS 475	Luminaires for interior lighting, streetlighting and floodlighting Performance requirements	SANS 529	Heat-resisting wiring cables	SANS 121	Hot dip galvanized coatings on fabricated iron and steel articles — Specifications and test methods.		
CIE Publication 27	Photometry of luminaires for street lighting																
SATS 17576:2014	Light-emitting diode products for interior lighting, streetlighting and floodlighting — Performance requirements																
IEC 60598-1	Luminaires - Part 1: General requirements and tests																
IEC 60598-2-3	Luminaires - Part 2: Particular requirements - Section 3: Luminaires for road and street lighting																
SANS 475	Luminaires for interior lighting, streetlighting and floodlighting Performance requirements																
SANS 529	Heat-resisting wiring cables																
SANS 121	Hot dip galvanized coatings on fabricated iron and steel articles — Specifications and test methods.																



	SANS 1088	Luminaire entries and spigots		
	SANS 60529	Degrees of protection provided by enclosures (IP Code)		
	ISO 4762	Hexagon socket head cap screws		
	SANS 1507	Electric cables with extruded solid dielectric insulation for fixed installations (300/500 V to 1 900/3 300 V) Part 3: PVC Distribution cables		
	SANS 1574	Electric flexible cores, cords and cables with solid extruded dielectric insulation Part 3: PVC-insulated cores and cables		
	SANS ARP 035	Guidelines for the installation and maintenance of street lighting		
	OHSACT (Act 85 of 1993)	Occupational Health and Safety Act and Regulations		
	SANS 61000-3-2	Electromagnetic compatibility (EMC) Part 3-2: Limits — Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)		
	IEC 61000-4-5	Electromagnetic compatibility (EMC) - Surge immunity test		
	IEC 55015	Limits and methods of measurements of radio disturbance characteristics of electrical lighting and similar equipment		
	IEC 5502	Information technology equipment. Radio disturbance characteristics		
	TECHNICAL REQUIREMENTS OF LED STREETLIGHTING LUMINAIRES			
	- The luminaires shall be delivered completely assembled with housing, driver, LED module and lens. - Luminaires shall be Class 1 of IEC 60598-1 and be of the totally enclosed type. - The luminaire output shall be provided as output flux at Tq of 25 °C, Nominal flux will not be considered. - The colour temperature of the luminaires shall be neutral white, 4 000K. No other colour temperature will be accepted. - The colour rendering index of the luminaires shall be 70 (minimum). - The performance of LED luminaires shall be verified by designing the lighting of the appropriate road as per SANS ARP 035 on request. - The luminaires shall deliver 90% of the initial lumens, when installed for 100 000 hours with a 10% maximum LED failure rate (L90B10). The bidder shall provide a lumen depreciation graph by means of the IES LM 80-08 data of the LEDs. - The LED light source test data shall provide the expected data for at least 25% of rated LED light source lifetime, i.e. 15 000hrs - The following information and conditions shall be met and the manufacturer shall supply test data that includes, but is not limited to, the following: - The LED light source(s) have been tested according to LM-80-08. - The LED drive current specified by the luminaire manufacturer is less than or equal to the drive current specified in the LM-80 test report. - The LED light source(s) manufacturer prescribes/indicates a temperature measurement point (Ts) on the light source(s). - The Ts is accessible to allow temporary attachment of a thermocouple for measurement of in-situ temperature. Access via a temporary hole in the housing, tightly resealed during testing with putty or other flexible sealant is allowable. - For the hottest LED light source in the luminaire, the			



	temperature measured at the Ts is less than or equal to the temperature specified in the LM-80 test report for the corresponding drive current. • Temperature sensors shall be fitted as protection devices to the luminaire, placed directly next to the LEDs. These shall not switch off the luminaire completely. Full details of how the luminaire manages its temperature through the use of sensors and the effect on lumen maintenance shall be supplied. • The luminaire shall be designed in such a manner that there is a thermal separation between the optical and gear compartments. This will allow air to freely flow through and ensure optimal cooling of the luminaire especially during possible daytime maintenance. • Lifespan estimation deterioration curves of LED to be submitted for various design currents, e.g. 350 mA, 500 mA, 700 mA, etc. on request. • The complete assembly and testing of the LED luminaire/s shall be undertaken in South Africa, within an ISO 9001 certified factory. • Luminaires shall further comply with the following standards: • IEC 55015 "Limits and methods of measurements of radio disturbance characteristics of electrical lighting and similar equipment" • IEC 5502 "Information technology equipment. Radio disturbance characteristics." • IEC 61000-4-5 "Electromagnetic compatibility (EMC) - Surge immunity test" IP Rating The luminaires shall have minimum rating of IP 66 in accordance with SANS 60529 for both the control gear (driver) and optical (LED engine) compartments, when normally mounted as per SANS 475. Construction of Luminaires • The housing shall be robustly constructed, weatherproof, hailproof, insectproof, corrosion proof, ultra-violet light resistant and vandal resistant. Luminaires shall be suitable for operation at an ambient temperature, Ta, of 35 °C. Fixing devices, junctions, lips and the like shall be designed to shed water. Pockets and ledges in which condensation may accumulate shall be avoided. • The luminaires shall contain a heat sink with no fans, pumps or liquids, and the design of the heat sink shall prevent the accumulation of dirt and nesting of insects or ants, thus ensuring effective heat dissipation. Heat from the LED source should take the shortest path to the exterior by direct conduction or any other reliable form of cooling that will not compromise the useful life of the LEDs. • Luminaires shall have three separate compartments being: the optical compartment with LED engine, the control gear compartment and the spigot compartment, and shall have a minimum degree of protection of IP66 for the optical and control gear compartments. • The cooling fins shall be designed in such a manner to prevent the accumulation of dirt, thus ensuring the continuous effective cooling. Additionally, the top surface shall be slightly curved in shape. • The luminaires shall have die cast aluminium housings and shall be of grade EN1706 AC44300, (or higher) aluminium alloy. Bidders shall submit a metallurgical report from an	
--	---	--



	independent metallurgist confirming the grade of aluminium for all the luminaires offered. The Municipality reserves the right to submit luminaires for metallurgical testing when necessary. • The luminaires shall be supplied in raw aluminium finish. i.e. The finish shall be unpainted. • Ferrous components shall be hot dip galvanised and shall withstand the test specified in the current edition of SANS 121 for heavy duty application. • Small components (such as toggle clips, bolts, screws, nuts, washers) shall be manufactured of stainless steel (grade 304 or better) • The replacement (upgrading and service) of the LED unit and the driver/power supply shall be possible without removing the whole luminaire but by means of replacing only the optical/gear compartment by means of a hinging mechanism, or other such simple method which does not require tools, to allow integration of future technological development of LEDs and power supply. • 3.3.10 The driver shall be mounted internally and be replaceable with the aid of commonly available hand tools. • 3.3.11 The luminaire housing shall incorporate an IP 68 rated air pressure relief valve to ensure longevity and reliability on the total luminaire IP rating as well as reducing potential condensation on the polycarbonate protector. Mounting • Galvanised mild steel supporting spigot to such a degree that deterioration by electrolytic action will not occur. • Spigot entries shall be designed to fit easily over the bracket pipe and shall be truly parallel to the fitting axis and shall comply with Table 1 of SANS 1088:1990 as follows: • For Type 2 luminaires (side entry): Nominal size - 42 mm. • The luminaire shall be secured on its spigot by at least two stainless steel M8 screws as specified in ISO 4762, which are screwed into stainless steel sockets or any other proven method to prevent cathodic corrosion between stainless steel and aluminium. The construction of the housing shall be such that cracking cannot occur during the process of fixing the luminaire to the pole or bracket. The attachment of the luminaire should be designed to withstand wind speeds of up to 150 km/h on the projected surface of the luminaire without due deflection. • The luminaire will be fitted with a spirit level to ensure ease of true horizontal mounting. Protector • The photometrical lens, covering each individual LED, shall not be exposed directly to the elements of nature and will have a separate high impact, IK10 rated, clear flat polycarbonate protector covering the complete optical (LED) compartment. • The protector shall form a seal completely preventing the entry of moisture, dust and insects into the optical (LED) compartment. A one-piece gasket of silicon sponge material shall be used for this purpose. Gaskets shall not deteriorate or suffer permanent deformation due to light, heat or compression, to which they will be exposed in practice, during the life of the luminaire. • The gasket shall be fitted into a groove in the housing and shall be seated in a manner ensuring the integrity of the IP66 rating and shall not work loose during maintenance of the	
--	---	--



	luminaire. <u>Power Supply or Driver Requirements</u> • LED module(s) drivers shall be housed fully within the body of the luminaire and be suitable for operation with the specified rating of luminaire. • The output frequency of the drivers shall be 100 Hz or greater, to avoid visible flicker. • The LED module driver(s) shall be equipped with 1-10V dimming feature for further energy savings if required via a preprogrammed step dimming scene if and when required. • The LED module driver(s) shall operate at a power factor of 0,95 or greater, and the total harmonic distortion levels shall be less than 20% so as to not cause interference on the electrical network and shall comply with the limits given in SANS 61000-3-2. • The control gear (or driver) compartment shall be sealed in the same manner as described in items 3.5.2 and 3.5.3. • The control gear (or driver) compartment shall be so designed that there is sufficient space to permit repairs, replacement of components and reassembly without difficulty and without the removal of the luminaire from its mounting. • The power supply or driver shall be able to withstand surges of up to 10kV/10kA by means of an external, inline fused surge protection device. This surge protection device shall be easily replaceable and it shall fail in an open circuit mode to protect the luminaire from further surges. • The lifetime of the power supply (driver) shall be 100 000hrs with 90% survival over the lifetime. • The power supply (driver) shall incorporate a thermal switch to prevent exceeding the case temperature for maximum life time of equipment. <u>Earthing</u> • The luminaire shall be earthed in accordance with Clause 13 of the Electrical Machinery Regulations of the OHSACT (Act 85 of 1993). • Metal parts of luminaires which may become live in the event of an insulation fault, which are not accessible when the luminaire is mounted but liable to come into contact with the supporting surface, shall be permanently and reliably connected to an earthing terminal and shall withstand the test specified in IEC 60598-2-3. • Protection against electric shock shall be maintained for all methods and positions of installation in normal use. Protection shall also be maintained after removal of all parts which can be removed by hand. • Earthing terminals shall comply with sub-clause 7.2 of IEC 60598-All parts of an earth terminal shall be made of brass or other corrosion resistant metal and the contact surfaces shall be bare metal and not painted or varnished surfaces. • All earth connections shall be effected by means of suitable lugs appropriately made to avoid all possibility of electrolytic corrosion. • An earth connection shall be provided in all instances, even if the luminaire is fully insulated and even if all conductive parts, which could become live in the event of an insulation fault, are not accessible. This is to facilitate future wiring should the luminaire be replaced by a unit which requires an earth connection.	
--	--	--

	Wiring - The internal wiring of the luminaires shall be flexible and suitably insulated to withstand the voltage and the temperature encountered in service. Wiring colours shall be: live-brown (or red), neutral-blue (or black) and earth-green/yellow. - Wiring to the LED module compartment shall be suitably grommited, ensuring a perfect seal between compartments and protection of the wiring. - The supply terminals shall accept 4mm² wires and be easily accessible. No part of the cover shall damage the supply wires when closed. - The electrical power supply shall automatically disconnect when the luminaire is opened, typically through the use of a blade/knife switch connector, allowing safe access to the inner components. Optics - Although the LED streetlight luminaire shall be supplied with a specific and stated optic distribution, various different optic distributions shall be available as a standard, at no extra cost. This is to ensure that specific distributions may be considered, per project type, for upgrading of existing installations as well as new installations. Maximum weight & Aerodynamic resistance of LED streetlight luminaires Due to most installations being a retrofit of existing infrastructure, a maximum weight & aerodynamic resistance limit will apply for the replacement unit to ensure that historical pole loading is not exceeded. Detail of each is tabled below. LED STREETLIGHT LUMINAIRE MARKINGS Each luminaire shall be distinctly marked in clear lettering on the outside of the control gear compartment, with the following information: Rated wattage of luminaire in accordance with the description specified, e.g. 50 W LED. The name of supplier followed by the luminaire model, e.g. SUPPLIER X, LUMINAIRE MODEL NAME Each luminaire shall bear the name or trademark of the manufacturer and the date of manufacture Luminaires delivered without the specified markings shall be rejected. LED STREETLIGHT LUMINAIRE PACKAGING Each luminaire shall be delivered completely assembled ready for use and shall be individually packed in suitable containers such as cardboard boxes. The containers shall be marked with appropriate description and stock code of the luminaire contained within. LED LUMINAIRE DOCUMENTATION AND TEST REPORT TO BE SUBMITTED WITH THE OFFER - Full technical and descriptive details, relating to all the items offered in this enquiry shall be submitted so the offer can be fully evaluated. Failure to provide the documents & test reports below may result in the rejection of the Bid: This shall include: - Name of LED luminaire. - Luminaire product sheet stating all relevant information ie,	
--	--	--



	weight, aerodynamic resistance, wattage, output lux, ect. • LM-80-08 test report for the LED's used in the luminaire • Type test according to IEC 60598-1:2004 and IEC 60598-2-3:2003 • IP rating test reports for all items offered in accordance with SANS 60529. • Bidders shall submit a metallurgical report confirming the grade of aluminium of the aluminium housings. • ISO 9001:2015 certificate of the factory producing the luminaires • The test reports shall be issued by SANS or IEC accredited test authority. LED LUMINAIRE SAMPLES When samples are requested for evaluation, properly labelled samples (Contract/Enquiry number, the item number and the bidding company name) shall be delivered to Motla Consulting Engineers. Motla Consulting reserves the right to submit samples to such tests as deemed reasonable and necessary. GUARANTEE All luminaires offered shall have a minimum guarantee period of five years. If luminaires are found to have failed within this period as a result of poor manufacturing processes and/or poor materials it shall be replaced free of charge by the manufacturer.	
--	--	--

D.11.7 LED FLOODLIGHT LUMINAIRES

		Compliance	
ITEM NO	Description	YES	NO
	SCOPE This specification details the manufacture, testing, supply and delivery of floodlight luminaires, as specified below. The floodlight luminaires shall be suitable for use with light emitting diode (LED) technology.		
	CIE Publication 27	Photometry of luminaires for street lighting	
	SATS 17576:2014	Light-emitting diode products for interior lighting, streetlighting and floodlighting — Performance requirements	
	IEC 60598-1	Luminaires - Part 1: General requirements and tests	
	IEC 60598-2-5	Luminaires - Part 2: Particular requirements - Section 5: Floodlights	
	SANS 475	Luminaires for interior lighting, streetlighting and floodlighting Performance requirements	
	SANS 529	Heat-resisting wiring cables	
	SANS 121	Hot dip galvanized coatings on fabricated iron and steel articles — Specifications and test methods.	
	SANS 1088	Luminaire entries and spigots	
	SANS 60529	Degrees of protection provided by enclosures (IP Code)	



ISO 4762	Hexagon socket head cap screws		
SANS 1507	Electric cables with extruded solid dielectric insulation for fixed installations (300/500 V to 1 900/3 300 V) Part 3: PVC Distribution cables		
SANS 1574	Electric flexible cores, cords and cables with solid extruded dielectric insulation Part 3: PVC-insulated cores and cables		
SANS ARP 035	Guidelines for the installation and maintenance of street lighting		
OHSACT (Act 85 of 1993)	Occupational Health and Safety Act and Regulations		
SANS 61000-3-2	Electromagnetic compatibility (EMC) Part 3-2: Limits — Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)		
IEC 61000-4-5	Electromagnetic compatibility (EMC) - Surge immunity test		
IEC 55015	Limits and methods of measurements of radio disturbance characteristics of electrical lighting and similar equipment		
IEC 5502	Information technology equipment. Radio disturbance characteristics		
TECHNICAL REQUIREMENTS OF LED FLOODLIGHTING LUMINAIRES General - The luminaires shall be delivered completely assembled with housing, driver, LED module and lens. - Luminaires shall be Class 1 of IEC 60598-1 and be of the totally enclosed type. - The luminaire output shall be provided as output flux at T_q of 25 °C, Nominal flux will not be considered. - The colour temperature of the luminaires shall be neutral white, 4 000K or 5700K where stated. No other colour temperature will be accepted. - The colour rendering index of the luminaires shall be 70 (minimum). - The performance of LED luminaires shall be verified by designing the lighting of the appropriate road as per SANS ARP 035 on request. - The luminaires shall deliver 90% of the initial lumens, when installed for 100 000 hours with a 10% maximum LED failure rate (L90B10) unless stated otherwise elsewhere. The bidder shall provide a lumen depreciation graph by means of the IES LM 80-08 data of the LEDs. - The LED light source test data shall provide the expected data for at least 25% of rated LED light source lifetime, i.e. 15 000hrs - The following information and conditions shall be met, and the manufacturer shall supply test data that includes, but is not limited to, the following: - The LED light source(s) have been tested according to LM-80-08. - The LED drive current specified by the luminaire manufacturer is less than or equal to the drive current specified in the LM-80 test report. - The LED light source(s) manufacturer prescribes/indicates a temperature measurement point (T_s) on the light source(s). - The T_s is accessible to allow temporary attachment of a thermocouple for measurement of in-situ temperature. Access via a temporary hole in the housing, tightly resealed during testing with putty or other flexible sealant is allowable. - For the hottest LED light source in the luminaire, the temperature measured at the T_s is less than or equal to the temperature specified in the LM-80 test report for the corresponding drive current. - Temperature sensors shall be fitted as protection devices to the luminaire, placed directly next to the LEDs. These shall not switch off the luminaire completely. Full details of how the luminaire manages its temperature through the use of sensors and the effect on lumen maintenance shall be supplied.			



- The luminaire shall be designed in such a manner that there is a thermal separation between the optical and gear compartments. This will allow air to freely flow through and ensure optimal cooling of the luminaire especially during possible daytime maintenance.
- Lifespan estimation deterioration curves of LED to be submitted for various design currents, e.g. 350 mA, 500 mA, 700 mA, etc. on request.
- The complete assembly and testing of the LED luminaire/s shall be undertaken in South Africa, within an ISO 9001 certified factory.
- Luminaires shall further comply with the following standards:
- IEC 55015 "Limits and methods of measurements of radio disturbance characteristics of electrical lighting and similar equipment"
- IEC 5502 "Information technology equipment. Radio disturbance characteristics."
- IEC 61000-4-5 "Electromagnetic compatibility (EMC) - Surge immunity test"

IP Rating

The luminaires shall have minimum rating of IP 66 in accordance with SANS 60529 for both the control gear (driver) and optical (LED engine) compartments, when normally mounted as per SANS 475.

Construction of Luminaires

- The housing shall be robustly constructed, weatherproof, hailproof, insectproof, corrosion proof, ultra-violet light resistant and vandal resistant. Luminaires shall be suitable for operation at an ambient temperature, T_a , of 35 °C. Fixing devices, junctions, lips and the like shall be designed to shed water. Pockets and ledges in which condensation may accumulate shall be avoided.
- The luminaires shall contain a heat sink with no fans, pumps or liquids, and the design of the heat sink shall prevent the accumulation of dirt and nesting of insects or ants, thus ensuring effective heat dissipation. Heat from the LED source should take the shortest path to the exterior by direct conduction or any other reliable form of cooling that will not compromise the useful life of the LEDs.
- Luminaires shall have a minimum degree of protection of IP66 for the optical and control gear compartments.
- The cooling fins shall be designed in such a manner to prevent the accumulation of dirt, thus ensuring the continuous effective cooling.
- The luminaires shall have die cast aluminium housings and shall be of grade EN1706 AC44300, (or higher) aluminium alloy. Bidders shall submit a metallurgical report from an independent metallurgist confirming the grade of aluminium for all the luminaires offered. The Municipality reserves the right to submit luminaires for metallurgical testing when necessary.
- The luminaires shall be supplied in raw aluminium finish. i.e. The finish shall be unpainted.
- Ferrous components shall be hot-dip galvanised and shall withstand the test specified in the current edition of SANS 121 for heavy duty application.
- Small components (such as toggle clips, bolts, screws, nuts, washers) shall be manufactured of stainless steel (grade 304 or better)
- The driver shall be mounted internally and be replaceable with the aid of commonly available hand tools.
- The luminaire housing shall incorporate an IP 68 rated air pressure relief valve to ensure longevity and reliability on the total luminaire IP rating as well as reducing potential condensation on the protector.

Mounting

The stirrup shall be manufactured from a minimum 6mm x 60mm hot-dipped galvanized steel. A minimum of three pre-drilled mounting holes shall be provided in the stirrup.

Protector



- The photometrical lens, covering each individual LED, shall not be exposed directly to the elements of nature and will have a separate high impact, IK10 rated, clear polycarbonate protector covering the complete optical (LED) compartment.
- The protector shall form a seal completely preventing the entry of moisture, dust and insects into the optical (LED) compartment. A one-piece gasket of silicon sponge material shall be used for this purpose. Gaskets shall not deteriorate or suffer permanent deformation due to light, heat or compression, to which they will be exposed in practice, during the life of the luminaire.
- The gasket shall be fitted into a groove in the housing and shall be seated in a manner ensuring the integrity of the IP66 rating and shall not work loose during maintenance of the luminaire.

Power Supply or Driver Requirements

- LED module(s) drivers shall be housed fully within the gear compartment of the luminaire and be suitable for operation with the specified rating of luminaire.
- The output frequency of the drivers shall be 100 Hz or greater, to avoid visible flicker.
- The LED module driver(s) shall operate at a power factor of 0,95 or greater, and the total harmonic distortion levels shall be less than 20% so as to not cause interference on the electrical network and shall comply with the limits given in SANS 61000-3-2.
- The control gear (or driver) compartment shall be sealed in the same manner as described in items 3.5.2 and 3.5.3.
- The control gear (or driver) compartment shall be so designed that there is sufficient space to permit repairs, replacement of components and reassembly without difficulty and without the removal of the luminaire from its mounting.
- The power supply or driver shall be able to withstand surges of up to 10kV/10kA by means of an external, inline fused surge protection device. This surge protection device shall be easily replaceable and it shall fail in an open circuit mode to protect the luminaire from further surges.
- The lifetime of the power supply (driver) shall be 100 000hrs with 90% survival over the lifetime.
- The power supply (driver) shall incorporate a thermal switch to prevent exceeding the case temperature for maximum life time of equipment .

Earthing

- The luminaire shall be earthed in accordance with Clause 13 of the Electrical Machinery Regulations of the OHSACT (Act 85 of 1993).
- Metal parts of luminaires which may become live in the event of an insulation fault, which are not accessible when the luminaire is mounted but liable to come into contact with the supporting surface, shall be permanently and reliably connected to an earthing terminal and shall withstand the test specified in IEC 60598-2-3.
- Protection against electric shock shall be maintained for all methods and positions of installation in normal use. Protection shall also be maintained after removal of all parts which can be removed by hand.
- Earthing terminals shall comply with sub-clause 7.2 of IEC 60598-1. All parts of an earth terminal shall be made of brass or other corrosion resistant metal and the contact surfaces shall be bare metal and not painted or varnished surfaces.
- All earth connections shall be affected by means of suitable lugs appropriately made to avoid all possibility of electrolytic corrosion.
- An earth connection shall be provided in all instances, even if the luminaire is fully insulated and even if all conductive parts, which could become live in the event of an insulation fault, are not accessible. This is to facilitate future wiring should the luminaire be replaced by a unit which requires an earth connection .

Wiring

- The internal wiring of the luminaires shall be flexible and suitably insulated to



	withstand the voltage and the temperature encountered in service. Wiring colours shall be: live-brown (or red), neutral-blue (or black) and earth-green/yellow. - Wiring to the LED module compartment shall be suitably grommited, ensuring a perfect seal between compartments and protection of the wiring. - The supply terminals shall accept 4mm² wires and be easily accessible. No part of the cover shall damage the supply wires when closed. Optics - Although the LED floodlight luminaire shall be supplied with a specific and stated optic distribution, various different optic distributions shall be available as a standard, at no extra cost. This is to ensure that specific distributions may be considered, per project type, for upgrading of existing installations as well as new installations. <u>Maximum weight & Aerodynamic resistance of LED floodlight luminaires:</u> - Due to most installations being a retrofit of existing infrastructure, a maximum weight & aerodynamic resistance limit will apply for the replacement unit to ensure that historical pole loading is not exceeded. - Detail of each is tabled below. LED FLOODLIGHT LUMINAIRE MARKINGS Each luminaire shall be distinctly marked in clear lettering on the outside of the control gear compartment, with the following information: Rated wattage of luminaire in accordance with the description specified, e.g. 50 W LED; The name of supplier followed by the luminaire model, e.g. SUPPLIER X, LUMINAIRE MODEL NAME Each luminaire shall bear the name or trademark of the manufacturer and the date of manufacture Luminaires delivered without the specified markings shall be rejected. LED FLOODLIGHT LUMINAIRE PACKAGING Each luminaire shall be delivered completely assembled ready for use and shall be individually packed in suitable containers such as cardboard boxes. The containers shall be marked with appropriate description and stock code of the luminaire contained within. LED LUMINAIRE DOCUMENTATION AND TEST REPORT TO BE SUBMITTED WITH THE OFFER Full technical and descriptive details, relating to all the items offered in this enquiry shall be submitted so the offer can be fully evaluated. Failure to provide the documents & test reports below may result in the rejection of the Bid: This shall include: Name of LED luminaire. Luminaire product sheet stating all relevant information ie, weight, aerodynamic resistance, wattage, output lux, ect. LM-80-08 test report for the LED's used in the luminaire Type test according to IEC 60598-1:2004 and IEC 60598-2-5:2003 IP rating test reports for all items offered in accordance with SANS 60529. Bidders shall submit a metallurgical report confirming the grade of aluminium of the aluminium housings. ISO 9001:2015 certificate of the factory producing the luminaires. The test reports shall be issued by SANS or IEC accredited test authority. LED LUMINAIRE SAMPLES
--	--



	When samples are requested for evaluation, properly labelled samples (Contract/Enquiry number, the item number and the bidding company name) shall be <u>delivered</u> to Stellenbosch Municipality Stellenbosch Municipality reserves the right to submit samples to such tests as deemed reasonable and necessary. GUARANTEE All luminaires offered shall have a minimum guarantee period of five years. If luminaires are found to have failed within this period as a result of poor manufacturing processes and/or poor materials it shall be replaced free of charge by the manufacturer.
--	---

SECTION E: DISTRIBUTION & METERING KIOSKS, POLE MOUNTED & SURFACE MOUNTED DISTRIBUTION BOXES AND ACCESSORIES

E1. METERING AND DISTRIBUTION KIOSK

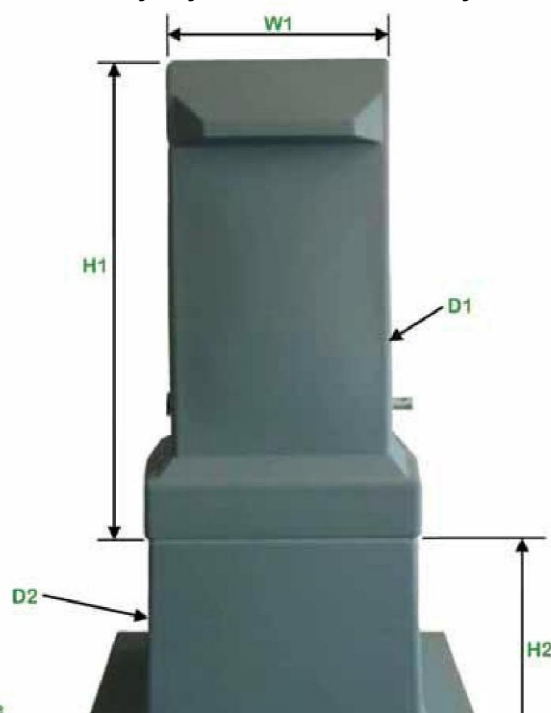
No	Description				
E1.1. a	GENERAL: POLYETHYLENE KIOSK				
i.	Nothing in this specification shall lessen the obligations of the supplier. The supplier shall be fully Responsible for the design and its satisfactory performance in service. Approval by Stellenbosch Municipality shall not relieve the supplier of the responsibility for the adequacy of the design.				
ii.	The specification covers the requirements for meter kiosks and distribution kiosks. Meter kiosks and distribution kiosks shall be manufactured in accordance to NRS 056 part 1. The specific Requirements for Stellenbosch Municipality are specified below. Where conflicting requirements with NRS 056 occur, this specification shall take precedence.				
E1.1. b	COMPLIANCE WITH STANDARD SPECIFICATIONS			YES	NO
i.	Service Distribution Boxes –Meter Kiosks and Distribution Kiosks –Part 1: Low-voltage non-steel meter kiosks for use in underground networks	NRS 056 -1:2005			
ii.	Low-voltage switchgear and control gear assemblies (distribution boards) with a rated short-circuit withstand strength up to and including 10kA	SANS 1765:2003			
E1.1.c	CONSTRUCTIONAL REQUIREMENTS			YES	NO
i.	Material	Ultra-violet stabilized Linear Low Density Polyethylene (LLDPE) using rotational moulding			
ii.	Construction	Design of the unit to be such that all external surfaces are —roundedll to pre be rigidly moulded and have high impact resistance and dielectric strength. LLDPE used must be chemically resistant and resistant to deterioration from prolonged contact with soil and/or moisture. Must be resistant to abrasion and heat and specifically treated with stabilizing additives to provide enhanced UV breakdown resistance. Materials used must be free from blow holes and defects.			
iii.	Mounting frame	Root and frame must be moulded as one self-supporting polyethylene equipment mounting panel, so as to decrease to likelihood of condensation. The frame must contain a 19mm wooden block board inserted the whole width and length of the frame.			
iv.	Colour	Dark Grey/Avocado Green			
v.	Roof	pitched roof only			



vi.	Doors & Hinges	Must be manufactured from polyethylene. Must have a 40 x 40mm internal stiffener. Danger labels on the doors must be of the mould-in graphic type. Open at least 130 degrees with hinges being an internal part of the moulding process. Piano hinges not acceptable. All kiosks 9-Way and bigger shall be fitted with at least 3 door hinges. Doors must be removable for ease of installation, maintenance, or replacement. Stainless steel standard pad lockable facilities to be provided for both doors. A polyethylene legend holder with card must be riveted to the inside of the consumer door. All rivets, bolts, nuts, washers and set screws must be stainless steel				
vii.	Cable Termination	Galvanised heavy duty Unistrat 40 x 20mm to be installed on both the incomer and consumer side of the kiosk, for cable termination				
viii.	Busbars	Must be fitted with high conductivity tinned copper phase, earth, and neutral busbars (predrilled prior to tinning or galvanising) Phase busbars must be capable of accommodating 3 x 300mm cables (per phase) and must be heat shrink colour coded red, white, and blue and vertical mounted on polyethylene busbar holders. A polyethylene busbar shroud, marked with a Mould-in graphics danger, as well as a trifoliate danger live busbar label, which is enclosed on top and sides for safety, to be fitted over the phase busbars. Must be fitted with close tolerance stainless steel bolts, nuts, and washers at all connecting points Neutral and earth bars are to be fitted to the consumer side of the kiosk and must extend through to the incoming side (no interconnection cables will be allowed) Both these bars to be connected by means of 70mm wire (green), bolted to Unistrat				
E1.1.d	NUMBERS AND TYPE OF METERS IN DOUBLE DOOR KIOSK					
	1PH KWH	3PH KWH	1PH SPLIT	3PH SPLIT		
4Way	4	2	8	2		
6Way	6	2	8	2		
9Way	9	4	14	4		
12 Way	12	6	14	4		
E1.1.e	TEST				Yes	No
i,	Test reports for type and routine tests as per NRS 056- part 1 to be provided					
ii,	Test to be done by an accredited laboratory					
E1.1.f	MARKING				Yes	No

i,	Marking as per NRS 056 part 1:2005 to be provided		
E1.1.g	GENERAL	Yes	No
i,	Prices to include supply of goods and delivery to the Municipal Store in Stellenbosch. Equipment shall only be newly manufactured. No second hand or refurbished equipment. A sample of each standard size shall be supplied if requested. All kiosks to be equipped with Surge Arrestors as specified		
E1.1.h	POLYETHYLENE DISTRIBUTION STUBBY SPECIFICATIONS		
i,	Stubby to be manufactured out of polyethylene type LLDPE		
ii,	Stubby to consist of top measuring 700(h) x 340(w) x 220(d) and a separate root base measuring 410(h) x 400(w) x 430(d) Root to have mounting flange all round		
iii,	Top to be secured to root through internal frame with polyethylene locking pin		
iv,	Stubby "MUST" — have removable internal polyethylene back board		
v,	Backboard to be fitted with unistrut- two rows of din rail including separate earth & neutral bar (32mm x 6mm) complete with bolts, washers & nuts-Equipped for at least 2x95mm and 12 x 16mm crimping lugs 70mm Insulated Earth Link between neutral and earthbar Busbars predrilled prior to tinning or galvanising		
vi,	Full set of vertical busbars and must be fitted with high conductivity tinned copper phase, earth and neutral busbars (predrilled prior to tinning or galvanising) Phase busbars must be capable of accommodating 2 x 120mm cables (per phase) and must be heat shrink colour coded red, white and blue and vertical mounted on polyethylene busbar holders (predrilled prior to tinning or galvanising)		
vii,	Combination busbars circuit breaker shroud around internal back board		
x,	Internal back board must be able to accommodate 12 x Curve 1 breakers and surge arrestors as specified		

Polyethylene Distribution stubby







E1.2 LOW VOLTAGE STEEL STUBBY'S (3CR12)

E1.2.1 SCOPE

This specification sets out requirements for low-voltage (LV) steel meter kiosks for use in underground networks.

E1.2.1.1 NORMATIVE REFERENCES

IEC 60715: 1981, *Dimensions of low voltage switchgear and control gear. Standardized mounting on rails for mechanical support of electrical devices in switchgear and control gear installations. (inc Admit 1)*
 SANS 1091:1975, *National Color Standards for paint.*
 SANS 1507-1: 2002, *Electric cables with extruded solid dielectric insulation for fixed installations (300/500 V to 1 900/3 000 V) — Part 1: General.*
 SANS 1186-1: 2003, *Symbolic safety signs — Part 1: Standard signs and general requirements*
 DIN 17441, *Stainless steel: technical delivery conditions for cold rolled strip and slit strip and for plate and sheet cut there from.*
 BS 5685-1: 1979: *Electricity meters — Part 1: Specification for class 0,5, 1 and 2 single-phase and poly-phase, single rate and multi-rate watt-hour meters*

E1.2.1.2 TERMS AND DEFINITIONS

- a. **Circuit breaker Compartment:**
That part of a kiosk where the circuit breakers are installed and connected to the busbars.
- b. **Busbar Compartment:**
That part of a kiosk where the network cables are terminated and connected to busbars.
- c. **Metering compartment:**
That part of a kiosk where the meters are installed, and service cables terminated and connected to meters.

E1.2.2 REQUIREMENTS

E1.2.2.1	KIOSK REQUIREMENTS	YES	NO
a.	The entire kiosk shall be manufactured from a minimum of 2 mm thick 3CR12 steel		
b.	The completed kiosk shall have an IP rating of 3 for protection against touching live parts, and it shall have an IP rating of 3 for protection against ingress of liquids. [IP33]		
c.	The kiosk shall be suitable for ground mounting.		
d.	The final color of the box shall be in accordance with SANS 1091.		

E1.2.2.2	KIOSK CONSTRUCTION	YES	NO
a.	The kiosk shall include two sliding doors for access to busbar and metering compartment and a top hinge lid for access to the circuit breaker compartment.		
b.	The lid shall be equipped with a drop-key lock.		
c.	The kiosk shall be constructed from pickled, passivated and powder coated 3CR12. Both the exterior and interior of the kiosk shall be powder coated		
d.	Ventilation ports on both sides, spider-proof.		
e.	Fabrication of 3CR12 steel kiosks		



f.	All cutting, forming, forging, machining, welding, fastening, annealing, stress relieving, post weld cleaning and coating shall comply with the internal standards of the manufacturer of 3CR12 steel.		
g.	In all cutting operations, whether thermal or mechanical, carried out on 3CR12 steel, no contamination by ferrous (iron or steel) material or particles shall take place. Sharp or rough edges shall be removed by manual grinding or filing.		
E1.2.2.3	WELDING	YES	NO
a.	For Manual Metal Arc (MMA) welding type 309L electrodes are recommended for welding 3CR12 steel, although E308L and E316L may also be used.		
b.	For Tungsten Inert Gas (TIG), Metal Inert Gas (MIG) and Plasma arc welding (PAW) the recommended welding consumables are AWS A5.9 ER309L, ER308L or ER316L.		
c.	When welding stainless steel studs, bolts, or nuts onto 3CR12 steel the weld consumable shall be the AWS class 309L to avoid excessive weld metal dilution.		
d.	Where the manufacturer is using stud welding onto 3CR12 steel, 304L stainless steel studs shall be used.		
e.	Spot welding (resistance welding) shall only be used on parts of the kiosk that are not directly in contact with the outside atmosphere.		

E1.2.2.4	POST-WELD CLEANING (PICKLING AND PASSIVATION)	YES	NO
a.	To prevent corrosion at the welded areas it is necessary to remove all traces of discoloration and scale from the welded areas. This can be done chemically or mechanically and afterwards the kiosk shall be passivated.		
b.	Mechanical cleaning may be done by wire brushing, grinding, using abrasive power tool pads or abrasive blast cleaning. A stainless-steel wire brush shall be used for wire brushing and it shall be dedicated for use with 3CR12 steel. Only dedicated grinding discs based on alumina shall be used when grinding 3CR12 steel. The abrasive used for abrasive blast cleaning shall be stainless steel shot, copper slag, glass beads or alumina, totally free of metallic iron, iron oxides or chlorides		
c.	Chemical cleaning or pickling of 3CR12 steel shall be carried out using formulations based on Nitric acid (HNO ₃) and Hydrofluoric acid (HF) designed specifically, for 3CR12 steel. Dipping is the preferred method for applying the chemicals. Pickling formulations are aggressive towards 3CR12 steel and pickling shall be supervised to ensure that exposure periods are no longer than the minimum required removing discoloration. Thorough washing with copious quantities of clean cold water are required after pickling to remove all traces of the acids used.		
d.	Passivation of 3CR12 steel shall be carried out within as short a period after post-weld cleaning as possible. A solution made up of 10 % to 20 % HNO ₃ with the balance H ₂ O is suitable for passivating 3CR12 steel. Dipping is the		

e.	The kiosk shall be degreased prior to pickling and passivation.		
E1.2.2.5	POWDER COATING	YES	NO
a.	The kiosks shall be powder coated with avocado colored polyester powder (SANS color code C12) and the thickness shall be between 60 µm and 80 µm.		
b.	Before powder coating can take place, it is very important to ensure that there is no oil present on the kiosk. The kiosk shall be degreased before powder coating.		



E1.2.2.6	SHIPPING		YES	NO
a.	Kiosks shall be wrapped in bubble wrapping or cardboard before transport to stores. Mounting nuts and setscrews shall be suitably protected to protect them from damage during transport.			

E1.2.2.7	METER KIOSK ELECTRICAL EQUIPMENT	YES	NO
E1.2.2.8	WIRING		
a.	The kiosk shall be supplied with a 35 mm ² bare stranded and annealed copper connection between the neutral bar and the earth bar.		
b.	The kiosk shall be supplied with all busbars and insulators fitted		
c.	In the LV feeder compartment, there shall be 3 LV phase busbars and a neutral busbar.		
d.	The phase and neutral busbars shall be constructed from 6 mm thick copper, rating 500 amps.		
e.	The neutral busbar shall be insulated from earth in the same manner as the phase busbars.		
f.	The busbars shall come fitted with two M10 x 30 mm setscrew, complete with 2 stainless steel washers, a stainless-steel spring washer and a stainless steel nut, in each predrilled hole (except for the holes used to mount the busbars onto the insulators).		
g.	The LV insulators used shall be colored to indicate the phase of each busbar. From top to bottom or from left to right, the phase order of the busbars shall be red, yellow, blue and black.		
h.	The minimum diameter of the LV insulators used shall be 40 mm. The insulators shall have M8 studs on either end. The studs shall project a minimum of 30 mm from the ends of the insulators. The insulators shall have a cylindrical shape (without sheds). The minimum diameter of the flat circular surface where the insulator makes contact with the frame shall be 25 mm. The insulators shall be a minimum of 40 mm long (not including the studs).		
i.	It shall not be possible to make inadvertent contact with the busbars once the kiosk door has been opened. A removable cover shall be provided in order to gain access to the busbars		
j.	The continuous current carrying capacity of the busbars shall be as specified in schedule A. The busbar temperature under these continuous operating conditions shall not exceed 70 °C.		
k.	All wiring connections shall be made using form bent phase colored 16 mm ² PVC insulated copper conductors.		
l.	The kiosk shall be supplied with the conductors lugged and connected to the correct busbars. The ends of the conductors that are intended for connection to equipment in the metering compartment shall not be stripped.		
E1.2.2.9	CIRCUIT-BREAKER MOUNTING	YES	NO
a.	The kiosk shall be designed to house mini rail mounted circuit-breakers		
b.	The mini rails shall be supplied and installed by the manufacturer.		
c.	Circuit-breakers (12 x 80A x Cores 1) shall be installed and connected to busbars		
E1.2.2.10	METER MOUNTING	YES	NO
a.	The kiosk shall be designed to house 2 rows of 6 split kWh meters for the customers supplied from the kiosk.		
		YES	NO



E1.2.2.11	CABLE CLAMPING		
a.	The cables shall be clamped onto a K-clamp bracket installed below the mounting panel.		
b.	The kiosk shall be designed to house 3 x 95mm x 4-core feeder cables and 12 x 16mm x 4-core consumer cables.		
E1.2.2.12	MARKING, LABELLING AND PACKAGING	YES	NO
i	Notices shall be provided as required by the Occupational Health and Safety Act. All notices shall be secured to the kiosks using aircraft rivets.		
ii	The following information shall appear in legible and indelible marking as follows:		
	a) The manufacturer's name or trademark; b) A danger sign of minimum size 100 mm x 60 mm that forms an integral part of the housing and/or all doors. The sign shall be as specified in table 1, WW7 of SANS 1186-1; and c) Appropriate SANS mark(s) of approved performance.		
ii	A label showing the name of the manufacturer and the date of manufacture shall be placed on the inside of the kiosk door.		
iv	A —Dangerll electrical warning -sign1, shall be secured to the removable busbar cover.		
E1.2.2.13	SAMPLES	YES	NO
a.	A sample of the kiosk shall be provided for evaluation purposes		
b.	The manufacturer's name or trademark;		
E1.2.2.14	GENERAL	YES	NO
a.	All kiosks to be equipped with Surge Arrestors as specified		

E1.3. LOW VOLTAGE VANDAL PROOF METERING KIOSKS

No.	Description		
E1.3.1	SPECIFICATION FOR LOW VOLTAGE METERING ENCLOSURES	YES	NO
a.	Tamper proof enclosures shall be designed to host split prepayment meters or credit meters as requested. Kiosks will be called 6-way, 12-way, 18 way, or 24 way.		
b.	Meters currently in use: Cashpower 2000, Cashpower Gemini Split Meter, Cashpower Gemini PLC, Cashpower Power –Rail, Conlog Din Rail BEC 44 series, Landis + Gyr Electronic credit meter. Itron Din Rail PLC meters		
c.	Enclosures shall be prewired for a specific required meter.		
d.	Enclosures shall be fitted with the necessary electronics as specified in clause 37. and will form part of unit prize		
e.	Enclosures shall be divided in the inside into two compartments by means of back plate to be used to fit the meters, circuit breakers, isolator, and bus bars as prescribe. The compartments must only be accessible from the outside (2 doors). The one side of the compartment will host the meters, service connection cables and circuit breakers which will be referred to as the metering side. The other side will host the supply cable, bus bars and main isolator which will be referred to as the bus bar side.		
f.	Concrete plinths will be dealt with separately from the kiosks in the same tender, but it is expected of the successful bidder to supply both the kiosk and plinth. In the case where no offers are made on the plinth the bidder will be		



	disqualified.		
g.	All kiosks will be equipped with Surge Arrestors as specified in section 4.6		

E1.3.2 ENCLOSURE SHALL BE PRE-WIRED AS FOLLOWS:

E1.3.2.1	6-WAY ENCLOSURE		
E1.3.2.2	METERING COMPARTMENT:	Yes	No
a,	Supply and fitted with the correct amount of 60A or 80A single pole (6kA) Curve 1 circuit breakers.		
b,	Circuit breakers will be separately supplied from the bus bar side with colour coded insulated copper tails (Red, White, and Blue). Copper tails shall be 16mm ² minimum.		
c,	Phase balancing: 2 x Red, 2 x White, 2 x Blue		
d,	16mm colour coded Insulated Copper tails to be supplied from the circuit breaker to each meter. The tails must be so arranged to enable a person installing the required meter for the enclosure just to connect the meter with the tails.		
e,	16mm ² black Insulated copper tails to be supplied from the neutral bus bar to each meter. The tails must be so arranged to enable a person installing the required meter for the enclosure just to connect the meter with the tails. Each meter shall have its own neutral tail/s.		
f,	Provision shall be made in the enclosure for a suitable cable clamp unistrut for all cables to be mechanically secured and for the earthing of the cable armouring. K-type clamps will be accepted.		
E1.3.2.3	BUS BAR COMPARTMENT	Yes	NO
a,	Supply and fit with a 250A (15kA) main isolator Fitted with 4 x 25mm x 6mm copper bus bars secured on insulators for 3 x phases and neutral.		
b,	Fitted with 1 x 25mm x 6mm copper bus bar secured directly on the steel structure as the earth bar.		
c,	Neutral and earth bus bar to be bonded with each other with a bare 50mm copper conductor.		
d,	Each bus bar shall have enough drilled holes to avoid two connections per bolt.		
e,	Phase bus bars shall be supplied from the isolator with 95mm colour coded (Red, White, Blue) insulated copper tails (when the request is to supply enclosure fitted with an isolator)		
f,	Provision shall be made in the enclosure for a suitable cable clamp unistrut for all cables to be mechanically secured and for the earthing of the cable armouring. K-type clamps will be accepted.		
g,	Copper tinned lugs of the correct size will be crimped onto the copper conductors by a proper crimper designed for that purpose		
h,	All copper conductors will be secured onto the bus bars by using the correct size bolt, nut, flat and spring washers.		
E1.3.3	12-WAY ENCLOSURES		
E1.3.3.1	METERING COMPARTMENT:	Yes	No
a.	Supply and fitted with the correct amount of 60A or 80A single pole (6kA) Curve 1 circuit breakers		
b.	Circuit breakers will be separately supplied from the bus bar side with colour coded insulated copper tails (Red, White, Blue). Copper tails shall be 16mm ² minimum.		
c	Phase balancing: 4 x Red, 4 x White, 4 x Blue		



d.	16mm colour coded Insulated Copper tails to be supplied from the circuit breaker to each meter. The tails must be so arranged to enable a person installing the required meter for the enclosure just to connect the meter with the tails.		
e.	16mm black Insulated copper tails to be supplied from the neutral bus bar to each meter. The tails must be so arranged to enable a person installing the required meter for the enclosure just to connect the meter with the tails. Each meter shall have its own neutral tail/s.		
f.	Provision shall be made in the enclosure for a suitable cable clamp Unistrut for all cables to be mechanically secured and for the earthing of the cable armouring. K-type clamps will be accepted.		
E1.3.3.2	BUSBAR COMPARTMENT	Yes	No
a.	Supply and fit with a 250A (15kA) main isolator fitted with 4 x 30mm x 6mm copper bus bars secured on insulators for 3 x phases and neutral.		
b.	Fitted with 1 x 30mm x 6mm copper bus bar secured directly on the steel structure as the earth bar.		
c.	Neutral and earth bus bar to be bonded with each other with a bare 70mm copper conductor.		
d.	Each bus bar shall have enough drilled holes to avoid two connections per bolt.		
e.	Phase bus bars shall be supplied from the isolator with 150mm colour coded (Red, White, Blue) insulated copper tails (when the request is to supply enclosure fitted with an isolator).		
f.	Provision shall be made in the enclosure for a suitable cable clamp unistrut for all cables to be mechanically secured and for the earthing of the cable armouring. K-type clamps will be accepted		
g.	Copper tinned lugs of the correct size will be crimped onto the copper conductors by a proper crimper designed for that purpose.		
h.	All copper conductors will be secured onto the bus bars by using the correct size bolt, nut, flat and spring washers.		

E1.3.4	18-WAY ENCLOSURES	Yes	No
E1.3.4.1	METERING COMPARTMENT		
a.	Supply and fitted with the correct amount of 60A or 80A single pole (6kA) Curve 1 circuit breakers.		
b.	Circuit breakers will be separately supplied from the bus bar side with colour coded insulated copper tails (Red, White, Blue). Copper tails shall be 16mm ² minimum.		
c.	Phase balancing: 6 x Red, 6 x White, 6 x Blue		
d.	16mm colour coded Insulated Copper tails to be supplied from the circuit breaker to each meter. The tails must be so arranged to enable a person installing the required meter for the enclosure just to connect the meter with the tails.		
e.	16mm black Insulated copper tails to be supplied from the neutral bus bar to each meter. The tails must be so arranged to enable a person installing the required meter for the enclosure just to connect the meter with the tails. Each meter shall have its own neutral tail/s.		
f.	Provision shall be made in the enclosure for a suitable cable clamp Unistrut.		
E1.3.4.2	BUSBAR COMPARTMENT	Yes	No



a.	Supply and fit with a 250A (15kA) main isolator fitted with 4 x 35mm x 6mm copper bus bars secured on insulators for 3 x phases and neutral.		
b.	Fitted with 1 x 35mm x 6mm copper bus bar secured directly on the steel		
E1.3.4.3	SURFACE MOUNTED VANDALPROOF KIOSK	YES	NO
E1.3.4.3.1	9 WAYS KIOSK		
a	Kiosk to be fitted with the correct amount of 60A or 80A single pole (6kA) curve 1 circuit breaker.		
b	Kiosk must be supplied with earth and neutral bars.		
c	The kiosk shall be supplied with all busbars and insulator fitted		
d	The kiosk is to be mounted vertically on a wall.		
e	The degree of protection of the enclosure must be IP45 when the door is securely closed and sealed.		
f	The kiosk must have a metal back plate where the DIN rail to secure meters and miniature circuit breaker will be installed.		
g	DIN rail to install meters must be supplied with the kiosk.		
h	Kiosk must have to two cable entries and up to 12 exit knockouts all the bottom of the kiosk. The knockouts must be constructed in a way that prevents unauthorized opening.		
i	The kiosk must be a robust kiosk which provides physical protection because of the design and the material used but must also function as an information system via a GRPS network.		
j	The kiosk must be designed in such a way that the material thickness will prevent any attempt at physical destruction whether it is by mechanical or abrasive means, with a minimum of 2mm thickness.		
k	The apertures, doors and hinges must be located internally as to prevent unauthorized access into the kiosk.		
l	Kiosk should be supplied with the electronic equipment that makes it possible to monitor the status of kiosk on software installed in a remote computer. (see item 4.5 for requirements of the electronic equipment and software)		
m	The kiosk must have a SABS approval mark for low voltage assemblies.		
n	The enclosure must be made of stainless steel or 3CR12 steel and must be corrosion resistant.		
o	The kiosk must be suitable to operate in temperature of +45C and – 10C		
E1.3.5	POLE MOUNTED VANDAL PROOF KIOSK	Yes	No
E1.3.5.1	9 WAY KIOSK		
a	Kiosk to be fitted with the correct amount of 60A or 80A single pole (6kA) curve 1 circuit breaker		
b	Kiosk shall be fitted with brackets that makes it possible for mounting on a pole		
Reference No:		B/SM 109/25	
		Page 211 of 373	



c	The kiosk shall be supplied with all busbars and insulator fitted		
d	Kiosk must be supplied with earth and neutral bars		
e	The kiosk is to be mounted vertically on a wall		
f	The degree of protection of the enclosure must be IP45 when the door is securely closed and sealed.		
g	The kiosk must have a metal back plate where the DIN rail to secure meters and miniature circuit breaker will be installed		
h	DIN rail to install meters must be supplied with the kiosk		
i	Kiosk must have two cable entries and up to 12 exit knockouts all at the bottom of the kiosk. The knockouts must be constructed in a way that prevents unauthorized opening.		
j	The kiosk must be a robust kiosk which provides physical protection because of the design and the material used but must also function as an information system via a GPRS network.		
k	The kiosk must be designed in such a way that the material thickness will prevent any attempt at physical destruction whether it is by mechanical or abrasive means, with a minimum of 2mm thickness.		
l	The apertures, doors and hinges must be located internally as to prevent unauthorized access into the kiosk		
m	Kiosk should be supplied with the electronic equipment that makes it possible to monitor the status of kiosk on software installed in a remote computer. (see item 4.5 for requirements of the electronic equipment and software)		
n	The kiosk must have a SABS approval mark for low voltage assemblies		
o	The enclosure must be made of stainless steel or 3CR12 steel and must be corrosion resistant.		
p	The kiosk must be suitable to operate in temperature of +45C and - 10C		

E1.4	CONCRETE PLINTH FOR THE METERING ENCLOSURES	Yes	No
E1.4.1	CONCRETE PLINTH FOR THE METERING ENCLOSURE:		
a.	The plinth must be steel reinforced (grid of not less than 8mm steel)		
b.	Concrete strength must be at least 30MPA.		
c.	The plinth must have a height of at least 600mm and a thickness of 100mm from the top to the bottom.		
d.	The enclosure must fit and be secured exactly onto the plinth with no parts of the enclosure hanging over the edges of the plinth.		
e.	Provision should be made on the plinth to lift it with a crane truck.		
f.	4 x 12mm threaded bars, 300mm long, must be cast inside and correspond with the inner flange corners on the metering enclosure.		
g.	The planting depth of the plinth will be ±400mm.		
E1.5	ELECTRONICS & SOFTWARE	Yes	No



a.	Electronics should be fitted in each enclosure and the software supplied, must be capable of communicating with the electronics and capture and report all events of the electronics. The following features (minimum) are required:		
b.	Electronics and software shall identify the authorized person opening and closing any enclosure.		
c.	Electronic and software shall keep record of the date and time when the enclosure was opened and closed.		
d.	Electronics and software shall be capable to identify the location of any enclosure.		
e.	Electronic and software shall be capable to remotely program any enclosure to assign new keys or cancel any key on any enclosure.		
f.	Electronic and software shall be capable of allowing individual selective programming of keys.		
g.	Electronic and software shall be capable to indicate the battery backup voltage at the time of request.		
h.	Electronic and software shall be capable of reporting an alarm to a specified PC location whenever any enclosure is opened.		
i.	Electronic and software shall be capable to indicate the serial number of enclosures including date and time of the request.		
j.	Electronic and software shall be capable to report an alarm immediately to specified PC location whenever a power failure is detected in any enclosure.		
k.	Electronic and software shall be capable of reporting an alarm immediately to specified PC location whenever an attempt is made to gain access by means of cutting torch.		
l.	Electronic and software shall be capable to detect and store at least the last fifty (50) events of any enclosure before it is overwritten. Any early alarm should warn specified PC station if the event recording has reached 80% of its capacity for an operator to download and store the information on council's IT server stations.		

E1.5.1	ELECTRONIC AND SOFTWARE SHALL BE CAPABLE OF COMMUNICATING AND REPORTING THE STATUS OF THE SAID METERS, THE FOLLOWING IS REQUIRED.	Yes	No
a.	Indicate the meter number when requested		
b.	Indicate the serial number of the meter when requested.		
c.	Indicate the location of the meter.		
d.	To establish the credit available on any of the said meters		
e.	Automatically report faulty / tempered meters.		
f.	To load credit token remotely on any of the said meters.		
g.	To enter a tamper reset code remotely on any of the said meters.		
h.	To charge the tariff of any of the said meters.		
i.	To change the current trip rating of any of the said meters.		



j.	To fully communicate and obtain any other information not mentioned above from the said meters as indicated in their operating manuals (Example: Tarff codes)		
----	---	--	--

E1.6 SURGE ARRESTORS FOR THE KIOSKS

E1.6.1	APPLICATIONS	Yes	No
a	Overvoltage protection		
E1.6.2	FEATURES	Yes	No
	High peak surge current rating of 25k Disk type, metallized • Rated disk diameter = 32 Tolerance of V_v at 1 mA: $\pm 10\%$ Max. AC voltage = 460. Epoxy resin coating. Customized cable leads (Short as physically possible)		
E1.6.3	ELECTRICAL DATA	Yes	No
	Maximum rating (85 °C) Max. Operating AC voltage V_{RMS} = 460V Max. Operating DC voltage V_{DC} = 615V Surge current (8/20time μs) I_{max} = 25000A Energy absorption (2 ms) E_{max} = 660J Average power dissipation P_{max} = 1.2W Characteristics (25 °C) Varistor voltage at 1 mA V_v = 750 V $\pm 10\%$ Clamping voltage at 200Vcmax A (8/20= μs) 1240 V Type Capacitance at 1kHz C = 1200 pF		

E2. POLE-MOUNTED SERVICE DISTRIBUTION BOXES- POLYETHYLENE

No	Description	Compliance	
E2.1	GENERAL	Yes	No
a	Nothing in this specification shall lessen the obligations of the supplier. The supplier shall be fully responsible for the design and its satisfactory performance in service. Approval by Stellenbosch Municipality shall not relieve the supplier of the responsibility for the adequacy of the design.		
b	This specification covers the requirements for pole-mounted service distribution boxes shall be manufactured in accordance with NRS 032:2001. The specific requirements for Stellenbosch Municipality are specified below. Where conflicting requirements with the NRS 032:2001 occur, this specification shall take precedence.		
E2.2	Compliance with standard specifications	Yes	No
a.	Service Distribution Boxes –Pole-mounted types:	NRS 032:2001	
E2.3	Constructional Requirements		
a	Material	Polyethylene	
b	Construction	Shall be manufactured from compounded light grey UV 25 stabilized Linear Low-Density Polyethylene (LLDPE) using rotational moulding and designed to be such that all external surfaces are —roundedll to prevent impact resistance and dielectric strength. LLDPE used must be chemically resistant and	



		resistant to deterioration from prolonged contact with soil and/or moisture and to abrasion, heat and specifically treated with stabilizing additives to provide enhanced UV breakdown resistance. Material must be free from blow holes and defects. Shall have a 19mm wooden mounting block board and equipped with 2 x stainless steel pole mounting brackets.		
c	Colour	Light Grey		
d	Bottom cable entries	Required (to fit to 16mm ² bundle) 12 way only		
e	Pole mounted Brackets	2 x Stainless Steele pole mounting brackets shall be fitted except for item 1 and 3 that will be wall mounted without brackets.		
f	Lockable facilities	and “no piano OR any exte accepted Doors to have a 20 x 20mm internal perimeter stiffener Danger labels on the door must be of the mould-in graphic type Must open upwards at least 90° and must slide back into the enclosure where it can be “st put “in the open position. Captive Stainless-steel screw (Allen Key Head) to be provided for locking plus a lockable anti-vandal lock must be added All rivets, bolts, washers and set screws must be stainless steel.		
g	Enclosure Sizes	2 Way (330h x 235w x 160d) mm 3 Way (310h x 370w x 185d) mm 4 Way (470h x 325w x 160d) mm 12 Way (640h x 630w x 235d) mm		
E2.4	Tests		Yes	No
a	Test reports for type and routine tests as per NRS 032:2001 to be provided. Test to be done by an accredited laboratory			
E2.5	Making		Yes	No
a	Marking as per NRS 032:2001 to be provided.			

SECTION F: PADLOCKS, LOCKING MECHANISMS AND ACCESSORIES

F1. NYLON PADLOCKS

Item no	Description	YES	NO
4.1	Padlocks shall be compatible to the existing approved key alike, currently used by Stellenbosch Municipality. Locks shall be supplied without keys. Impressed marking shall be done on the one side of the locks. This marking side shall be divided in two blocks for the indent names. Manufacturer and the letters “STBMUN” sizes in and indent depth for easy reading in the same colour as the colour of padlock; Key system is Key no 1: Red Green Blue Key no 2: Green Blue Key no 3: Green Key no 4: Yellow		
4.1.1	Red padlocks shall be constructed of a heavy-duty nylon compound with a smooth finish. The width shall be 45mm with an inside shackle length of 30mm when the lock is closed and a shackle thickness of 6mm. The barrels of the locks shall be non-corrosive with a stainless hardened steel shackle		



4.1.2	Blue padlocks shall be constructed of a heavy-duty nylon compound with a smooth finish. The width shall be 45mm with an inside shackle length of 30mm when the lock is closed and a shackle thickness of 6mm. The barrels of the locks shall be non- corrosive with a stainless hardened steel shackle		
4.1.3	Green padlocks shall be constructed of a heavy duty nylon compound with a smooth finish. The width shall be 45mm with an inside shackle length of 30mm when the lock is closed and a shackle thickness of 6mm. The barrels of the locks shall be non- corrosive with a stainless hardened steel shackle		
4.1.4	Yellow padlocks shall be constructed of a heavy-duty nylon compound with a smooth finish. These padlocks shall have the same design as the red, blue and green padlocks. The width shall be 50mm with an inside shackle of 30mm when the lock is closed and a shackle thickness of 8mm. The barrels of the locks shall be non-corrosive with a stainless hardened steel shackle.		

F2. HIGH AND SECURITY PADLOCKS WITH CONTROLLED AND SECURE 6-PIN “EDGE” KEYS

Item no	Description	YES	NO
	PADLOCKS TO BE USED BY ELECTRICITY DEPARTMENT		
F2.1	Level “A” Padlocks for Switching on High & Medium voltage Controlled and secured 6-Pin “Edge” keys:		
F2.1.1	Padlocks are aluminium red 44x8x28mm with boron short shackle engraved		
F2.1.2	Padlocks are aluminium red 44x8x50mm with boron long shackle engraved		
F2.1.3	Padlocks laminated 54x8mm with boron shackle engraved		
F2.1.4	Padlocks laminated & Shrouded 54x8mm with boron shackle engraved		
F2.1.5	Padlock c/w bracket 73mm wide with 9mm boron shackle		
F2.2	Level “B” Padlocks for Metering High & Medium voltage Controlled and secured 6-Pin “Edge” keys:		
F2.2.1	Padlocks are aluminium black 44x8x28mm with boron short shackle engraved		
F2.2.2	Padlocks are aluminium black 44x8x50mm with boron long shackle engraved		
F2.2.3	Padlocks laminated 54x8mm with boron shackle engraved		
F2.2.4	Padlocks laminated & Shrouded 54x8mm with boron shackle engraved		
F2.2.5	Padlock c/w bracket 73mm wide with 9mm boron shackle. Latch cylinder core only KAMK to existing key		
F2.3	Level “C” Low Voltage Controlled and secured 6-Pin “Edge” keys:		
F2.3.1	Padlocks are aluminium yellow 44x8x28mm with boron short shackle engraved KAMK		
F2.3.2	Padlocks are aluminium yellow 44x8x50mm with boron long shackle engraved KAMK Code:		
F2.3.3	Padlocks laminated 54x8mm with boron shackle KAMK engraved KAMK Code:		
F2.3.4	Padlocks laminated & Shrouded 54x8mm with boron shackle engraved KAMK Code:		
F2.3.5	Padlock c/w bracket 73mm wide with 9mm boron shackle KAMK Code: Latch cylinder core only KAMK Code:		
F2.4	Level “D” Metering Security P secured 6-Pin “Edge” keys:		
F2.4.1	Padlocks are aluminium green 44x8x28mm with boron short shackle engraved KAMK Code:		



F2.4.2	Padlocks are aluminium green 44x8x50mm with boron long shackle engraved KAMK Code:		
F2.4.3	Padlocks laminated 54x8mm with boron shackle KAMK engraved Code:		
F2.4.4	Padlocks laminated & Shrouded 54x8mm with boron shackle engraved KAMK Code:		
F2.4.5	Padlock c/w bracket 73mm wide with 9mm boron shackle KAMK Code: Latch cylinder core only KAMK		
PADLOCKS TO BE USED BY WATER WORKS DEPARTMENT			
F2.5	Water Works - Gates		
F2.5.1	Padlocks Laminated black 54x8x23x30mm with boron short shackle KAMK engraved code: PIS0024004		
F2.5.2	Padlocks Laminated Shrouded black 54x8x23x20mm with boron shackle engraved KAMK code: PIS0022004		
F2.5.3	Padlock 73mm round with 10mm hidden boron shackle c/w bracket KAMK Code: PIS0010117		
F2.5.4	Padlocks Laminated black 67x11x23x35mm with boron short shackle KAMK engraved code: PIS0024020		
F2.5.5	Padlocks Laminated Shrouded black 67x11x23x20mm with boron shackle engraved KAMK code: PIS0022012		
F2.6	Water Works - Reservoirs		
F2.6.1	Padlocks Laminated black 54x8x23x30mm with boron short shackle KAMK engraved code: PIS0024004		
F2.6.2	Padlocks Laminated Shrouded Black 54x8x23x20mm with boron shackle engraved KAMK code: PIS0022004		
F2.6.3	Padlock 73mm round with 10mm hidden boron shackle c/w bracket KAMK Code: PIS0010117		
F2.6.4	Padlocks Laminated black 67x11x23x35mm with boron short shackle KAMK engraved code: PIS0024020		
F2.6.5	Padlocks Laminated Shrouded black 67x11x23x20mm with boron shackle engraved KAMK code: PIS0022012		
F2.7	Water Works - Pumps		
F2.7.1	Padlocks Laminated black 54x8x23x30mm with boron short shackle KAMK engraved code: PIS0024004		
F2.7.2	Padlocks Laminated Shrouded black 54x8x23x20mm with boron shackle engraved KAMK code: PIS0022004		
F2.7.3	Padlock 73mm round with 10mm hidden boron shackle c/w bracket KAMK Code: PIS0010117		
F2.7.4	Padlocks Laminated black 67x11x23x35mm with boron short shackle KAMK engraved code: PIS0024020		
F2.7.5	Padlocks Laminated Shrouded black 67x11x23x20mm with boron shackle engraved KAMK code: PIS0022012		
F2.8	Paradyskloof WTP - Paradyskloof (Existing Key Ref: "FF1/UM")		
F2.8.1	Padlocks Laminated black 54x8x23x30mm with boron short shackle KAMK engraved code: PIS0024004		
F2.8.2	Padlocks Laminated Shrouded black 54x8x23x20mm with boron shackle engraved KAMK code: PIS0022004		
F2.8.3	Padlock 73mm round with 10mm hidden boron shackle c/w bracket KAMK Code: PIS0010117		
F2.8.4	Padlocks Laminated black 67x11x23x35mm with boron short shackle KAMK engraved code: PIS0024020		
F2.8.5	Padlocks Laminated Shrouded black 67x11x23x20mm with boron shackle engraved KAMK code: PIS0022012		
F2.9	Paradyskloof WTP –Idas Valley (Existing Key Ref: "FF2/UM")		
F2.9.1	Padlocks Laminated Shrouded black 54x8x23x20mm with boron shackle engraved KAMK code: PIS0022004		
F2.9.2	Padlock 73mm round with 10mm hidden boron shackle c/w bracket KAMK Code: PIS0010117		
F2.9.3	Padlocks Laminated black 67x11x23x35mm with boron short shackle KAMK engraved code: PIS0024020		
F2.9.4	Padlocks Laminated Shrouded black 67x11x23x20mm with boron shackle engraved KAMK code: PIS0022012		
F2.9.5	Padlocks Laminated black 54x8x23x30mm with boron short shackle KAMK engraved code: PIS0024004		
F2.9.6	Padlocks Laminated Shrouded black 54x8x23x20mm with boron shackle engraved		



	KAMK code: PIS0022004		
F2.9.7	Padlock 73mm round with 10mm hidden boron shackle c/w bracket KAMK Code: PIS0010117		
F2.9.8	Padlocks Laminated black 67x11x23x35mm with boron short shackle KAMK engraved code: PIS0024020		
F2.9.9	Padlocks Laminated Shrouded black 67x11x23x20mm with boron shackle engraved KAMK code: PIS0022012		
F2.10	Bosbou - Bosbou (Existing Key Ref:		
F2.10.1	Padlocks Laminated black 54x8x23x30mm with boron short shackle KAMK engraved code: PIS0024004		
F2.10.2	Padlocks Laminated Shrouded black 54x8x23x20mm with boron shackle engraved KAMK code: PIS0022004		
F2.10.3	Padlock 73mm round with 10mm hidden boron shackle c/w bracket KAMK Code: PIS0010117		
F2.10.4	Padlocks Laminated black 67x11x23x35mm with boron short shackle KAMK engraved code: PIS0024020		
F2.10.5	Padlocks Laminated Shrouded black 67x11x23x20mm with boron shackle engraved KAMK code: PIS0022012		
F2.11	Bosbou –Stores (Existing Key Ref		
F2.11.1	Padlocks Laminated black 54x8x23x30mm with boron short shackle KAMK engraved code: PIS0024004		
F2.11.2	Padlocks Laminated Shrouded black 54x8x23x20mm with boron shackle engraved KAMK code: PIS0022004		
F2.11.3	Padlock 73mm round with 10mm hidden boron shackle c/w bracket KAMK Code: PIS0010117		
F2.11.4	Padlocks Laminated black 67x11x23x35mm with boron short shackle KAMK engraved code: PIS0024020		
F2.11.5	Padlocks Laminated Shrouded black 67x11x23x20mm with boron shackle engraved KAMK code: PIS0022012		
F2.12	Bosbou –Container (Existing Key		
F2.12.1	Padlocks Laminated black 54x8x23x30mm with boron short shackle KAMK engraved code: PIS0024004		
F2.12.2	Padlocks Laminated Shrouded black 54x8x23x20mm with boron shackle engraved KAMK code: PIS0022004		
F2.12.3	Padlock 73mm round with 10mm hidden boron shackle c/w bracket KAMK Code: PIS0010117		
F2.12.4	Padlocks Laminated black 67x11x23x35mm with boron short shackle KAMK engraved code: PIS0024020		
F2.12.5	Padlocks Laminated Shrouded black 67x11x23x20mm with boron shackle engraved KAMK code: PIS0022012		
F2.13	High Security Padlock Accessories		
F2.13.1	Adjustable cable locks for ladders Code: PSI00300002 Set of two, keyed alike nylon covered braided s/s cable 10x 1800mm		
F2.13.2	Lubricant Code: PSI0010088 Dry PTFE padlock lubricant Aerosol 150ml		
F2.13.3	Heavy Duty Bar Hasp Code: PIS0010101 Flat Bar hasp heavy duty hardened steel 180mm straight		
F2.13.4	Heavy Duty Hasp Single Swivel Code: PIS0027014 Bar hasp heavy duty hardened steel 160mm		
F2.13.5	Heavy Duty Hasp Double Swivel Code: PIS0010114 Bar hasp heavy duty hardened steel 160mm		
F2.13.6	Heavy Duty Barrel Bolt Code: PIS0010116 Hardened steel 180mm straight		
F2.13.7	High Security Chain Code: PIS0027011 Hardened steel 10 x 1000m		
F2.14	SAFETY LOCKOUT EQUIPMENT		
F2.14.1	Safety Padlock (Private padlocks) Individual Personal worn Lockout Carry kits c/w twelve nylon private padlocks with stainless steel shackles 35x4,7x38mm RED KAMKKR per set engraved padlocks & keys code: PIND001007/31 • Lockout Carry Bracket • Nylon padlocks 35x4.76x38mm c/w s/s shackle 316 with 6-pin tumbler		



	• Chemical, temperature extremes, and UV stable		
F2.14.2	aluminum safety hasps 6mm red code: PIS0010019 • 25x6 inside jaw diameter, holds up to 6 padlocks • Spark resistant aluminum		
F2.14.3	aluminum safety hasps 6mm red code: PIS0010020 • 38x6 inside jaw diameter, holds up to 6 padlocks • Allows Lockout by multiple workers at each lockout point • Spark resistant aluminum		
F2.14.4	Circuit Universal Breaker Miniature Code: PIS0010107		
F2.14.5	Lockout Standard Size Breaker Toggles Code: PIS0010047		
F2.14.6	Lockout Wide or Tall Breaker Toggles Code: PIS0010046		

F3. LOCKOUT PADLOCKS FOR ARTISANS

Item no	Description	YES	NO
F3.1	Set of 12 nylon padlocks with stainless steel shackles 35 x 4.7 x38mm RED Keyed Alike per set engraved with numbering code Lockout Carry bracket holds twelve safety padlocks near lockout point to help ensure all locations are locked out. Nylon padlocks must have a Shackle diameter of 4.76mm. Marine grade 316 stainless steel shackle provides superior corrosion resistance Body width 35mm with 38mm high clearance Key retaining –ensures padlock is not accidentally left unlocked Chemical, temperature extremes, and UV stable Includes English write-on “Danger” and “Pr Keyed Alike different 6-pin tumbler cylinder Laser Engraving allows permanent identification of employee information on padlocks and/or key		

F4. ALUMINIUM SAFTEY HASPS 6MM X 25 GALVANIZED

Item no	Description	YES	NO
F4.1	Allows lockout by multiple workers at each lockout point Control cannot be turned on u removed from hasp Spark resistant aluminum		

F5. ALUMINIUM SAFTEY HASPS 6MM X 35MM

Item no	Description	YES	NO
F5.1	38x6 inside jaw diameter, holds up to 6 padlocks Allows lockout by multiple workers at each lockout point Control cannot be turned on u removed from hasp Spark resistant aluminum		

F6. LOCKOUT TAGS “DO NOT OPERATE” – Customer made – 12/pack



Item no	Description	YES	NO
F6.1	Re-writable tags 146mm high x 80mm wide heavy-duty c/w photo ID label Brass grommet 12mm diameter accepts all safety padlocks Durable polyester laminate resists water grease and extreme temperatures Heavy Duty construction Customized (name, department, expected completion)		

F7. ADJUSTABLE CABLE LOCKS FOR LADDERS

Item no	Description	YES	NO
F7.1	Set of two keyed alike Braided nylon covered s/s cable 10x1800mm		

F8. LUBRICANT

Item no	Description	YES	NO
F8.1	Dry PTFE padlock lubricant Aerosol 150ml		

F9. HEAVY DUTY HASP

Item no	Description	YES	NO
F9.1	Bar hasp heavy duty hardened steel flat 180x44		

F10. HEAVY DUTY HASP 90 DEGREES (Bar hasp heavy duty hardened steel 180x44)

Item no	Description	YES	NO
F10.1	Harden steel single hinge hasp 160mm		
F10.2	Harden steel double hinge 197mm		

F11. HIGH SECURITY CHAIN

Item no	Description	YES	NO
F11.1	Hardened steel 10x1000mm		

SECTION G: SUBSTATION, MINISUB MATERIAL AND ACCESSORIES**G1. DANGER SIGNS**

Item No.	Description	Compliance	
G1.1	RECTANGULAR MV DANGER SIGN	Yes	No
a	Dimensions (see attached image)	270 mm x 120mm	



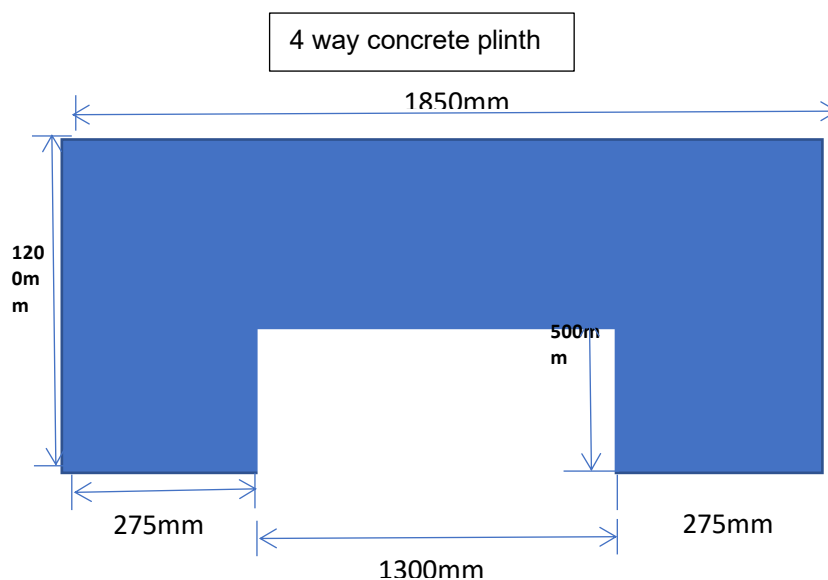
b	Material	Chromadek		
c	Danger signs must be printed with a direct UV printer on a 0.6 chromadek sheet.			
d	All the signs must be drilled, 4 or 6 holes			
G1.2	RECTANGULAR LV DANGER SIGN			
a	Dimensions (see attached image)	270 mm x 120mm		
b	Material	Chromadek		
c	Danger signs must be printed with a direct UV printer on a 0.6 chromadek sheet.			
d	All the signs must be drilled, 4 or 6 holes			
G1.3	TRIANGULAR DANGER SIGN			
a	Dimensions (see attached image)	290 mm x 290mm		
b	Material	Chromadek		
c	Danger signs must be printed with a direct UV printer on a 0.6 chromadek sheet.			
d	All the signs must be drilled, 6 holes			

1. Rectangular MV sign	2. Rectangular LV sign	3. Triangular sign



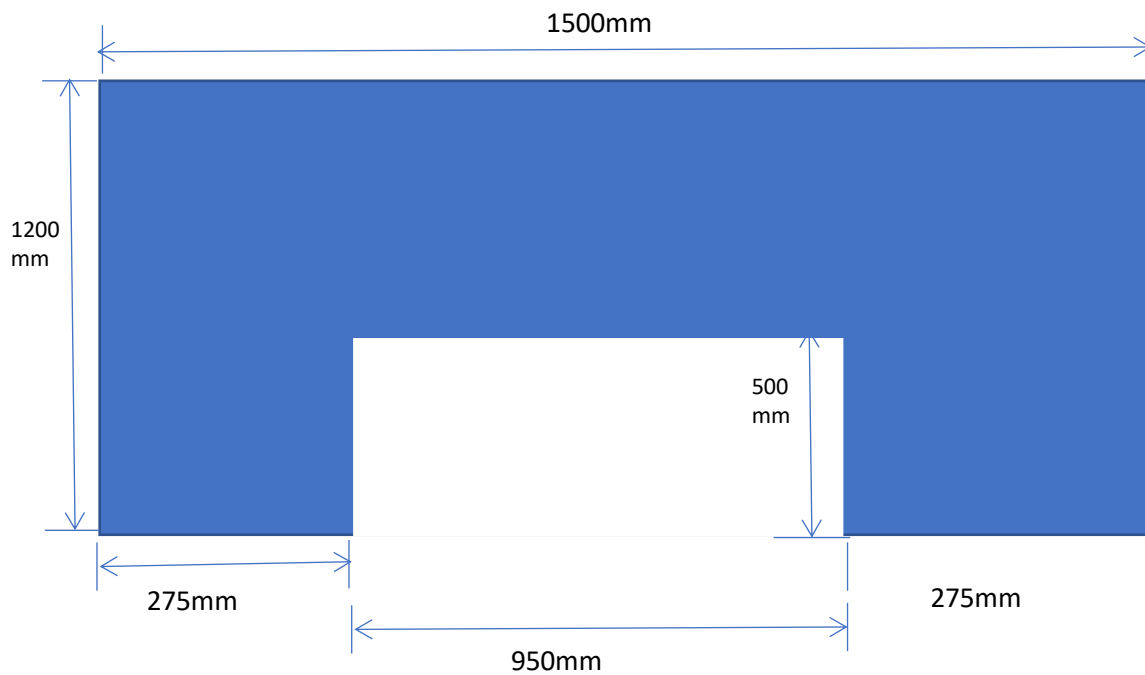
G2. CONCRETE MINISUB PLINTH

Item No.	Description	Compliance	
		Yes	No
G2.1	B TYPE MINISUB CONCRETE PLINTH WITH REMOVABLE SIDE WALL		
a	Concrete strength: 25 – 30MPA		
b	2 x lifting holes		
c	Y 12 steel reinforcing. Concrete slab must be reinforced with 12mm steel bars		
d	Dimensions: 3200mm x 1300mm x 300mm (see attached drawing- figure 50.1)		
G2.2	4 WAY CONCRET PLINTH		
a	Concrete strength: 25-30MPA		
b	2 x lifting holes		
c	Y 12 steel reinforcing. Concrete slab must be reinforced with 12mm steel bars		
d	Dimensions: 1850mmx 1200mm x 300mm (see attached drawing- figure 50.2)		
G2.3	3 WAY CONCRETE PLINTH		
a	Concrete strength: 25-30MPA		
b	2 x lifting holes		
c	Y 12 steel reinforcing. Concrete slab must be reinforced with 12mm steel bars		
d	Dimensions: 1500mmx 1200mm x 300mm (see attached drawing- figure 50.3)		

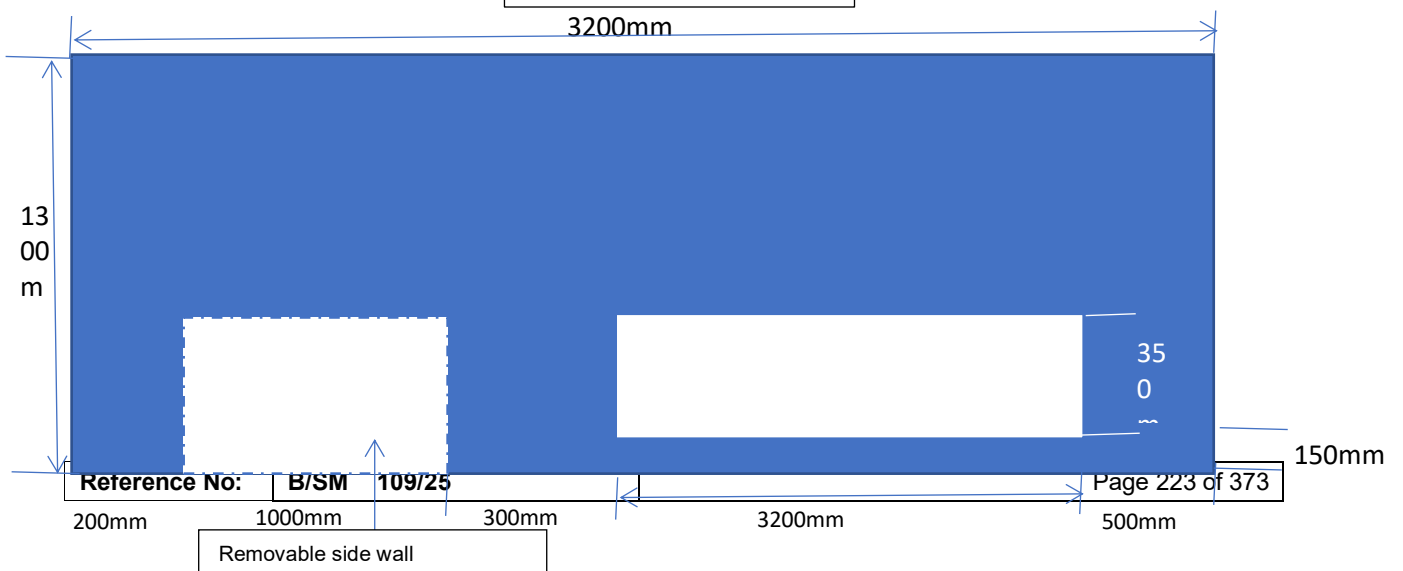




3 way concrete plinth



B Type minisub plinth





G3. SUBSTATION BATTERIES

G3.1SCOPE:

- G3.1.1 This specification provides for the manufacture, supply and delivery of a freestanding battery chargers and battery sets to be combined to form a battery bank for various DC supplies as required in substations.
- G3.1.2 The battery sets are required to replace existing old complete sets and in some instances cells only. The charger unit is existing installations or will be replaced with stores stock. The typical charger unit is a self-contained floor standing cabinet manufactured from steel with front access for battery installation and maintenance. The charger unit housed in the top compartment and the battery bank in the bottom compartment of the cabinet. All ancillary equipment necessary for alarms and charger management is housed in the top compartment.
- G3.1.3 Full detail of the discharge rates and charging rates after save complete discharge of the batteries offered shall be submitted with the quotation.

Item No.	Description	Compliance	
G3.2	GENERAL	Yes	No
a	The batteries shall be of the compact pocket plate nickel cadmium low maintenance cell type. Similar or equal to the ALCAD type, complying with Specification IEC 60623 having an estimated life of 20 years and requiring topping up every 10 + years. The batteries shall be delivered factory filled with electrolyte and first charge completed. First charge commissioning forms shall be supplied with the batch of batteries on delivery.		
G3.3	GENERAL REQUIREMENTS		
a	CONSTRUCTION		
b	The battery cells shall be the self-contained type and the casing made of transparent approved polypropylene so that the electrolyte levels would be visible from the outside. The lid of the container and container shall be welded together by means of heat sealing in order to create a homogeneous joint. The pocket plate assembly inside the container shall be a nickel hydroxide for the positive and cadmium hydroxide for the negative polarities. The above plates of the battery cell shall be retained in double perforated steel strip pockets.		

G3.4	FILLER CAP	YES	NO
a	Each cell shall have its own sealable filler cap. The flip top open cap shall be of flame arresting design as well as provide effective ventilation to the cell. This cap shall be of such nature that the electrolyte levels can be checked and refilling with water easily done without disconnecting and removing the cells from the battery bank.		
G3.5	TERMINALS		
a	The positive and negative terminals shall be installed on top of the cell on the opposite sides of the cell. A minimum of M6 Nickel plated studs		



	shall be installed and welded to the plate frames. The studs shall be compression sealed on the container lid as such that no leaking would occur around the studs. All cell terminals shall be delivered with a flat washer, spring washer and nut for lugs connections.		
G3.6	CONNECTOR PLATES		
a	Suitable predrilled lengths of Tinned plates shall be supplied with each set of batteries in order to connect the cells together to form a battery bank of 30V or 110V. The length of plates may vary according the size of the cells offered. The plates shall be of robust design and able to conduct the normal charging, discharging and short circuit current capacities of the batteries on offer.		
G3.7	OPERATIONS		
a	The batteries shall be suitable for long shelf life and typically continuous operation cycles of discharging and charging. The load supplied would be protection and monitoring equipment in substations and would generally represent a standing load of 2 to 4 amps on the batteries. The operation of the batteries shall be guaranteed over a wide temperature range.		
G3.8	DISCHARGE PERIODS		
a	The batteries offered shall be suitable for very long discharge periods, typically from 2 hours up to 9 hours. A fast recover charge rate (6 to 8 hours) is required and data indicating the discharge / charge rates shall be included with this document.		

G3.9	BATTERY TYPES			
G3.9.1	Type of batteries	Vented pocket plate Nickel Cadmium		
a	Nominal voltage per cell	1.2 V		
b	Quantity as per 30 V set 11 Ahr	25 series connected		
c	Quantity as per 30 V set 29 Ahr	25 series connected		
d	Quantity as per 110 V set 29 Ahr	85 series connected		
e	Quantity as per 110 V set 49 Ahr	85 series connected		
f	Quantity as per 110 V set 105 Ahr	85 series connected		
g	Battery nominal voltage for 30 V sets	30 V		
h	Battery nominal voltage for 110 V sets	110 V		
i	Maximum boost / float voltage 30 V sets	35 V DC / 38 V DC (Pre-settable)		



j	Maximum boost / float voltage 110 V sets	125V DC / 142V DC (Pre-settable)		
k	Operating temperature	-10 - +40 deg Celcius		

G6. MINIATURE CIRCUIT BREAKERS

									Compliance	
Item No.	Description	Poles	Voltage	kA	Curve	MCB width(mm)	Std Pack	Rating Amps	Yes	No
G6.1 LOW VOLTAGE MINIATURE CIRCUIT BREAKERS – LOW RATING										
G6.1.1	Low Voltage Circuit Breaker QF-1(26) Orange Handle Dual Mount Low Rating	1	240	6	1	26	12	63		
G6.1.2	Low Voltage Circuit Breaker QF-1(26) White Handle Dual Mount Low Rating	1	240	6	2	26	12	10		
G6.1.3	Low Voltage Circuit Breaker QF-1(26) White Handle Dual Mount Low Rating	1	240	6	2	26	12	20		
G6.1.4	Low Voltage Circuit Breaker QF-1(26) White Handle Dual Mount Low Rating	1	240	6	2	26	12	63		
G6.1.5	Low Voltage Circuit Breaker QF-3(26) Orange Handle Dual Mount Low Rating	3	415	6	2	78	4	63		
G6.2 LOW VOLTAGE MINIATURE CIRCUIT BREAKERS – HIGH RATING									Yes	No
G6.2.1	Low Voltage Circuit Breaker QF-1(26) Orange Handle Dual Mount High Rating	1	240	6	1	26	12	80		
G6.2.2	Low Voltage Circuit Breaker QF-3(26) Orange Handle Dual Mount High Rating	3	415	6	1	78	4	80		
G6.2.3	Low Voltage Circuit Breaker QF-3(26) Orange Handle Dual Mount High Rating	3	415	6	1	78	4	100		
G6.2.4	Low Voltage Circuit Breaker QF-3(26) White Handle Dual Mount High Rating	3	415	6	2	78	4	100		



									Compliance	
Item No.	Description	Type	Poles	kA	Terminals	Voltage	No. interface barriers	Rating Amps	Yes	No
G6.3 MOULDED CASE CIRCUIT BREAKERS										
G6.3.1	Moulded Case Circuit Breaker (Thermal - Magnetic)	G15D	3	15	G1	415	4	100		
G6.3.2	Moulded Case Circuit Breaker (Thermal - Magnetic)	G15D	3	15	G1	415	4	125		
G6.3.3	Moulded Case Circuit Breaker (Thermal - Magnetic)	F15D	3	15	G1	415	4	150		
G6.3.4	Moulded Case Circuit Breaker (Hydraulic - Magnetic)	J25S	3	25	G1	415	4	80		
G6.3.5	Moulded Case Circuit Breaker (Hydraulic - Magnetic)	J25S	3	25	G1	415	4	100		
G6.3.6	Moulded Case Circuit Breaker (Hydraulic - Magnetic)	J25S	3	25	G1	415	4	125		
G6.3.7	Moulded Case Circuit Breaker (Hydraulic - Magnetic)	J25S	3	25	G1	415	4	150		
G6.3.8	Moulded Case Circuit Breaker (Hydraulic - Magnetic)	J25S	3	25	G4B	415	4	200		
G6.3.9	Moulded Case Circuit Breaker (Hydraulic - Magnetic)	J25S	3	25	G4B	415	4	225		
G6.3.10	Moulded Case Circuit Breaker (Hydraulic - Magnetic)	J25S	3	25	G4B	415	4	250		
G6.3.11	Moulded Case Circuit Breaker (Hydraulic - Magnetic)	L20B	3	20	G4B	415	4	250		
G6.3.12	Moulded Case Circuit Breaker (Hydraulic - Magnetic)	L20B	3	20	G4B	415	4	300		



G6.3.13	Moulded Case Circuit Breaker (Hydraulic - Magnetic)	L40B	3	40	G4B	415	4	200		
G6.3.14	Moulded Case Circuit Breaker (Hydraulic - Magnetic)	L40B	3	40	G4B	415	4	225		
G6.3.15	Moulded Case Circuit Breaker (Hydraulic - Magnetic)	L40B	3	40	G4B	415	4	350		

G8. EARTH LEAKAGES

									Compliance	
Item No.	Description	Type	Poles	k A	Sensitivity	Voltage	Width (mm)	Rating Amps	Yes	No
G8.1 SINGLE PHASE EARTH LEAKAGES										
G8.1.1	Hydraulic magnet single phase earth leakage. Mini & DIN rail mount. Must have a test button. Terminal wire size range 0.75mm2-25mm2.	QF17 A	2(1+N)	6	30mA	230	26	20		
G8.1.2		QF17 A	2(1+N)	6	30mA	230	26	40		
G8.1.3		QF17 A	2(1+N)	6	30mA	230	26	63		
G8.1.4		SF15A	2(1+N)	6	30mA	230	65	20		
G8.1.5	Hydraulic magnet single phase earth leakage. Mini rail & surface mount. Must have a test button. Terminal wire size range 0.75mm2-35mm2.	SF15A	2(1+N)	6	30mA	230	65	40		
G8.1.6		SF15A	2(1+N)	6	30mA	230	65	60		
G8.1.7		SF15A	2(1+N)	6	30mA	230	65	80		
G8.2 THREE PHASE EARTH LEAKAGES										
G8.2.1	Hydraulic magnet three phase earth leakage. Mini rail & Surface mount. Must have a test button. Terminal wire size range 0.75mm2-35mm2.	SM36 A	(3+N)	6	250mA	415	117	40		
G8.2.2		SM36 A	(3+N)	6	250mA	415	117	60		
G8.2.3		SM36 A	(3+N)	6	250mA	415	117	80		
G8.2.4		SM36 A	(3+N)	6	250mA	415	117	100		

G9. FUSE LINKS (For Oil Switchgears)



ITEM NO	Description	Compliance	
		YES	NO
G9.1.1	Fuse links shall be suitable for use in oil switchgears		
G9.1.2	Must be fitted with a powerful pyrotechnic strike pin		
G9.1.3	Must be suitable for use in 11kV and 12kV		
G9.1.4	Must comply with IEC 282-1, BS 2692-1 and ESI standard 12-8		
G9.1.5	Must be SABS approved		
G9.1.6	Current rating must be 31.5A or 40A or 63A or 100A		

G10. CONNECTOR STRIPS

ITEM NO	Description	Compliance	
		YES	NO
G10.1.1	Flexible black polypropylene with easy snap		
G10.1.2	Connector strip must be suitable for connecting single core wires rated 15 Amps or 30 Amps		

20.4.1 CABLE

20.4.1.1 LV & MV ALUMINIUM IN CONDUCTOR SIZES 50mm² AND LARGER WITH MINIMUM 18 WIRE CONSTRUCTIONS.

These cables must be sequentially marked with a 4mm wide tape which is inserted inside the conductor with the legend "STELLENBOSCH MUNICIPALITY" appearing at intervals of approximately 100mm on the tape. The cable embossing and drum markings shall include the following information below.

- STELLENBOSCH MUNICIPALITY
- Year of manufacture
- Voltage rating
- Conductor size
- Relevant SANS number as according to the specification
- Supplier's name

20.4.1.2 LV & MV ALUMINIUM IN CONDUCTOR SIZES SMALLER THAN 50mm²

These cables must be sequentially marked with a 4mm wide tape, which is applied to the cable during the process of laying up the cores and must be present under or over the bedding layer. This tape will include the legend "STELLENBOSCH MUNICIPALITY".

The cable embossing and drum markings shall include the following information below.

- STELLENBOSCH MUNICIPALITY
- Year of manufacture
- Voltage rating
- Conductor size
- Relevant SANS number as according to the specification
- Supplier's name



20.4.1.3	GENERAL			
a.	Nothing in this specification shall lessen the obligations of the supplier. The supplier shall be fully responsible for the design and its satisfactory performance in service. Approval by Stellenbosch Municipality shall not relieve the supplier of the responsibility for the adequacy of the design.			
20.4.1.4	COMPLIANCE WITH STANDARD SPECIFICATIONS		Yes	No
a.	Armoured cables shall comply with the requirements	SANS 1507-3:2007		
b.	Unarmoured cables shall comply with the requirements	SANS 1507-6:2007		
c.	Saferdac cables shall comply with the mixture requirements	SANS 1411-6 & 1411-1		

20.4.1.5 LOW VOLTAGE CABLE JOINTS – RESIN SPICING KIT

		Compliance	
Item no	Description/ specification	YES	NO
20.4.1.5.1	The LV cable joint resin spicing kit must • Be equipped for armoured cables • Be tough and moisture proof • Have Long lasting physical and electrical protection • Be complete and shall include tape to insulate, ferrules, sealing mould ends and flame-retardant resin Max Voltage: 1.1kV • Include SABS performance test report.		

20.4.1.6 CABLE GLANDS AND RUBBER SHROUDS ADJUSTABLE (Nickel Plated Brass)

			Compliance	
Item no.	Description/ specification	Gland size	Yes	No
20.4.1.6.1	• Must comply with SANS 1213. • Adjustable-fits any size armouring. • Gearbox Action to ensures unprecedented clamping force. • Loose Cone to ensures best armour grip. • To be completely re-usable. • To be adaptable to other thread types. • To be convertible for use with unarmoured cable.	1		
20.4.1.6.2		2		
20.4.1.6.3		3		
20.4.1.6.4		4		
20.4.1.6.5		5		

20.4.1.7 HEAT-SHRINK CABLE BREAKOUT BOOT

					Compliance	
Item no.	Description/ specification	Boot size (mm²)	Conductor size (mm²)	Type	Yes	No



20.4.1.7.1	To be manufactured from a high-quality cross-linked polymer compound. Suitable for terminating and sealing of low voltage cables, plastic, paper and rubber. Breakouts to be internally coated with a hot melt adhesive to prevent the ingress of moisture into the crutch are. Operating temperature range -30°C to +80°C. Good weather ability and UV resistance	16 x2C	1-25	EN2 30/8		
20.4.1.7.2		16 x4C	6-35	EN4 35/15		
20.4.1.7.3		35&70x4 C	25-150	EN4 60/25		
20.4.1.7.4		95x4C	70-185	EN4 75/30		

20.4.1.8 SILICONE CABLE

Description/ specification		Compliance	
		Yes	No
Voltage rating	450/750 Volts		
Temperature Range	-60°C to + 180°C		
Flexibility Class	5		
Conductor Type	Tinned flexible high conductivity copper		
Industrial Material	Silicone rubber		
Sheath Colour	Red		
Core Colours	3Core Blue, Brown and Green/Yellow		

20.4.2 GALVANISED STREETLIGHT POLES & MOUNTING ARMS

20.4.2.1	GALVANISED STREETLIGHT POLE		Yes	No
20.4.2.1.1	SPECIFICATION:	i) 50year mean return period ii) Category 2 Class B structure iii) Altitude –Sea level iv) Pole Length 14m v) Planting at 2m depth		
20.4.2.1.2	DESIGN CONDITIONS:	i) The poles must be designed to withstand a wind velocity of up to 150kph ii) The wind area of the pole must be calculated with a lantern wind area of 0.35m ² in addition to the tapering projected area of the pole iii) In the design of the poles the analysis must be based on the plastic theory, with result that all components have a – load		
20.4.2.1.3	CONSTRUCTION:	The construction of the poles must be from pre-formed steel pipe of various sizes welded together through reducers by means of continuous full strength butt welds, ie tubular stepped in sections.		
20.4.2.1.4	MATERIAL	The tubular material used is grade 300MPa to SABS 657 with welding conforming to SABS 1200 H minimum thickness 4mm.		
20.4.2.1.5	FINISH	The poles and all ancillary must be hot dipped galvanized to SABS 763 specification.		
20.4.2.1.6	BASE PLATE:	Planted poles are supplied with a loose base plate 400 x 400 x 4mm thick, which is attached to the pole shaft by means of 2 x M16 hook bolts.		



20.4.2.1.7	CABLE ENTRY:	A single cable entry 100 x 50mm wide is provided 400mm below ground level.		
20.4.2.1.8	PROTECTION SLEEVE:	The streetlight poles must be supplied with a ground sleeve 600mm long and 5mm thick. When planted the top portion of sleeve must be 100mm above ground level		
20.4.2.1.9	ACCESS OPENING:	A flush mounted door to be supplied with the poles as well as recessed Allen cap screw. Connection chamber to be at 2200mm/400mm above ground level.		
20.4.2.1.10	SPIGOT & ARM	Streetlight Bracket Galvanized Sleeve (42mm Spigot) – 150mm single 15° outreach arm as per streetlights at Newinbosch		



20.4.3 GALVANISED POLE HI MAST LIGHTING

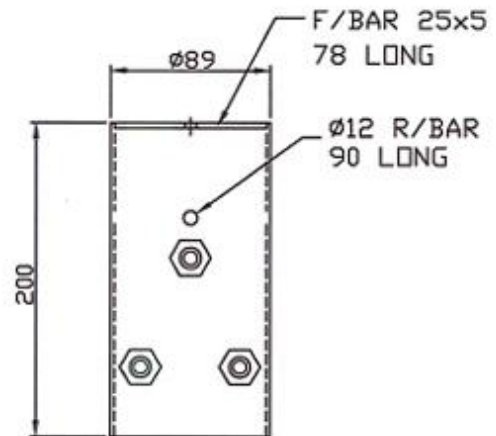
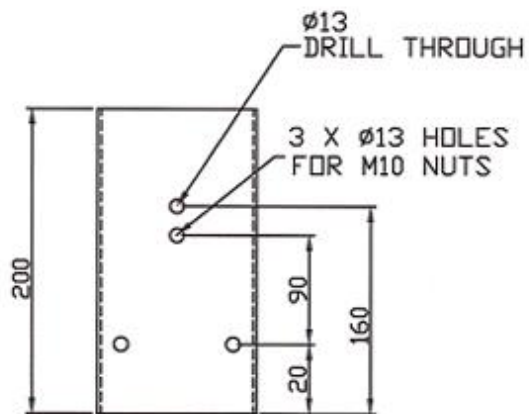
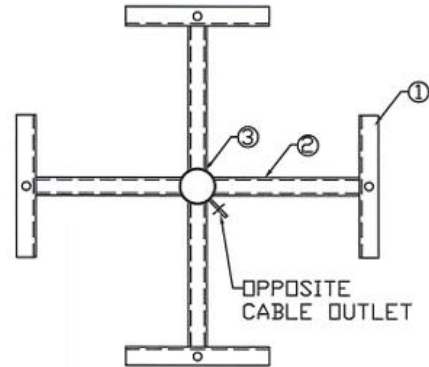
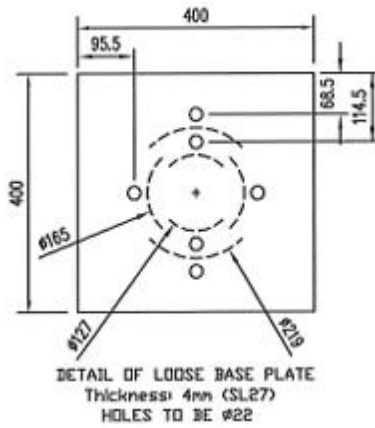
20.4.3.1	GALVANISED STREETLIGHT POLE		Yes	No
20.4.3.1.1	MAST TYPE	i) 20m Galvanised Steel Pole, complete with ii) 4 Way Floodlight Bracket to fit 6 lights max iii) Pole construction from preformed steel pipe iv) Various sizes welded together v) Poles to conform with SABS 657, 1200H and 763 vi) Poles supplied with loose baseplate of 400 x 400 x 4mm thick and attached to the Poleshaft by means of 2 x M16 hook bolts vii) Poles and ancillaries must be hot dipped galvanized to SABS 763 specification viii) Streetlight poles to be supplied with a ground sleeve 600mm long and 5mm thick. Top portion of sleeve to be 100mm above ground after planting		
20.4.3.1.2	LUMINAIRE TYPE	i) LED luminaires to be of floodlight type ii) Luminaires shall have galvanised mounting brackets and entire assembly body shall be high pressure die cast		
20.4.3.1.3	CONSTRUCTION:	The mast must be installed as per the drawings and verified by the engineer before installation starts A polyethelene box shall be mounted on the pole and shall house the streetlight control circuits for the floodlight system load		
20.4.3.1.4	EARTHING	An earth spike shall be installed at each light mast, as well as connected to the earthing stud provided in the mast as well as onto the earth bar of the pole mounted panel/box using 16sqmm copper running on the inside of the pole. A maximum of 10 ohm earth resistance shall be achieved all metal parts of system shall be earthed to the earth bar, and similarlt for all cable protective earth wires.		



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY





20.4.3.2	POLE VANDALISM PROTECTION UNIT		Yes	No
20.4.3.2.1	TYPE	Powercomm PPPU-1000 unit or similar in quality and appearance		
20.4.3.2.2	BURIAL	Sleeve covers access hatch, and burial 300 – 400mm		
20.4.3.1.3	CHARACTERISTICS	Top locking system, spike strips, lock		



20.5 BILL OF QUANTITIES

Stellenbosch Municipality Streetlights: Preliminary & General Phase One (1) of Three (3) for: Villages: Klapmuts, Jamestown & Raithby Traffic Light Intersections: Klapmuts & Annandale (R44)						
Schedule 20.5: Bill of Quantities						
PRELIMINARY & GENERAL						
ITEM	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
20.5.1		Preliminary & General				
20.5.1.1		Employer's specific requirements	sum	1		R -
20.5.1.2		Contractual requirements	sum	1		R -
20.5.1.3		Establish Construction Site (Including site office and ablution facilities)	sum	1		R -
20.5.1.4		Evacuate and clean construction site after completion of project	sum	1		R -
20.5.1.5		Transport materials to site	sum	1		R -
20.5.1.6		Site establish/de-establish earthworks plant	sum	1		R -
20.5.1.7		Site establish/deestablish site fencing	sum	1		R -
20.5.1.8		Induction and medicals	sum	1		R -
20.5.1.9		Health & safety compliance and plan	sum	1		R -
20.5.1.10		Environmental management plan	sum	1		R -
20.5.1.11		Quality management plan	sum	1		R -
20.5.1.12		Completion of hand over documentation	sum	1		R -
20.5.1.13		Operating manuals with test certificates	sum	1		R -
20.5.1.14		Allowance for Factory Acceptance Tests (FAT) for 4 people including all expenses (Travel, acc, etc)	sum	1		R -
20.5.1.15		Allowance for Site Acceptance Test (SAT)	sum	1		R -
20.5.1.16		Insurance and Guarantees	sum	1		R -
20.5.1.17		Coordination with client and other staff for outages, permits, etc	sum	1		R -
20.5.1.18		Project / Contract Board	sum	1		R -
20.5.1.19		Upon construction and/or remedial works: Contractor shall prepare accurate as-built documentation (equipment datasheets, material datasheets, layout drawings, diagrams, schematics, etc.) for the works that the contractor has completed under this scope for all sites and provide the as-built information in acceptable format (DWG and PDF formats) to the Engineer and Client.	sum	1		R -
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Preliminary & General Phase One (1) of Three (3) for:						
Villages: Klapmuts, Jamestown & Raithby						
Traffic Light Intersections: Klapmuts & Annandale (R44)						
PRELIMINARY & GENERAL						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.1.20		Allowance: contractor attend to all sites, to verify the location, type, quantity and capacity of existing electrical kiosks and streetlight infrastructure (streetlight poles/masts, luminaire types, cable lengths, cable sizes, etc.).	sum	1		R -
20.5.1.21		Provision for professional Land Surveyor to mark out position of equipment/poles	each	1		R -
Contractor Time Related Items						
20.5.1.22		Contractual requirements	month	9		R -
20.5.1.23		Operate/Maintain Site	month	9		R -
20.5.1.24		Works Supervision	month	9		R -
20.5.1.25		SHEQ Requirements	month	9		R -
20.5.1.26		Transport Personnel to Site	month	9		R -
20.5.1.27		EPWP: CLO	month	9		R -
20.5.1.28		Plant Hire	month	9		R -
20.5.1.29		Generator for general use 230VAC	month	9		R -
20.5.1.30		Plant Hire	month	9		R -
20.5.1.31		Generator for general use 230VAC	month	9		R -
20.5.1.32		Generator for construction power	month	9		R -
20.5.1.33		Overhead Cost	month	9		R -
Day Works						
20.5.1.34		Provide work as requested by engineer	hr	8		R -
20.5.1.35		Contract manager				
20.5.1.36		Electrician	hr	8		R -
20.5.1.37		Semi Skilled Labour	hr	8		R -
20.5.1.38		Labour	hr	8		R -
20.5.1.39		Material (Invoices to be provided)	sum			
20.5.1.40		Overheads, charges and profit mark-up on the above	%	10		R -
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Preliminary & General Phase One (1) of Three (3) for:						
Villages: Klapmuts, Jamestown & Raithby						
Traffic Light Intersections: Klapmuts & Annandale (R44)						
PRELIMINARY & GENERAL						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.1.41		Security Provision of 24hr, 7 days a week for the duration of the project	month	9		R -
20.5.1.42		Applications, Permits & Wayleaves: Arrange & coordinate the following with, but not limited to, Stellenbosch Municipality and any other 3rd parties necessary: Electrical isolation requirements for the site as and when required for the entire project duration in the relevant area of work	sum	1		R -
20.5.1.43		Permits to work for the entire project duration in the relevant area of work	sum	1		R -
20.5.1.44		Creation, coordination and the obtaining of approval for any and all wayleave requirements for the area of work	sum	1		R -
20.5.1.45		Other Fixed Items (Specify) - If none, indicate "0" costing values	sum	1		R -
20.5.1.46			sum	1		R -
20.5.1.47			sum	1		R -
20.5.1.48			sum	1		R -
20.5.1.49			sum	1		R -
20.5.1.50			sum	1		R -
Total Carried Forward To Summary						R -



Stellenbosch Municipality Streetlights: Preliminary & General Phase Two (2) of Three (3) for: Traffic Light Intersections: Vlaeberg, Lyndoch, Polkadraai, Koelenhof Provincial Roads: MR 177 km 29.78 to km 32.25 and MR 187 13.00 to km 14.71						
Schedule 20.5: Bill of Quantities						
PRELIMINARY & GENERAL						
ITEM	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
20.5.1		Preliminary & General				
20.5.1.1		Employer's specific requirements	sum	1	R	-
20.5.1.2		Contractual requirements	sum	1	R	-
20.5.1.3		Establish Construction Site (Including site office and ablution facilities)	sum	1	R	-
20.5.1.4		Evacuate and clean construction site after completion of project	sum	1	R	-
20.5.1.5		Transport materials to site	sum	1	R	-
20.5.1.6		Site establish/de-establish earthworks plant	sum	1	R	-
20.5.1.7		Site establish/deestablish site fencing	sum	1	R	-
20.5.1.8		Induction and medicals	sum	1	R	-
20.5.1.9		Health & safety compliance and plan	sum	1	R	-
20.5.1.10		Environmental management plan	sum	1	R	-
20.5.1.11		Quality management plan	sum	1	R	-
20.5.1.12		Completion of hand over documentation	sum	1	R	-
20.5.1.13		Operating manuals with test certificates	sum	1	R	-
20.5.1.14		Allowance for Factory Acceptance Tests (FAT) for 4 people including all expenses (Travel, acc, etc)	sum	1	R	-
20.5.1.15		Allowance for Site Acceptance Test (SAT)	sum	1		
20.5.1.16		Insurance and Guarantees	sum	1	R	-
20.5.1.17		Coordination with client and other staff for outages, permits, etc	sum	1	R	-
20.5.1.18		Project / Contract Board	sum	1	R	-
20.5.1.19		Upon construction and/or remedial works: Contractor shall prepare accurate as-built documentation (equipment datasheets, material datasheets, layout drawings, diagrams, schematics, etc.) for the works that the contractor has completed under this scope for all sites and provide the as-built information in acceptable format (DWG and PDF formats) to the Engineer and Client.	sum	1	R	-
Total Carried Forward To Next Page						R -



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: Preliminary & General Phase Two (2) of Three (3) for: Traffic Light Intersections: Vlaeberg, Lyndoch, Polkadraai, Koelenhof Provincial Roads: MR 177 km 29.78 to km 32.25 and MR 187 13.00 to km 14.71						
PRELIMINARY & GENERAL						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.1.20		Allowance: contractor attend to all sites, to verify the location, type, quantity and capacity of existing electrical kiosks and streetlight infrastructure (streetlight poles/masts, luminaire types, cable lengths, cable sizes, etc.).	sum	1		R -
20.5.1.21		Provision for professional Land Surveyor to mark out position of equipment/poles	each	1		R -
Contractor Time Related Items						
20.5.1.22		Contractual requirements	month	8		R -
20.5.1.23		Operate/Maintain Site	month	8		R -
20.5.1.24		Works Supervision	month	8		R -
20.5.1.25		SHEQ Requirements	month	8		R -
20.5.1.26		Transport Personnel to Site	month	8		R -
20.5.1.27		EPWP: CLO	month	8		R -
20.5.1.28		Plant Hire	month	8		R -
20.5.1.29		Generator for general use 230VAC	month	8		R -
20.5.1.30		Plant Hire	month	8		R -
20.5.1.31		Generator for general use 230VAC	month	8		R -
20.5.1.32		Generator for construction power	month	8		R -
20.5.1.33		Overhead Cost	month	8		R -
Day Works						
20.5.1.34		Provide work as requested by engineer	hr	8		R -
20.5.1.35		Contract manager				
20.5.1.36		Electrician	hr	8		R -
20.5.1.37		Semi Skilled Labour	hr	8		R -
20.5.1.38		Labour	hr	8		R -
20.5.1.39		Material (Invoices to be provided)	sum			
20.5.1.40		Overheads, charges and profit mark-up on the above	%	10		R -
Total Carried Forward To Next Page						R -



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: Preliminary & General Phase Two (2) of Three (3) for:						
Traffic Light Intersections: Vlaeberg, Lyndoch, Polkadraai, Koelenhof						
Provincial Roads: MR 177 km 29.78 to km 32.25 and MR 187 13.00 to km 14.71						
PRELIMINARY & GENERAL						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.1.41		Security Provision of 24hr, 7 days a week for the duration of the project	month	8		R -
20.5.1.42		Applications, Permits & Wayleaves: Arrange & coordinate the following with, but not limited to, Stellenbosch Municipality and any other 3rd parties necessary: Electrical isolation requirements for the site as and when required for the entire project duration in the relevant area of work	sum	1		R -
20.5.1.43		Permits to work for the entire project duration in the relevant area of work	sum	1		R -
20.5.1.44		Creation, coordination and the obtaining of approval for any and all wayleave requirements for the area of work	sum	1		R -
20.5.1.45		Other Fixed Items (Specify) - If none, indicate "0" costing values	sum	1		R -
20.5.1.46			sum	1		R -
20.5.1.47			sum	1		R -
20.5.1.48			sum	1		R -
20.5.1.49			sum	1		R -
20.5.1.50			sum	1		R -
Total Carried Forward To Summary						R -



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: Preliminary & General Phase Three (3) of Three (3) for:

Villages: Lanquedoc, La Motte & Kylemore

Provincial Roads: MR 172 km 10.43 to km 13.34 and MR 191 km 19.64 to km 23.71 and

MR 172 / MR191 km 15.76

Schedule 20.5: Bill of Quantities

PRELIMINARY & GENERAL

ITEM	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
20.5.1		Preliminary & General				
20.5.1.1		Employer's specific requirements	sum	1		R -
20.5.1.2		Contractual requirements	sum	1		R -
20.5.1.3		Establish Construction Site (Including site office and ablution facilities)	sum	1		R -
20.5.1.4		Evacuate and clean construction site after completion of project	sum	1		R -
20.5.1.5		Transport materials to site	sum	1		R -
20.5.1.6		Site establish/de-establish earthworks plant	sum	1		R -
20.5.1.7		Site establish/deestablish site fencing	sum	1		R -
20.5.1.8		Induction and medicals	sum	1		R -
20.5.1.9		Health & safety compliance and plan	sum	1		R -
20.5.1.10		Environmental management plan	sum	1		R -
20.5.1.11		Quality management plan	sum	1		R -
20.5.1.12		Completion of hand over documentation	sum	1		R -
20.5.1.13		Operating manuals with test certificates	sum	1		R -
20.5.1.14		Allowance for Factory Acceptance Tests (FAT) for 4 people including all expenses (Travel, acc, etc)	sum	1		R -
20.5.1.15		Allowance for Site Acceptance Test (SAT)	sum	1		R -
20.5.1.16		Insurance and Guarantees	sum	1		R -
20.5.1.17		Coordination with client and other staff for outages, permits, etc	sum	1		R -
20.5.1.18		Project / Contract Board	sum	1		R -
20.5.1.19		Upon construction and/or remedial works: Contractor shall prepare accurate as-built documentation (equipment datasheets, material datasheets, layout drawings, diagrams, schematics, etc.) for the works that the contractor has completed under this scope for all sites and provide the as-built information in acceptable format (DWG and PDF formats) to the Engineer and Client.	sum	1		R -
Total Carried Forward To Next Page						R -



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: Preliminary & General Phase Three (3) of Three (3) for: Villages: Lanquedoc, La Motte & Kylemore Provincial Roads: MR 172 km 10.43 to km 13.34 and MR 191 km 19.64 to km 23.71 and						
PRELIMINARY & GENERAL						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.1.20		Allowance: contractor attend to all sites, to verify the location, type, quantity and capacity of existing electrical kiosks and streetlight infrastructure (streetlight poles/masts, luminaire types, cable lengths, cable sizes, etc.).	sum	1		R -
20.5.1.21		Provision for professional Land Surveyor to mark out position of equipment/poles	each	1		R -
Contractor Time Related Items						
20.5.1.22		Contractual requirements	month	14		R -
20.5.1.23		Operate/Maintain Site	month	14		R -
20.5.1.24		Works Supervision	month	14		R -
20.5.1.25		SHEQ Requirements	month	14		R -
20.5.1.26		Transport Personnel to Site	month	14		R -
20.5.1.27		EPWP: CLO	month	14		R -
20.5.1.28		Plant Hire	month	14		R -
20.5.1.29		Generator for general use 230VAC	month	14		R -
20.5.1.30		Plant Hire	month	14		R -
20.5.1.31		Generator for general use 230VAC	month	14		R -
20.5.1.32		Generator for construction power	month	14		R -
20.5.1.33		Overhead Cost	month	14		R -
Day Works						
20.5.1.34		Provide work as requested by engineer	hr	8		R -
20.5.1.35		Contract manager				
20.5.1.36		Electrician	hr	8		R -
20.5.1.37		Semi Skilled Labour	hr	8		R -
20.5.1.38		Labour	hr	8		R -
20.5.1.39		Material (Invoices to be provided)	sum			
20.5.1.40		Overheads, charges and profit mark-up on the above	%	10		R -
Total Carried Forward To Next Page						R -



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: Preliminary & General Phase Three (3) of Three (3) for:						
Villages: Langedoc, La Motte & Kylemore						
Provincial Roads: MR 172 km 10.43 to km 13.34 and MR 191 km 19.64 to km 23.71 and						
PRELIMINARY & GENERAL						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.1.41		Security Provision of 24hr, 7 days a week for the duration of the project	month	14		R -
20.5.1.42		Applications, Permits & Wayleaves: Arrange & coordinate the following with, but not limited to, Stellenbosch Municipality and any other 3rd parties necessary: Electrical isolation requirements for the site as and when required for the entire project duration in the relevant area of work	sum	1		R -
20.5.1.43		Permits to work for the entire project duration in the relevant area of work	sum	1		R -
20.5.1.44		Creation, coordination and the obtaining of approval for any and all wayleave requirements for the area of work	sum	1		R -
20.5.1.45		Other Fixed Items (Specify) - If none, indicate "0" costing values	sum	1		R -
20.5.1.46			sum	1		R -
20.5.1.47			sum	1		R -
20.5.1.48			sum	1		R -
20.5.1.49			sum	1		R -
20.5.1.50			sum	1		R -
Total Carried Forward To Summary						R -



Stellenbosch Municipality Streetlights: Village Raithby

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
STREETLIGHTS VILLAGE RAITHBY						
20.5.2		2.5mm² x 3-core thermal uv resistant silicone cable				
20.5.2.1		Terminations for 2.5mm ² silicone cable (Including supply all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	m	442.0	R	-
20.5.2.2		Installation for above only	m	442.0	R	-
20.5.2.3		Terminations for 2.5mm ² silicone cable (Including supply all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	144.0	R	-
20.5.2.4		Installation for above only	each	144.0	R	-
20.5.2.5		Terminations for 2.5mm ² silicone cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	m	10.0	Rate Only	
20.5.2.6		Installation for above only	each	2.0	Rate Only	
20.5.3		25mm² x 4-core Alu ABC LV cable				
20.5.3.1		Supply and delivery only	m	470.0	R	-
20.5.3.2		Installation for above only	m	470.0	R	-
20.5.3.3		Terminations for 25mm ² Alu ABC cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	30.0	R	-
20.5.3.4		Supply and delivery only	m	40.0	Rate Only	
20.5.3.5		Installation for above only	m	40.0	Rate Only	
20.5.3.6		Terminations for 25mm ² Alu ABC cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0	Rate Only	
20.5.4		25mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.4.1		Supply and delivery only	m	1 840.0	R	-
20.5.4.2		Installation for above only	m	1 840.0	R	-
20.5.4.3		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	46.0	R	-
20.5.4.4		Supply and delivery only	m	40.0	Rate Only	
20.5.4.5		Installation for above only	m	40.0	Rate Only	
20.5.4.6		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village Raithby

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.5		35mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.5.1		Supply and delivery only	m	50.0		Rate Only
20.5.5.2		Installation for above only	m	50.0		Rate Only
20.5.5.3		Terminations for 35mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.6		50mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.6.1		Supply and delivery only	m	50.0		Rate Only
20.5.6.2		Installation for above only	m	50.0		Rate Only
20.5.6.3		Terminations for 50mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.7		70mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.7.1		Supply and delivery only	m	50.0		Rate Only
20.5.7.2		Installation for above only	m	50.0		Rate Only
20.5.7.3		Terminations for 70mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.8		Wooden Streetlight Poles 9m				
20.5.8.1		Supply and delivery of pole	each	15.0		R -
20.5.8.2		Installation for above only	each	15.0		R -
20.5.8.3		Supply and delivery of pole	each	1.0		Rate Only
20.5.8.4		Installation for above only	each	1.0		Rate Only
20.5.9		Wooden Streetlight Poles 11m				
20.5.9.1		Supply and delivery of pole	each	7.0		R -
20.5.9.2		Installation for above only	each	7.0		R -
20.5.9.3		Supply and delivery of pole	each	1.0		Rate Only
20.5.9.4		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY



Stellenbosch Municipality Streetlights: Village Raithby

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.10		Anti Vandal System Implementations				
		Concrete Pole Support Anti Vandalism of Cables on metal, concrete and fibre glass poles				
20.5.10.1		Supply and delivery of concrete structure	each	5.0	R	-
20.5.10.2		Installation for above only	each	5.0	R	-
20.5.10.3		Supply and delivery of concrete structure	each	1.0	Rate Only	
20.5.10.4		Installation for above only	each	1.0	Rate Only	
		Galvanised 2.4m Steel Pipe Anti Vandalism of Cables on Wooden Poles				
20.5.10.5		Supply and delivery of pipe	each	26.0	R	-
20.5.10.6		Installation for above only	each	26.0	R	-
20.5.10.7		Supply and delivery of pipe	each	1.0	Rate Only	
20.5.10.8		Installation for above only	each	1.0	Rate Only	
20.5.11		Concrete Streetlight Poles 4.5m				
20.5.11.1		Supply and delivery of pole	each	20.0	R	-
20.5.11.2		Installation for above only	each	20.0	R	-
20.5.12		Concrete Streetlight Poles 5.7m				
20.5.12.1		Supply and delivery of pole	each	1.0	Rate Only	
20.5.12.2		Installation for above only	each	1.0	Rate Only	
20.5.13		Concrete Streetlight Poles 7.2m				
20.5.13.1		Supply and delivery of pole	each	1.0	Rate Only	
20.5.13.2		Installation for above only	each	1.0	Rate Only	
20.5.14		Galvanised Steel Streetlight Poles 9m				
20.5.14.1		Supply and delivery of pole	each	8.0	R	-
20.5.14.2		Installation for above only	each	8.0	R	-
20.5.14.3		Supply and delivery of pole	each	1.0	Rate Only	
20.5.14.4		Installation for above only	each	1.0	Rate Only	
20.5.15		Galvanised Steel Streetlight Poles 11m				
20.5.15.1		Supply and delivery of pole	each	18.0	R	-
20.5.15.2		Installation for above only	each	18.0	R	-
20.5.15.3		Supply and delivery of pole	each	1.0	Rate Only	
20.5.15.4		Installation for above only	each	1.0	Rate Only	
20.5.16		Galvanised Steel Outreach Arms Straight 1m 0° for Streetlight Poles				
20.5.16.1		Supply and delivery of outreach arm	each	22.0	R	-
20.5.16.2		Installation for above only	each	22.0	R	-
20.5.16.3		Supply and delivery of outreach arm	each	1.0	Rate Only	
20.5.16.4		Installation for above only	each	1.0	Rate Only	
Total Carried Forward To Next Page						R -



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: Village Raithby

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.17		Galvanised Steel Outreach Arms Curved 1m for Streetlight Poles				
20.5.17.1		Supply and delivery of outreach arm	each	41.0	R	-
20.5.17.2		Installation for above only	each	41.0	R	-
20.5.17.3		Supply and delivery of outreach arm	each	1.0	Rate Only	
20.5.17.4		Installation for above only	each	1.0	Rate Only	
20.5.18		Spigots				
20.5.18.1		Supply and delivery of 42mm Spigot	each	41.0	R	-
20.5.18.2		Installation for above only	each	41.0	R	-
20.5.18.3		Supply and delivery of 42mm Spigot	each	1.0	Rate Only	
20.5.18.4		Installation for above only	each	1.0	Rate Only	
20.5.19		LED Luminaires				
20.5.19.1		Supply and delivery of 36W with 180 lm/W nominal efficacy or higher (Beka or similar approved)	each	28	R	-
20.5.19.2		Installation for above only	each	28	R	-
20.5.19.3		Supply and delivery of 36W with 180 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.19.4		Installation for above only	each	1	Rate Only	
20.5.19.5		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	24	R	-
20.5.19.6		Installation for above only	each	24	R	-
20.5.19.7		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.19.8		Installation for above only	each	1	Rate Only	
20.5.19.9		Supply & delivery of 103W with 173 lm/W nominal efficacy or higher (Beka or similar approved)	each	6	R	-
20.5.19.10		Installation for above only	each	6	R	-
20.5.19.11		Supply & delivery of 103W with 173 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.19.12		Installation for above only	each	1	Rate Only	
20.5.19.13		Supply & delivery of 37W with 175 lm/W nominal efficacy or higher (Beka LED Post top Retrofit)	each	2	R	-
20.5.19.14		Installation for above only	each	2	R	-
20.5.19.15		Supply & delivery of 37W with 175 lm/W nominal efficacy or higher (Beka LED Post top Retrofit)	each	1	Rate Only	
20.5.19.16		Installation for above only	each	1	Rate Only	
20.5.19.17		Supply & delivery of 37W with 175 lm/W nominal efficacy or higher (Beka LED Post top Unit)	each	20	R	-
20.5.19.18		Installation for above only	each	20	R	-
20.5.19.19		Supply & delivery of 37W with 175 lm/W nominal efficacy or higher (Beka LED Post top Unit)	each	1	Rate Only	
20.5.19.20		Installation for above only	each	1	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village Raithby

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.20		Kiosks				
20.5.20.1		Supply and delivery of 18 way 3CR12 Vandal Proof Kiosk, populated as per Stellenbosch Municipality Specification	Item	3	R	-
20.5.20.2		Installation with concrete plinth for above only	Item	3	R	-
20.5.20.3		Supply and delivery of 18 way 3CR12 Vandal Proof Pole Mounted Kiosk, fully and completely populated as per Stellenbosch Municipality Specification	Item	1	R	-
20.5.20.4		Installation with supplied and installed pole for above only	Item	1	R	-
20.5.20.5		Supply and delivery of 18 way 3CR12 Vandal Proof Pole Mounted Kiosk, fully and completely populated as per Stellenbosch Municipality Specification	Item	1	Rate only	
20.5.20.6		Installation with supplied and installed pole for above only	Item	1	Rate only	
20.5.20.7		Supply and delivery of Day/Night Switch	Item	1	Rate only	
20.5.20.8		Installation of Day/Night Switch	Item	1	Rate only	
20.5.21		Old Equipment / Materials Removal				
20.5.21.1		Overhead Cable Removal	m	510.0	R	-
20.5.21.2		Underground cable Removal	m	230.0	R	-
20.5.21.3		Delivery to Municipal Store of above only	each	1.0	R	-
20.5.21.4		Overhead Cable Removal	m	40.0	Rate Only	
20.5.21.5		Underground cable Removal	m	40.0	Rate Only	
20.5.21.6		Delivery to Municipal Store of above only	each	1.0	Rate Only	
20.5.21.7		Removal of old pole, luminaire, spigot and bracket	each	20.0	R	-
20.5.21.8		Delivery to Stellenbosch Municipal Store for above only	each	20.0	R	-
20.5.21.9		Removal of old pole, luminaire, spigot and bracket	each	1.0	Rate Only	
20.5.21.10		Delivery to Stellenbosch Municipal Store for above only	each	1.0	Rate Only	
20.5.21.11		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client: Disposal certificates, Record including origin (site & street name) luminaire type, wattage & quantities	per 25	1.0	R	-
20.5.21.12		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client: Disposal certificates, Record including origin (site & street name) luminaire type, wattage & quantities	per 25	1.0	Rate Only	
Total Carried Forward To Next Page						R -



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: Village Raithby

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
						R -
20.5.22		Excavations:				
		Excavate 0.7m deep x 0.6m wide, backfill and compact for cables				
20.5.22.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	398	R	-
20.5.22.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	199	R	-
20.5.22.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	199	R	-
20.5.22.4		Import, install and compaction of bedding materials to/on site	m ³	398	R	-
20.5.22.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	398	R	-
20.5.22.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	796.0	R	-
20.5.23		Excavate 2m deep x 1m wide, backfill and compact for poles (Option 1 of 2)				
20.5.23.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	82	R	-
20.5.23.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	41	R	-
20.5.23.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	41	R	-
20.5.23.4		Import, install and compaction of bedding materials to/on site	m ³	82	R	-
20.5.23.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	82	R	-
20.5.23.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	164	R	-
20.5.24		Drilling (Alternative option to excavation for poles- Option 2 of 2)				
20.5.24.1		"Drilling of single pole hole to 1.2m depth in "soft" soil."	each	1.0	R	-
20.5.24.2		"Drilling of single pole hole to 1.2m depth in "intermediate" soil	each	1.0	R	-
20.5.24.3		"Drilling of single pole hole to 1.2m depth in "hard" soil	each	1.0	R	-
20.5.24.4		"Drilling of single pole hole to 1.5m depth in "soft" soil	each	6.0	R	-
20.5.24.5		"Drilling of single pole hole to 1.5m depth in "intermediate" soil	each	6.0	R	-
20.5.24.6		"Drilling of single pole hole to 1.5m depth in "hard" soil	each	14.0	R	-
20.5.24.7		"Drilling of single pole hole to 2.0m depth in "soft" soil	each	8.0	R	-
20.5.24.8		"Drilling of single pole hole to 2.0m depth in "intermediate" soil	each	8.0	R	-
20.5.24.9		"Drilling of single pole hole to 2.0m depth in "hard" soil	each	17.0	R	-
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village Raithby

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
						R -
20.5.25		Scanning				
20.5.25.1		Scanning for existing services before digging and/or boring, and/or drilling	m ²	1 827.0	R	-
20.5.26		Auxiliary installation requirements: Directional boring: (Note that these items will be subject to coordination with, and approval by the engineering representative, and the right of the engineering representative is reserved to either include or exclude the following items as and when required throughout the duration of the project)				
20.5.26.1		0m to less than 5m directional boring in length	ea	20	R	-
20.5.26.2		5m to 7m directional boring in length	ea	1	R	-
20.5.26.3		Greater than 7m and up to 10m directional in boring	ea	3	R	-
20.5.26.4		Boring rig setup at specific drilling site location(s)	ea	24	R	-
20.5.26.5		0m to less than 5m directional boring in length	ea	1	Rate only	
20.5.26.6		5m to 7m directional boring in length	ea	1	Rate only	
20.5.26.7		Greater than 7m and up to 10m directional boring in length	ea	1	Rate only	
20.5.26.8		Greater than 10m and up to 15m directional boring in length	ea	1	Rate only	
20.5.26.9		Greater than 15m and up to 20m directional boring in length	ea	1	Rate only	
20.5.26.10		Greater than 20m and up to 30m directional boring in length	ea	1	Rate only	
20.5.26.11		Boring rig setup at specific drilling site location(s)	ea	1	Rate only	
Total Carried Forward To Summary						R -



Stellenbosch Municipality Streetlights: Village Jamestown

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
STREETLIGHTS VILLAGE JAMESTOWN						
20.5.2		2.5mm² x 3-core thermal uv resistant silicone cable				
20.5.2.1		Terminations for 2.5mm ² silicone cable (Including supply all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	m	590.0	R	-
20.5.2.2		Installation for above only	m	590.0	R	-
20.5.2.3		Terminations for 2.5mm ² silicone cable (Including supply all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	206.0	R	-
20.5.2.4		Installation for above only	each	206.0	R	-
20.5.2.5		Terminations for 2.5mm ² silicone cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	m	10.0	Rate Only	
20.5.2.6		Installation for above only	each	2.0	Rate Only	
20.5.3		25mm² x 4-core Alu ABC LV cable				
20.5.3.1		Supply and delivery only	m	1 155.0	R	-
20.5.3.2		Installation for above only	m	1 155.0	R	-
20.5.3.3		Terminations for 25mm ² Alu ABC cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	71.0	R	-
20.5.3.4		Supply and delivery only	m	40.0	Rate Only	
20.5.3.5		Installation for above only	m	40.0	Rate Only	
20.5.3.6		Terminations for 25mm ² Alu ABC cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0	Rate Only	
20.5.4		25mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.4.1		Supply and delivery only	m	2 322.0	R	-
20.5.4.2		Installation for above only	m	2 322.0	R	-
20.5.4.3		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	120.0	R	-
20.5.4.4		Supply and delivery only	m	40.0	Rate Only	
20.5.4.5		Installation for above only	m	40.0	Rate Only	
20.5.4.6		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village Jamestown

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.5		35mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.5.1		Supply and delivery only	m	50.0		Rate Only
20.5.5.2		Installation for above only	m	50.0		Rate Only
20.5.5.3		Terminations for 35mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.6		50mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.6.1		Supply and delivery only	m	50.0		Rate Only
20.5.6.2		Installation for above only	m	50.0		Rate Only
20.5.6.3		Terminations for 50mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.7		70mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.7.1		Supply and delivery only	m	50.0		Rate Only
20.5.7.2		Installation for above only	m	50.0		Rate Only
20.5.7.3		Terminations for 70mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.8		Wooden Streetlight Poles 9m				
20.5.8.1		Supply and delivery of pole	each	31.0		R -
20.5.8.2		Installation for above only	each	31.0		R -
20.5.8.3		Supply and delivery of pole	each	1.0		Rate Only
20.5.8.4		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY



Stellenbosch Municipality Streetlights: Village Jamestown

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.9		Anti Vandal System Implementations				
		Concrete Pole Support Anti Vandalism of Cables on metal, concrete and fibre glass poles				
20.5.9.1		Supply and delivery of concrete structure	each	37.0	R	-
20.5.9.2		Installation for above only	each	37.0	R	-
20.5.9.3		Supply and delivery of concrete structure	each	1.0	Rate Only	
20.5.9.4		Installation for above only	each	1.0	Rate Only	
		Galvanised 2.4m Steel Pipe Anti Vandalism of				
20.5.9.5		Supply and delivery of pipe	each	325.0	R	-
20.5.9.6		Installation for above only	each	325.0	R	-
20.5.9.7		Supply and delivery of pipe	each	1.0	Rate Only	
20.5.9.8		Installation for above only	each	1.0	Rate Only	
20.5.10		Concrete Streetlight Poles 4.5m				
20.5.10.1		Supply and delivery of pole	each	10.0	Rate Only	
20.5.10.2		Installation for above only	each	10.0	Rate Only	
20.5.11		Concrete Streetlight Poles 5.7m				
20.5.11.1		Supply and delivery of pole	each	1.0	Rate Only	
20.5.11.2		Installation for above only	each	1.0	Rate Only	
20.5.12		Galvanised Steel Streetlight Poles 9m				
20.5.12.1		Supply and delivery of pole	each	4.0	R	-
20.5.12.2		Installation for above only	each	4.0	R	-
20.5.12.3		Supply and delivery of pole	each	1.0	Rate Only	
20.5.12.4		Installation for above only	each	1.0	Rate Only	
20.5.13		Galvanised Steel Streetlight Poles 11m				
20.5.13.1		Supply and delivery of pole	each	26.0	R	-
20.5.13.2		Installation for above only	each	26.0	R	-
20.5.13.3		Supply and delivery of pole	each	1.0	Rate Only	
20.5.13.4		Installation for above only	each	1.0	Rate Only	
20.5.14		Galvanised Steel Outreach Arms Straight 1m 0° for Streetlight Poles				
20.5.14.1		Supply and delivery of outreach arm	each	9.0	R	-
20.5.14.2		Installation for above only	each	9.0	R	-
20.5.14.3		Supply and delivery of outreach arm	each	1.0	Rate Only	
20.5.14.4		Installation for above only	each	1.0	Rate Only	
20.5.15		Galvanised Steel Outreach Arms Curved 1m 0° for Streetlight Poles				
20.5.15.1		Supply and delivery of outreach arm	each	34.0	R	-
20.5.15.2		Installation for above only	each	34.0	R	-
20.5.15.3		Supply and delivery of outreach arm	each	1.0	Rate Only	
20.5.15.4		Installation for above only	each	1.0	Rate Only	
Total Carried Forward To Next Page						R -



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: Village Jamestown

Schedule 20.5: Bill of Quantities

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.16		Galvanised Steel Outreach Arms Straight 300mm for Streetlight Poles				
20.5.16.1		Supply and delivery of outreach arm	each	14.0	R	-
20.5.16.2		Installation for above only	each	14.0	R	-
20.5.16.3		Supply and delivery of outreach arm	each	1.0	Rate Only	
20.5.16.4		Installation for above only	each	1.0	Rate Only	
20.5.17		Spigots				
20.5.17.1		Supply and delivery of 42mm Spigot	each	54.0	R	-
20.5.17.2		Installation for above only	each	54.0	R	-
20.5.17.3		Supply and delivery of 42mm Spigot	each	1.0	Rate Only	
20.5.17.4		Installation for above only	each	1.0	Rate Only	
20.5.18		LED Luminaires				
20.5.18.1		Supply and delivery of 36W with 180 lm/W nominal efficacy or higher (Beka or similar approved)	each	95	R	-
20.5.18.2		Installation for above only	each	95	R	-
20.5.18.3		Supply and delivery of 36W with 180 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.18.4		Installation for above only	each	1	Rate Only	
20.5.18.5		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	25	R	-
20.5.18.6		Installation for above only	each	25	R	-
20.5.18.7		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.18.8		Installation for above only	each	1	Rate Only	
20.5.18.9		Supply & delivery of 37W with 175 lm/W nominal efficacy or higher (Beka LED Post top Retrofit)	each	37	R	-
20.5.18.10		Installation for above only	each	37	R	-
20.5.18.11		Supply & delivery of 37W with 175 lm/W nominal efficacy or higher (Beka LED Post top Retrofit)	each	1	Rate Only	
20.5.18.12		Installation for above only	each	1	Rate Only	
20.5.18.13		Supply & delivery of 37W with 175 lm/W nominal efficacy or higher (Beka LED Post top unit)	each	1	Rate Only	
20.5.18.14		Installation for above only	each	1	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village Jamestown

Schedule 20.5: Bill of Quantities

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.19		Kiosks				
20.5.19.1		Supply and delivery of 18 way 3CR12 Vandal Proof Pole Mounted Kiosk, fully and completely populated as per Stellenbosch Municipality Specification	Item	13	R	-
20.5.19.2		Installation with concrete plinth for above only	Item	13	R	-
20.5.19.3		Supply and delivery of 18 way 3CR12 Vandal Proof Pole Mounted Kiosk, fully and completely populated as per Stellenbosch Municipality Specification	Item	2	R	-
20.5.19.4		Installation with supplied and installed pole for above only	Item	2	R	-
20.5.19.5		Supply and delivery of 18 way 3CR12 Vandal Proof Pole Mounted Kiosk, fully and completely populated as per Stellenbosch Municipality Specification	Item	1	Rate only	
20.5.19.6		Installation with supplied and installed pole for above only	Item	1	Rate only	
20.5.19.7		Supply and delivery of Day/Night Switch	Item	1	Rate only	
20.5.19.8		Installation of Day/Night Switch	Item	1	Rate only	
20.5.20		Old Equipment / Materials Removal				
20.5.20.1		Overhead Cable Removal	m	10.0	Rate Only	
20.5.20.2		Underground cable Removal	m	10.0	Rate Only	
20.5.20.3		Delivery to Municipal Store of above only	each	1.0	Rate Only	
20.5.20.4		Removal of old pole, luminaire, spigot and bracket	each	20.0	Rate Only	
20.5.20.5		Delivery to Stellenbosch Municipal Store for above only	each	20.0	Rate Only	
20.5.20.6		Removal of old pole, luminaire, spigot and bracket	each	1.0	Rate Only	
20.5.20.7		Delivery to Stellenbosch Municipal Store for above only	each	1.0	Rate Only	
20.5.20.8		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client: Disposal certificates, Record including origin (site & street name) luminaire type, wattage & quantities	per 25	1.0	R	-
20.5.20.9		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client: Disposal certificates, Record including origin (site & street name) luminaire type, wattage & quantities	per 25	1.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village Jamestown

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
						R -
20.5.21		Excavations: Excavate 0.7m deep x 0.6m wide, backfill and compact for cables				
20.5.21.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	496	R	-
20.5.21.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	247	R	-
20.5.21.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	247	R	-
20.5.21.4		Import, install and compaction of bedding materials to/on site	m ³	496	R	-
20.5.21.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	496	R	-
20.5.21.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	990	R	-
20.5.20.6		Remedial/filling and compaction of cable trenches to	m ³	682.0	R	-
20.5.22		Excavate 2m deep x 1m wide, backfill and compact for poles (Option 1 of 2)				
20.5.22.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	82	R	-
20.5.22.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	41	R	-
20.5.22.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	41	R	-
20.5.22.4		Import, install and compaction of bedding materials to/on site	m ³	82	R	-
20.5.22.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	82	R	-
20.5.22.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	164	R	-
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village Jamestown

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
						R -
20.5.23		Drilling (Alternative option to excavation for poles-Option 2 of 2)				
20.5.23.1		"Drilling of single pole hole to 1.2m depth in "soft" soil	each	3.0	R	-
20.5.23.2		"Drilling of single pole hole to 1.2m depth in "intermediate" soil	each	3.0	R	-
20.5.23.3		"Drilling of single pole hole to 1.2m depth in "hard" soil	each	4.0	R	-
20.5.23.4		"Drilling of single pole hole to 1.5m depth in "soft" soil	each	12.0	R	-
20.5.23.5		"Drilling of single pole hole to 1.5m depth in "intermediate" soil	each	12.0	R	-
20.5.23.6		"Drilling of single pole hole to 1.5m depth in "hard" soil	each	36.0	R	-
20.5.23.7		"Drilling of single pole hole to 2.0m depth in "soft" soil	each	6.0	R	-
20.5.23.8		"Drilling of single pole hole to 2.0m depth in "intermediate" soil	each	6.0	R	-
20.5.23.9		"Drilling of single pole hole to 2.0m depth in "hard" soil	each	11.0	R	-
20.5.24		Scanning				
20.5.24.1		Scanning for existing services before digging and/or boring, and/or drilling	m ²	2 180.0	R	-
20.5.25		Auxiliary installation requirements: Directional boring: (Note that these items will be subject to coordination with, and approval by the engineering representative, and the right of the engineering representative is reserved to either include or exclude the following items as and when required throughout the duration of the project)				
20.5.25.1		0m to less than 5m directional boring in length	ea	15	R	-
20.5.25.2		5m to 7m directional boring in length	ea	10	R	-
20.5.25.3		Greater than 7m and up to 10m directional boring in length	ea	40	R	-
20.5.25.4		Boring rig setup at specific drilling site location(s)	ea	33	R	-
20.5.25.5		0m to less than 5m directional boring in length	ea	1	Rate only	
20.5.25.6		5m to 7m directional boring in length	ea	1	Rate only	
20.5.25.7		Greater than 7m and up to 10m directional boring in length	ea	1	Rate only	
20.5.25.8		Greater than 10m and up to 15m directional boring in length	ea	1	Rate only	
20.5.25.9		Greater than 15m and up to 20m directional boring in length	ea	1	Rate only	
20.5.25.10		Greater than 20m and up to 30m directional boring in length	ea	1	Rate only	
20.5.25.11		Boring rig setup at specific drilling site location(s)	ea	1	Rate only	
Total Carried Forward To Summary						R -



Stellenbosch Municipality Streetlights: Village Languedoc

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
STREETLIGHTS VILLAGE LANQUEDOC						
20.5.2		2.5mm² x 3-core thermal uv resistant silicone cable				
20.5.2.1		Terminations for 2.5mm ² silicone cable (Including supply all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	m	1 111.0	R	-
20.5.2.2		Installation for above only	m	1 111.0	R	-
20.5.2.3		Terminations for 2.5mm ² silicone cable (Including supply all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	480.0	R	-
20.5.2.4		Installation for above only	each	480.0	R	-
20.5.2.5		Terminations for 2.5mm ² silicone cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	m	10.0	Rate Only	
20.5.2.6		Installation for above only	each	2.0	Rate Only	
20.5.3		25mm² x 4-core Alu ABC LV cable				
20.5.3.1		Supply and delivery only	m	5 292.0	R	-
20.5.3.2		Installation for above only	m	5 292.0	R	-
20.5.3.3		Terminations for 25mm ² Alu ABC cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	302.0	R	-
20.5.3.4		Supply and delivery only	m	40.0	Rate Only	
20.5.3.5		Installation for above only	m	40.0	Rate Only	
20.5.3.6		Terminations for 25mm ² Alu ABC cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0	Rate Only	
20.5.4		25mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.4.1		Supply and delivery only	m	1 258.0	R	-
20.5.4.2		Installation for above only	m	1 258.0	R	-
20.5.4.3		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	72.0	R	-
20.5.4.4		Supply and delivery only	m	40.0	Rate Only	
20.5.4.5		Installation for above only	m	40.0	Rate Only	
20.5.4.6		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village Languedoc

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.5		35mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.5.1		Supply and delivery only	m	50.0		Rate Only
20.5.5.2		Installation for above only	m	50.0		Rate Only
20.5.5.3		Terminations for 35mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.6		50mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.6.1		Supply and delivery only	m	50.0		Rate Only
20.5.6.2		Installation for above only	m	50.0		Rate Only
20.5.6.3		Terminations for 50mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.7		70mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.7.1		Supply and delivery only	m	50.0		Rate Only
20.5.7.2		Installation for above only	m	50.0		Rate Only
20.5.7.3		Terminations for 70mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.8		Wooden Streetlight Poles 9m				
20.5.8.1		Supply and delivery of pole	each	220.0		R -
20.5.8.2		Installation for above only	each	220.0		R -
20.5.8.3		Supply and delivery of pole	each	1.0		Rate Only
20.5.8.4		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village Lanquedoc

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.9		Anti Vandal System Implementations				
		Concrete Pole Support Anti Vandalism of Cables on metal, concrete and fibre glass poles				
20.5.9.1		Supply and delivery of concrete structure	each	9.0	R	-
20.5.9.2		Installation for above only	each	9.0	R	-
20.5.9.3		Supply and delivery of concrete structure	each	1.0	Rate Only	
20.5.9.4		Installation for above only	each	1.0	Rate Only	
20.5.10		Galvanised 2.4m Steel Pipe Anti Vandalism of				
20.5.10.1		Supply and delivery of pipe	each	220.0	R	-
20.5.10.2		Installation for above only	each	220.0	R	-
20.5.10.3		Supply and delivery of pipe	each	1.0	Rate Only	
20.5.10.4		Installation for above only	each	1.0	Rate Only	
20.5.11		Concrete Streetlight Poles 5.7m				
20.5.11.1		Supply and delivery of pole	each	1.0	Rate Only	
20.5.11.2		Installation for above only	each	1.0	Rate Only	
20.5.12		Galvanised Steel Streetlight Poles 9m				
20.5.12.1		Supply and delivery of pole	each	3.0	R	-
20.5.12.2		Installation for above only	each	3.0	R	-
20.5.12.3		Supply and delivery of pole	each	1.0	Rate Only	
20.5.12.4		Installation for above only	each	1.0	Rate Only	
20.5.13		Galvanised Steel Streetlight Poles 11m				
20.5.13.1		Supply and delivery of pole	each	1.0	R	-
20.5.13.2		Installation for above only	each	1.0	R	-
20.5.13.3		Supply and delivery of pole	each	1.0	Rate Only	
20.5.13.4		Installation for above only	each	1.0	Rate Only	
20.5.14		Galvanised Steel Outreach Arms Straight 1m 0° for Streetlight Poles				
20.5.14.1		Supply and delivery of outreach arm	each	1.0	R	-
20.5.14.2		Installation for above only	each	1.0	R	-
20.5.14.3		Supply and delivery of outreach arm	each	1.0	Rate Only	
20.5.14.4		Installation for above only	each	1.0	Rate Only	
20.5.15		Galvanised Steel Outreach Arms Curved 1m 0° for Streetlight Poles				
20.5.15.1		Supply and delivery of outreach arm	each	20.0	R	-
20.5.15.2		Installation for above only	each	20.0	R	-
20.5.15.3		Supply and delivery of outreach arm	each	1.0	Rate Only	
20.5.15.4		Installation for above only	each	1.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village Lanquedoc

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.16		Galvanised Steel Outreach Arms Straight 300mm for Streetlight Poles				
20.5.16.1		Supply and delivery of outreach arm	each	344.0	R	-
20.5.16.2		Installation for above only	each	344.0	R	-
20.5.16.3		Supply and delivery of outreach arm	each	1.0	Rate Only	
20.5.16.4		Installation for above only	each	1.0	Rate Only	
20.5.17		Spigots				
20.5.17.1		Supply and delivery of 42mm Spigot	each	234.0	R	-
20.5.17.2		Installation for above only	each	234.0	R	-
20.5.17.3		Supply and delivery of 42mm Spigot	each	1.0	Rate Only	
20.5.17.4		Installation for above only	each	1.0	Rate Only	
20.5.18		LED Luminaires				
20.5.18.1		Supply and delivery of 36W with 180 lm/W nominal efficacy or higher (Beka or similar approved)	each	211	R	-
20.5.18.2		Installation for above only	each	211	R	-
20.5.18.3		Supply and delivery of 36W with 180 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.18.4		Installation for above only	each	1	Rate Only	
20.5.18.5		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.18.6		Installation for above only	each	1	Rate Only	
20.5.18.7		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.18.8		Installation for above only	each	1	Rate Only	
20.5.18.9		Supply & delivery of 37W with 175 lm/W nominal efficacy or higher (Beka LED Post top Retrofit)	each	1	Rate Only	
20.5.18.10		Installation for above only	each	1	Rate Only	
20.5.18.11		Supply & delivery of 37W with 175 lm/W nominal efficacy or higher (Beka LED Post top Retrofit)	each	1	Rate Only	
20.5.18.12		Installation for above only	each	1	Rate Only	
20.5.18.13		Supply & delivery of 37W with 175 lm/W nominal efficacy or higher (Beka LED Post top unit)	each	1	Rate Only	
20.5.18.14		Installation for above only	each	1	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village Lanquedoc

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.19		Kiosks				
20.5.19.1		Supply and delivery of 18 way 3CR12 Vandal Proof Pole Mounted Kiosk, fully and completely populated as per Stellenbosch Municipality Specification	Item	1	R	-
20.5.19.2		Installation with concrete plinth for above only	Item	1	R	-
20.5.19.3		Supply and delivery of 18 way 3CR12 Vandal Proof Pole Mounted Kiosk, fully and completely populated as per Stellenbosch Municipality Specification	Item	7	R	-
20.5.19.4		Installation with supplied and installed pole for above only	Item	7	R	-
20.5.19.5		Supply and delivery of 18 way 3CR12 Vandal Proof Pole Mounted Kiosk, fully and completely populated as per Stellenbosch Municipality Specification	Item	1	Rate only	
20.5.19.6		Installation with supplied and installed pole for above only	Item	1	Rate only	
20.5.19.7		Supply and delivery of Day/Night Switch	Item	1	Rate only	
20.5.19.8		Installation of Day/Night Switch	Item	1	Rate only	
20.5.20		Old Equipment / Materials Removal				
20.5.20.1		Overhead Cable Removal	m	10.0	Rate Only	
20.5.20.2		Underground cable Removal	m	10.0	Rate Only	
20.5.20.3		Delivery to Municipal Store of above only	each	1.0	Rate Only	
20.5.20.4		Removal of old pole, luminaire, spigot and bracket	each	20.0	Rate Only	
20.5.20.5		Delivery to Stellenbosch Municipal Store for above only	each	20.0	Rate Only	
20.5.20.6		Removal of old pole, luminaire, spigot and bracket	each	1.0	Rate Only	
20.5.20.7		Delivery to Stellenbosch Municipal Store for above only	each	1.0	Rate Only	
20.5.20.8		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client: Disposal certificates, Record including origin (site & street name) luminaire type, wattage & quantities	per 25	1.0	R	-
20.5.20.9		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client: Disposal certificates, Record including origin (site & street name) luminaire type, wattage & quantities	per 25	1.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village Languedoc

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
						R -
20.5.21		Excavations: Excavate 0.7m deep x 0.6m wide, backfill and compact for cables				
20.5.21.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	213	R	-
20.5.21.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	107	R	-
20.5.21.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	107	R	-
20.5.21.4		Import, install and compaction of bedding materials to/on site	m ³	213	R	-
20.5.21.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	213	R	-
20.5.21.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	426	R	-
20.5.22		Excavate 2m deep x 1m wide, backfill and compact for poles (Option 1 of 2)				
20.5.22.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	168	R	-
20.5.22.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	84	R	-
20.5.22.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	84	R	-
20.5.22.4		Import, install and compaction of bedding materials to/on site	m ³	168	R	-
20.5.22.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	168	R	-
20.5.22.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	336	R	-
Total Carried Forward To Next Page						R -



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: Village Languedoc

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
						R -
20.5.23		Drilling (Alternative option to excavation for poles-Option 2 of 2)				
20.5.23.1		"Drilling of single pole hole to 1.2m depth in "soft" soil	each	55.0	R	-
20.5.23.2		"Drilling of single pole hole to 1.2m depth in "intermediate" soil	each	55.0	R	-
20.5.23.3		"Drilling of single pole hole to 1.2m depth in "hard" soil	each	113.0	R	-
20.5.23.4		"Drilling of single pole hole to 1.5m depth in "soft" soil	each	1.0	Rate Only	
20.5.23.5		"Drilling of single pole hole to 1.5m depth in "intermediate" soil	each	1.0	Rate Only	
20.5.23.6		"Drilling of single pole hole to 1.5m depth in "hard" soil	each	1.0	Rate Only	
20.5.23.7		"Drilling of single pole hole to 2.0m depth in "soft" soil	each	1.0	Rate Only	
20.5.23.8		"Drilling of single pole hole to 2.0m depth in "intermediate" soil	each	1.0	Rate Only	
20.5.23.9		"Drilling of single pole hole to 2.0m depth in "hard" soil	each	1.0	Rate Only	
20.5.24		Scanning				
20.5.24.1		Scanning for existing services before digging and/or boring, and/or drilling	m ²	1 480.0	R	-
20.5.25		Auxiliary installation requirements: Directional boring: (Note that these items will be subject to coordination with, and approval by the engineering representative, and the right of the engineering representative is reserved to either include or exclude the following items as and when required throughout the duration of the project)				
20.5.25.1		0m to less than 5m directional boring in length	ea	67	R	-
20.5.25.2		5m to 7m directional boring in length	ea	12	R	-
20.5.25.3		Greater than 7m and up to 10m directional in boring	ea	3	R	-
20.5.25.4		Boring rig setup at specific drilling site location(s)	ea	13	R	-
20.5.25.5		0m to less than 5m directional boring in length	ea	1	Rate only	
20.5.25.6		5m to 7m directional boring in length	ea	1	Rate only	
20.5.25.7		Greater than 7m and up to 10m directional boring in	ea	1	Rate only	
20.5.25.8		Greater than 10m and up to 15m directional boring in	ea	1	Rate only	
20.5.25.9		Greater than 15m and up to 20m directional boring in	ea	1	Rate only	
20.5.25.10		Greater than 20m and up to 30m directional boring in	ea	1	Rate only	
20.5.25.11		Boring rig setup at specific drilling site location(s)	ea	1	Rate only	
Total Carried Forward To Summary						R -



Stellenbosch Municipality Streetlights: Village Kylemore

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
STREETLIGHTS VILLAGE KYLEMORE						
20.5.2		2.5mm² x 3-core thermal uv resistant silicone cable				
20.5.2.1		Terminations for 2.5mm ² silicone cable (Including supply all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	m	1 579.0	R	-
20.5.2.2		Installation for above only	m	1 579.0	R	-
20.5.2.3		Terminations for 2.5mm ² silicone cable (Including supply all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	540.0	R	-
20.5.2.4		Installation for above only	each	540.0	R	-
20.5.2.5		Terminations for 2.5mm ² silicone cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	m	10.0	Rate Only	
20.5.2.6		Installation for above only	each	2.0	Rate Only	
20.5.3		25mm² x 4-core Alu ABC LV cable				
20.5.3.1		Supply and delivery only	m	1 275.0	R	-
20.5.3.2		Installation for above only	m	1 275.0	R	-
20.5.3.3		Terminations for 25mm ² Alu ABC cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	72.0	R	-
20.5.3.4		Supply and delivery only	m	40.0	Rate Only	
20.5.3.5		Installation for above only	m	40.0	Rate Only	
20.5.3.6		Terminations for 25mm ² Alu ABC cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	2.0	Rate Only	
20.5.4		25mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.4.1		Supply and delivery only	m	5 452.0	R	-
20.5.4.2		Installation for above only	m	5 452.0	R	-
20.5.4.3		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	280.0	R	-
20.5.4.4		Supply and delivery only	m	40.0	Rate Only	
20.5.4.5		Installation for above only	m	40.0	Rate Only	
20.5.4.6		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	2.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village Kylemore

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.5		35mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.5.1		Supply and delivery only	m	50.0		Rate Only
20.5.5.2		Installation for above only	m	50.0		Rate Only
20.5.5.3		Terminations for 35mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.6		50mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.6.1		Supply and delivery only	m	50.0		Rate Only
20.5.6.2		Installation for above only	m	50.0		Rate Only
20.5.6.3		Terminations for 50mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.7		70mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.7.1		Supply and delivery only	m	50.0		Rate Only
20.5.7.2		Installation for above only	m	50.0		Rate Only
20.5.7.3		Terminations for 70mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.8		Wooden Streetlight Poles 9m				
20.5.8.1		Supply and delivery of pole	each	237.0		R -
20.5.8.2		Installation for above only	each	237.0		R -
20.5.8.3		Supply and delivery of pole	each	1.0		Rate Only
20.5.8.4		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village Kylemore

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.9		Anti Vandal System Implementations				
		Concrete Pole Support Anti Vandalism of Cables on metal, concrete and fibre glass poles				
20.5.9.1		Supply and delivery of concrete structure	each	49.0	R	-
20.5.9.2		Installation for above only	each	49.0	R	-
20.5.9.3		Supply and delivery of concrete structure	each	1.0	Rate Only	
20.5.9.4		Installation for above only	each	1.0	Rate Only	
20.5.10		Galvanised 2.4m Steel Pipe Anti Vandalism of				
20.5.10.1		Supply and delivery of pipe	each	237.0	R	-
20.5.10.2		Installation for above only	each	237.0	R	-
20.5.10.3		Supply and delivery of pipe	each	1.0	Rate Only	
20.5.10.4		Installation for above only	each	1.0	Rate Only	
20.5.11		Concrete Streetlight Poles 5.7m				
20.5.11.1		Supply and delivery of pole	each	1.0	Rate Only	
20.5.11.2		Installation for above only	each	1.0	Rate Only	
20.5.12		Galvanised Steel Streetlight Poles 9m				
20.5.12.1		Supply and delivery of pole	each	1.0	Rate Only	
20.5.12.2		Installation for above only	each	1.0	Rate Only	
20.5.13		Galvanised Steel Streetlight Poles 11m				
20.5.13.1		Supply and delivery of pole	each	2.0	R	-
20.5.13.2		Installation for above only	each	2.0	R	-
20.5.13.3		Supply and delivery of pole	each	1.0	Rate Only	
20.5.13.4		Installation for above only	each	1.0	Rate Only	
20.5.14		Galvanised Steel Outreach Arms Straight 1m 0° for Streetlight Poles				
20.5.14.1		Supply and delivery of outreach arm	each	236.0	R	-
20.5.14.2		Installation for above only	each	236.0	R	-
20.5.14.3		Supply and delivery of outreach arm	each	1.0	Rate Only	
20.5.14.4		Installation for above only	each	1.0	Rate Only	
20.5.15		Galvanised Steel Outreach Arms Curved 1m 0° for Streetlight Poles				
20.5.15.1		Supply and delivery of outreach arm	each	1.0	Rate Only	
20.5.15.2		Installation for above only	each	1.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village Kylemore

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.16		Galvanised Steel Outreach Arms Straight 300mm for Streetlight Poles				
20.5.16.1		Supply and delivery of outreach arm	each	1.0	Rate Only	
20.5.16.2		Installation for above only	each	1.0	Rate Only	
20.5.17		Spigots				
20.5.17.1		Supply and delivery of 42mm Spigot	each	236.0	R	-
20.5.17.2		Installation for above only	each	236.0	R	-
20.5.17.3		Supply and delivery of 42mm Spigot	each	1.0	Rate Only	
20.5.17.4		Installation for above only	each	1.0	Rate Only	
20.5.18		LED Luminaires				
20.5.18.1		Supply and delivery of 36W with 180 lm/W nominal efficacy or higher (Beka or similar approved)	each	230	R	-
20.5.18.2		Installation for above only	each	230	R	-
20.5.18.3		Supply and delivery of 36W with 180 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.18.4		Installation for above only	each	1	Rate Only	
20.5.18.5		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	31	R	-
20.5.18.6		Installation for above only	each	31	R	-
20.5.18.7		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.18.8		Installation for above only	each	1	Rate Only	
20.5.18.9		Supply & delivery of 37W with 175 lm/W nominal efficacy or higher (Beka LED Post top Retrofit)	each	1	Rate Only	
20.5.18.10		Installation for above only	each	1	Rate Only	
20.5.18.11		Supply & delivery of 37W with 175 lm/W nominal efficacy or higher (Beka LED Post top unit)	each	1	Rate Only	
20.5.18.12		Installation for above only	each	1	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village Kylemore

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.19		Kiosks				
20.5.19.1		Supply and delivery of 18 way 3CR12 Vandal Proof Pole Mounted Kiosk, fully and completely populated as per Stellenbosch Municipality Specification	Item	4	R	-
20.5.19.2		Installation with concrete plinth for above only	Item	4	R	-
20.5.19.3		Supply and delivery of 18 way 3CR12 Vandal Proof Pole Mounted Kiosk, fully and completely populated as per Stellenbosch Municipality Specification	Item	5	R	-
20.5.19.4		Installation with supplied and installed pole for above only	Item	5	R	-
20.5.19.5		Supply and delivery of 18 way 3CR12 Vandal Proof Pole Mounted Kiosk, fully and completely populated as per Stellenbosch Municipality Specification	Item	1	Rate only	
20.5.19.6		Installation with supplied and installed pole for above only	Item	1	Rate only	
20.5.19.7		Supply and delivery of Day/Night Switch	Item	1	Rate only	
20.5.19.8		Installation of Day/Night Switch	Item	1	Rate only	
20.5.20		Old Equipment / Materials Removal				
20.5.20.1		Overhead Cable Removal	m	10.0	Rate Only	
20.5.20.2		Underground cable Removal	m	10.0	Rate Only	
20.5.20.3		Delivery to Municipal Store of above only	each	1.0	Rate Only	
20.5.20.4		Removal of old pole, luminaire, spigot and bracket	each	20.0	Rate Only	
20.5.20.5		Delivery to Stellenbosch Municipal Store for above only	each	20.0	Rate Only	
20.5.20.6		Removal of old pole, luminaire, spigot and bracket	each	1.0	Rate Only	
20.5.20.7		Delivery to Stellenbosch Municipal Store for above only	each	1.0	Rate Only	
20.5.20.8		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client: Disposal certificates, Record including origin (site & street name) luminaire type, wattage & quantities	per 25	1.0	R	-
20.5.20.9		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client: Disposal certificates, Record including origin (site & street name) luminaire type, wattage & quantities	per 25	1.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village Kylemore

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
						R -
20.5.21		Excavations: Excavate 0.7m deep x 0.6m wide, backfill and compact for cables				
20.5.21.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	1385	R	-
20.5.21.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	693	R	-
20.5.21.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	692	R	-
20.5.21.4		Import, install and compaction of bedding materials to/on site	m ³	346	R	-
20.5.21.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	346	R	-
20.5.21.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	2770	R	-
20.5.22		Excavate 2m deep x 1m wide, backfill and compact for poles (Option 1 of 2)				
20.5.22.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	180	R	-
20.5.22.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	90	R	-
20.5.22.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	90	R	-
20.5.22.4		Import, install and compaction of bedding materials to/on site	m ³	180	R	-
20.5.22.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	168	R	-
20.5.22.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	360	R	-
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village Kylemore

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
						R -
20.5.23		Drilling (Alternative option to excavation for poles-Option 2 of 2)				
20.5.23.1		"Drilling of single pole hole to 1.2m depth in "soft" soil	each	1.0	Rate Only	
20.5.23.2		"Drilling of single pole hole to 1.2m depth in "intermediate" soil	each	1.0	Rate Only	
20.5.23.3		"Drilling of single pole hole to 1.2m depth in "hard" soil	each	1.0	Rate Only	
20.5.23.4		"Drilling of single pole hole to 1.5m depth in "soft" soil	each	55.0	R	-
20.5.23.5		"Drilling of single pole hole to 1.5m depth in "intermediate" soil	each	55.0	R	-
20.5.23.6		"Drilling of single pole hole to 1.5m depth in "hard" soil	each	127.0	R	-
20.5.23.7		"Drilling of single pole hole to 2.0m depth in "soft" soil	each	1.0	Rate Only	
20.5.23.8		"Drilling of single pole hole to 2.0m depth in "intermediate" soil	each	1.0	Rate Only	
20.5.23.9		"Drilling of single pole hole to 2.0m depth in "hard" soil	each	1.0	Rate Only	
20.5.24		Scanning				
20.5.24.1		Scanning for existing services before digging and/or boring, and/or drilling	m ²	7 843.0	R	-
20.5.25		Auxiliary installation requirements: Directional boring: (Note that these items will be subject to coordination with, and approval by the engineering representative, and the right of the engineering representative is reserved to either include or exclude the following items as and when required throughout the duration of the project)				
20.5.25.1		0m to less than 5m directional boring in length	ea	12	R	-
20.5.25.2		5m to 7m directional boring in length	ea	160	R	-
20.5.25.3		Greater than 7m and up to 10m directional in boring	ea	25	R	-
20.5.25.4		Boring rig setup at specific drilling site location(s)	ea	83	R	-
20.5.25.5		0m to less than 5m directional boring in length	ea	1	Rate only	
20.5.25.6		5m to 7m directional boring in length	ea	1	Rate only	
20.5.25.7		Greater than 7m and up to 10m directional boring in	ea	1	Rate only	
20.5.25.8		Greater than 10m and up to 15m directional boring in	ea	1	Rate only	
20.5.25.9		Greater than 15m and up to 20m directional boring in	ea	1	Rate only	
20.5.25.10		Greater than 20m and up to 30m directional boring in	ea	1	Rate only	
20.5.25.11		Boring rig setup at specific drilling site location(s)	ea	1	Rate only	
Total Carried Forward To Summary						R -



Stellenbosch Municipality Streetlights: Village La Motte

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
STREETLIGHTS VILLAGE LA MOTTE						
20.5.2		2.5mm² x 3-core thermal uv resistant silicone cable				
20.5.2.1		Terminations for 2,5mm ² silicone cable (Including supply all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	m	376.0	R	-
20.5.2.2		Installation for above only	m	376.0	R	-
20.5.2.3		Terminations for 2,5mm ² silicone cable (Including supply all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	94.0	R	-
20.5.2.4		Installation for above only	each	94.0	R	-
20.5.2.5		Terminations for 2,5mm ² silicone cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	m	10.0	Rate Only	
20.5.2.6		Installation for above only	each	2.0	Rate Only	
20.5.3		25mm² x 4-core Alu ABC LV cable				
20.5.3.1		Supply and delivery only	m	25.0	Rate Only	
20.5.3.2		Installation for above only	m	25.0	Rate Only	
20.5.3.3		Terminations for 25mm ² Alu ABC cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	2.0	Rate Only	
20.5.3.4		Supply and delivery only	m	40.0	Rate Only	
20.5.3.5		Installation for above only	m	40.0	Rate Only	
20.5.3.6		Terminations for 25mm ² Alu ABC cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	2.0	Rate Only	
20.5.4		25mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.4.1		Supply and delivery only	m	3 124.0	R	-
20.5.4.2		Installation for above only	m	3 124.0	R	-
20.5.4.3		Terminations for 25mm ² cable (Including supply of all	each	142.0	R	-
20.5.4.4		Supply and delivery only	m	40.0	Rate Only	
20.5.4.5		Installation for above only	m	40.0	Rate Only	
20.5.4.6		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	2.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village La Motte

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.5		35mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.5.1		Supply and delivery only	m	50.0		Rate Only
20.5.5.2		Installation for above only	m	50.0		Rate Only
20.5.5.3		Terminations for 35mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.6		50mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.6.1		Supply and delivery only	m	50.0		Rate Only
20.5.6.2		Installation for above only	m	50.0		Rate Only
20.5.6.3		Terminations for 50mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.7		70mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.7.1		Supply and delivery only	m	50.0		Rate Only
20.5.7.2		Installation for above only	m	50.0		Rate Only
20.5.7.3		Terminations for 70mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.8		Wooden Streetlight Poles 9m				
20.5.8.1		Supply and delivery of pole	each	1.0		Rate Only
20.5.8.2		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY



Stellenbosch Municipality Streetlights: Village La Motte

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.9		Anti Vandal System Implementations				
		Concrete Pole Support Anti Vandalism of Cables on metal, concrete and fibre glass poles				
20.5.9.1		Supply and delivery of concrete structure	each	21.0	R	-
20.5.9.2		Installation for above only	each	21.0	R	-
20.5.9.3		Supply and delivery of concrete structure	each	1.0	Rate Only	
20.5.9.4		Installation for above only	each	1.0	Rate Only	
		Galvanised 2.4m Steel Pipe Anti Vandalism of				
20.5.9.5		Supply and delivery of pipe	each	7.0	R	-
20.5.9.6		Installation for above only	each	7.0	R	-
20.5.9.7		Supply and delivery of pipe	each	1.0	Rate Only	
20.5.9.8		Installation for above only	each	1.0	Rate Only	
20.5.10		Concrete Streetlight Poles 4.5m				
20.5.10.1		Supply and delivery of pole	each	1.0	Rate Only	
20.5.10.2		Installation for above only	each	1.0	Rate Only	
20.5.11		Concrete Streetlight Poles 9m				
20.5.11.1		Supply and delivery of pole	each	65.0	R	-
20.5.11.2		Installation for above only	each	65.0	R	-
20.5.12		Galvanised Steel Streetlight Poles 9m				
20.5.12.1		Supply and delivery of pole	each	1.0	Rate Only	
20.5.12.2		Installation for above only	each	1.0	Rate Only	
20.5.13		Galvanised Steel Streetlight Poles 11m				
20.5.13.1		Supply and delivery of pole	each	2.0	R	-
20.5.13.2		Installation for above only	each	2.0	R	-
20.5.13.3		Supply and delivery of pole	each	1.0	Rate Only	
20.5.13.4		Installation for above only	each	1.0	Rate Only	
20.5.14		Galvanised Steel Outreach Arms Straight 1m 0° for Streetlight Poles				
20.5.14.1		Supply and delivery of outreach arm	each	1.0	Rate Only	
20.5.14.2		Installation for above only	each	1.0	Rate Only	
20.5.15		Galvanised Steel Outreach Arms Curved 2m 0° for Streetlight Poles				
20.5.15.1		Supply and delivery of outreach arm	each	1.0	Rate Only	
20.5.15.2		Installation for above only	each	1.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village La Motte

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.16		Galvanised Steel Outreach Arms Straight 300mm for Streetlight Poles				
20.5.16.1		Supply and delivery of outreach arm	each	1.0		Rate Only
20.5.16.2		Installation for above only	each	1.0		Rate Only
20.5.17		Spigots				
20.5.17.1		Supply and delivery of 42mm Spigot	each	47.0		R -
20.5.17.2		Installation for above only	each	47.0		R -
20.5.17.3		Supply and delivery of 42mm Spigot	each	1.0		Rate Only
20.5.17.4		Installation for above only	each	1.0		Rate Only
20.5.18		LED Luminaires				
20.5.18.1		Supply and delivery of 36W with 180 lm/W nominal efficacy or higher (Beka or similar approved)	each	107		R -
20.5.18.2		Installation for above only	each	107		R -
20.5.18.3		Supply and delivery of 36W with 180 lm/W nominal efficacy or higher (Beka or similar approved)	each	1		Rate Only
20.5.18.4		Installation for above only	each	1		Rate Only
20.5.18.5		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	1		Rate Only
20.5.18.6		Installation for above only	each	1		Rate Only
20.5.18.7		Supply & delivery of 37W with 175 lm/W nominal efficacy or higher (Beka LED Post top Retrofit)	each	42		R -
20.5.18.8		Installation for above only	each	42		R -
20.5.18.9		Supply & delivery of 37W with 175 lm/W nominal efficacy or higher (Beka LED Post top Retrofit)	each	1		Rate Only
20.5.18.10		Installation for above only	each	1		Rate Only
20.5.18.11		Supply & delivery of 37W with 175 lm/W nominal efficacy or higher (Beka LED Post top unit)	each	28		R -
20.5.18.12		Installation for above only	each	28		R -
20.5.18.13		Supply & delivery of 37W with 175 lm/W nominal efficacy or higher (Beka LED Post top unit)	each	1		Rate Only
20.5.18.14		Installation for above only	each	1		Rate Only
Total Carried Forward To Next Page						R -



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: Village La Motte

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.19		Kiosks				
20.5.19.1		Supply and delivery of 18 way 3CR12 Vandal Proof Pole Mounted Kiosk, fully and completely populated as per Stellenbosch Municipality Specification	Item	12		R -
20.5.19.2		Installation with concrete plinth for above only	Item	12		R -
20.5.19.3		Supply and delivery of 18 way 3CR12 Vandal Proof Pole Mounted Kiosk, fully and completely populated as per Stellenbosch Municipality Specification	Item	1		R -
20.5.19.4		Installation with supplied and installed pole for above only	Item	1		R -
20.5.19.5		Supply and delivery of 18 way 3CR12 Vandal Proof Pole Mounted Kiosk, fully and completely populated as per Stellenbosch Municipality Specification	Item	1		Rate only
20.5.19.6		Installation with supplied and installed pole for above only	Item	1		Rate only
20.5.19.7		Supply and delivery of Day/Night Switch	Item	1		Rate only
20.5.19.8		Installation of Day/Night Switch	Item	1		Rate only
20.5.20		Old Equipment / Materials Removal				
20.5.20.1		Overhead Cable Removal	m	10.0		Rate Only
20.5.20.2		Underground cable Removal	m	10.0		Rate Only
20.5.20.3		Delivery to Municipal Store of above only	each	1.0		Rate Only
20.5.20.4		Removal of old pole, luminaire, spigot and bracket	each	20.0		Rate Only
20.5.20.5		Delivery to Stellenbosch Municipal Store for above only	each	20.0		Rate Only
20.5.20.6		Removal of old pole, luminaire, spigot and bracket	each	1.0		Rate Only
20.5.20.7		Delivery to Stellenbosch Municipal Store for above only	each	1.0		Rate Only
20.5.20.8		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client: Disposal certificates, Record including origin (site & street name) luminaire type, wattage & quantities	per 25	1.0		R -
20.5.20.9		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client: Disposal certificates, Record including origin (site & street name) luminaire type, wattage & quantities	per 25	1.0		Rate Only
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village La Motte

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
						R -
20.5.21		Excavations: Excavate 0.7m deep x 0.6m wide, backfill and compact for cables				
20.5.21.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	1562	R	-
20.5.21.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	781	R	-
20.5.21.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	781	R	-
20.5.21.4		Import, install and compaction of bedding materials to/on site	m ³	1562	R	-
20.5.21.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	1562	R	-
20.5.21.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	3124	R	-
20.5.22		Excavate 2m deep x 1m wide, backfill and compact for poles (Option 1 of 2)				
20.5.22.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	12	R	-
20.5.22.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	6	R	-
20.5.22.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	6	R	-
20.5.22.4		Import, install and compaction of bedding materials to/on site	m ³	12	R	-
20.5.22.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	12	R	-
20.5.22.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	24	R	-
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village La Motte

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
						R -
20.5.23		Drilling (Alternative option to excavation for poles-Option 2 of 2)				
20.5.23.1		"Drilling of single pole hole to 1.2m depth in "soft" soil	each	16.0	R	-
20.5.23.2		"Drilling of single pole hole to 1.2m depth in "intermediate" soil	each	8.0	R	-
20.5.23.3		"Drilling of single pole hole to 1.2m depth in "hard" soil	each	8.0	R	-
20.5.23.4		"Drilling of single pole hole to 1.5m depth in "soft" soil	each	1.0	Rate Only	
20.5.23.5		"Drilling of single pole hole to 1.5m depth in "intermediate" soil	each	1.0	Rate Only	
20.5.23.6		"Drilling of single pole hole to 1.5m depth in "hard" soil	each	1.0	Rate Only	
20.5.23.7		"Drilling of single pole hole to 2.0m depth in "soft" soil	each	1.0	Rate Only	
20.5.23.8		"Drilling of single pole hole to 2.0m depth in "intermediate" soil	each	1.0	Rate Only	
20.5.23.9		"Drilling of single pole hole to 2.0m depth in "hard" soil	each	1.0	Rate Only	
20.5.24		Scanning				
20.5.24.1		Scanning for existing services before digging and/or boring, and/or drilling	m ²	1 670.0	R	-
20.5.25		Auxiliary installation requirements: Directional boring: (Note that these items will be subject to coordination with, and approval by the engineering representative, and the right of the engineering representative is reserved to either include or exclude the following items as and when required throughout the duration of the project)				
20.5.25.1		0m to less than 5m directional boring in length	ea	1	Rate only	
20.5.25.2		5m to 7m directional boring in length	ea	1	Rate only	
20.5.25.3		Greater than 7m and up to 10m directional in boring	ea	1	Rate only	
20.5.25.4		Boring rig setup at specific drilling site location(s)	ea	1	Rate only	
20.5.25.5		0m to less than 5m directional boring in length	ea	1	Rate only	
20.5.25.6		5m to 7m directional boring in length	ea	1	Rate only	
20.5.25.7		Greater than 7m and up to 10m directional boring in	ea	1	Rate only	
20.5.25.8		Greater than 10m and up to 15m directional boring in	ea	1	Rate only	
20.5.25.9		Greater than 15m and up to 20m directional boring in	ea	1	Rate only	
20.5.25.10		Greater than 20m and up to 30m directional boring in	ea	1	Rate only	
20.5.25.11		Boring rig setup at specific drilling site location(s)	ea	1	Rate only	
Total Carried Forward To Summary						R -



Stellenbosch Municipality Streetlights: Village Klapmuts

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
STREETLIGHTS VILLAGE KLAPMUTS						
20.5.2		Cable				
20.5.2.1		2.5mm ² x 3-core thermal uv resistant silicone cable	m	750.0	R	-
20.5.2.2		Installation for above only	m	750.0	R	-
20.5.2.3		Terminations for 2,5mm ² silicone cable (Including supply all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	656.0	R	-
20.5.2.4		Installation for above only	each	656.0	R	-
20.5.2.5		Terminations for 2,5mm ² silicone cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	10.0	Rate Only	
20.5.2.6		Installation for above only	each	2.0	Rate Only	
20.5.3		25mm² x 4-core Alu ABC LV cable				
20.5.3.1		Supply and delivery only	m	2 933.0	R	-
20.5.3.2		Installation for above only	m	2 933.0	R	-
20.5.3.3		Terminations for 25mm ² Alu ABC cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	224.0	R	-
20.5.3.4		Supply and delivery only	m	40.0	Rate Only	
20.5.3.5		Installation for above only	m	40.0	Rate Only	
20.5.3.6		Terminations for 25mm ² Alu ABC cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	2.0	Rate Only	
20.5.4		25mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.4.1		Supply and delivery only	m	7 910.0	R	-
20.5.4.2		Installation for above only	m	7 910.0	R	-
20.5.4.3		Terminations for 25mm ² cable (Including supply of all	each	452.0	R	-
20.5.4.4		Supply and delivery only	m	40.0	Rate Only	
20.5.4.5		Installation for above only	m	40.0	Rate Only	
20.5.4.6		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	2.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village Klapmuts

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.5		35mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.5.1		Supply and delivery only	m	50.0		Rate Only
20.5.5.2		Installation for above only	m	50.0		Rate Only
20.5.5.3		Terminations for 35mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.6		50mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.6.1		Supply and delivery only	m	50.0		Rate Only
20.5.6.2		Installation for above only	m	50.0		Rate Only
20.5.6.3		Terminations for 50mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.7		70mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.7.1		Supply and delivery only	m	50.0		Rate Only
20.5.7.2		Installation for above only	m	50.0		Rate Only
20.5.7.3		Terminations for 70mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.8		Wooden Streetlight Poles 9m				
20.5.8.1		Supply and delivery of pole	each	325.0		R -
20.5.8.2		Installation for above only	each	325.0		R -
20.5.8.3		Supply and delivery of pole	each	1.0		Rate Only
20.5.8.4		Installation for above only	each	1.0		Rate Only
20.5.9		Anti Vandal System Implementations				
		Concrete Pole Support Anti Vandalism of Cables on metal, concrete and fibre glass poles				
20.5.9.1		Supply and delivery of concrete structure	each	48.0		R -
20.5.9.2		Installation for above only	each	48.0		R -
20.5.9.3		Supply and delivery of concrete structure	each	1.0		Rate Only
20.5.9.4		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village Klappmuts

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
		Galvanised 2.4m Steel Pipe Anti Vandalism of Cables on Wooden Poles				
20.5.9.5		Supply and delivery of pipe	each	325.0	R	-
20.5.9.6		Installation for above only	each	325.0	R	-
20.5.9.7		Supply and delivery of pipe	each	1.0	Rate Only	
20.5.9.8		Installation for above only	each	1.0	Rate Only	
20.5.10		Concrete Streetlight Poles 4.5m				
20.5.10.1		Supply and delivery of pole	each	1.0	Rate Only	
20.5.10.2		Installation for above only	each	1.0	Rate Only	
20.5.11		Concrete Streetlight Poles 5.7m				
20.5.11.1		Supply and delivery of pole	each	1.0	Rate Only	
20.5.11.2		Installation for above only	each	1.0	Rate Only	
20.5.12		Galvanised Steel Streetlight Poles 9m				
20.5.12.1		Supply and delivery of pole	each	1.0	Rate Only	
20.5.12.2		Installation for above only	each	1.0	Rate Only	
20.5.13		Galvanised Steel Streetlight Poles 11m				
20.5.13.1		Supply and delivery of pole	each	2.0	R	-
20.5.13.2		Installation for above only	each	2.0	R	-
20.5.13.3		Supply and delivery of pole	each	1.0	Rate Only	
20.5.13.4		Installation for above only	each	1.0	Rate Only	
20.5.14		Galvanised Steel Outreach Arms Straight 1m 0° for Streetlight Poles				
20.5.14.1		Supply and delivery of outreach arm	each	103.0	R	-
20.5.14.2		Installation for above only	each	103.0	R	-
20.5.14.3		Supply and delivery of outreach arm	each	1.0	Rate Only	
20.5.14.4		Installation for above only	each	1.0	Rate Only	
20.5.15		Galvanised Steel Outreach Arms Curved 1m 0° for Streetlight Poles				
20.5.15.1		Supply and delivery of outreach arm	each	1.0	Rate Only	
20.5.15.2		Installation for above only	each	1.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village Klappmuts

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.16		Galvanised Steel Outreach Arms Straight 300mm for Streetlight Poles				
20.5.16.1		Supply and delivery of outreach arm	each	232.0		Rate Only
20.5.16.2		Installation for above only	each	232.0		Rate Only
20.5.17		Spigots				
20.5.17.1		Supply and delivery of 42mm Spigot	each	335.0		R -
20.5.17.2		Installation for above only	each	335.0		R -
20.5.17.3		Supply and delivery of 42mm Spigot	each	1.0		Rate Only
20.5.17.4		Installation for above only	each	1.0		Rate Only
20.5.18		LED Luminaires				
20.5.18.1		Supply and delivery of 36W with 180 lm/W nominal efficacy or higher (Beka or similar approved)	each	542		R -
20.5.18.2		Installation for above only	each	542		R -
20.5.18.3		Supply and delivery of 36W with 180 lm/W nominal efficacy or higher (Beka or similar approved)	each	1		Rate Only
20.5.18.4		Installation for above only	each	1		Rate Only
20.5.18.5		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	20		R -
20.5.18.6		Installation for above only	each	20		R -
20.5.18.7		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar in quality and performance approved)	each	1		Rate Only
20.5.18.8		Installation for above only	each	1		Rate Only
20.5.18.9		Supply and delivery of Hi Mast Pole, Luminaires, Brackets (approx 20m height-Mandela City) Hexagon 6 Luminaires Beka or similar in quality and performance approved	each	6		R -
20.5.18.10		Installation for above only	each	6		R -
20.5.18.11		Supply and delivery of Hi Mast Pole, Luminaires, Brackets (approx 20m height-Mandela City) Hexagon 6 Luminaires Beka or similar in quality and performance approved by engineer & client	each	1		Rate Only
20.5.18.12		Installation for above only	each	1		Rate Only
Total Carried Forward To Next Page						R



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: Village Klappmuts

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.18.13		Supply and delivery of Hi Mast Pole, Luminares, Brackets Solar (approx 20m height-Mandela City) Hexagon 6 Luminares Beka or similar in quality and performance approved	each	1		Rate Only
20.5.18.14		Installation for above only	each	1		Rate Only
20.5.19		Kiosks				
20.5.19.1		Supply and delivery of 18 way 3CR12 Vandal Proof Pole Mounted Kiosk, fully and completely populated as per Stellenbosch Municipality Specification	Item	15	R	-
20.5.19.2		Installation with concrete plinth for above only	Item	15	R	-
20.5.19.3		Supply and delivery of 18 way 3CR12 Vandal Proof	Item	7	R	-
20.5.19.4		Installation with supplied and installed pole for above	Item	7	R	-
20.5.19.5		Supply and delivery of 18 way 3CR12 Vandal Proof	Item	1		Rate only
20.5.19.6		Installation with supplied and installed pole for above	Item	1		Rate only
20.5.19.7		Supply and delivery of Day/Night Switch	Item	1		Rate only
20.5.19.8		Installation of Day/Night Switch	Item	1		Rate only
20.5.20		Old Equipment / Materials Removal				
20.5.20.1		Overhead Cable Removal	m	10.0		Rate Only
20.5.20.2		Underground cable Removal	m	10.0		Rate Only
20.5.20.3		Delivery to Municipal Store of above only	each	1.0		Rate Only
20.5.20.4		Removal of old pole, luminaire, spigot and bracket	each	2.0	R	-
20.5.20.5		Delivery to Stellenbosch Municipal Store for above only	each	2.0	R	-
20.5.20.6		Removal of old pole, luminaire, spigot and bracket	each	1.0		Rate Only
20.5.20.7		Delivery to Stellenbosch Municipal Store for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village Klappmuts

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
						R -
20.5.20.6		Removal of old pole, luminaire, spigot and bracket	each	1.0		Rate Only
20.5.20.7		Delivery to Stellenbosch Municipal Store for above only	each	1.0		Rate Only
20.5.20.8		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client: Disposal certificates, Record including origin (site & street name) luminaire type, wattage & quantities	per 25	1.0	R	-
20.5.20.9		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client: Disposal certificates, Record including origin (site & street name) luminaire type, wattage & quantities	per 25	1.0		Rate Only
20.5.21		Excavations: Excavate 0.7m deep x 0.6m wide, backfill and compact for cables				
20.5.21.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	1206	R	-
20.5.21.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	602	R	-
20.5.21.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	602	R	-
20.5.21.4		Import, install and compaction of bedding materials to/on site	m ³	1206	R	-
20.5.21.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	1206	R	-
20.5.21.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	2410	R	-
20.5.22		Excavate 2m deep x 1m wide, backfill and compact for poles (Option 1 of 2)				
20.5.22.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	280	R	-
20.5.22.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	140	R	-
20.5.22.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	140	R	-
20.5.22.4		Import, install and compaction of bedding materials to/on site	m ³	280	R	-
20.5.22.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	280	R	-
20.5.22.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	560	R	-
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Village Klapmuts

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
						R -
20.5.23		Drilling (Alternative option to excavation for poles-Option 2 of 2)				
20.5.23.1		"Drilling of single pole hole to 1.2m depth in "soft" soil	each	10.0	R	-
20.5.23.2		"Drilling of single pole hole to 1.2m depth in "intermediate" soil	each	10.0	R	-
20.5.23.3		"Drilling of single pole hole to 1.2m depth in "hard" soil	each	21.0	R	-
20.5.23.4		"Drilling of single pole hole to 1.5m depth in "soft" soil	each	90.0	R	-
20.5.23.5		"Drilling of single pole hole to 1.5m depth in "intermediate" soil	each	90.0	R	-
20.5.23.6		"Drilling of single pole hole to 1.5m depth in "hard" soil	each	166.0	R	-
20.5.23.7		"Drilling of single pole hole to 2.0m depth in "soft" soil	each	1.0	R	-
20.5.23.8		"Drilling of single pole hole to 2.0m depth in "intermediate" soil	each	1.0	R	-
20.5.23.9		"Drilling of single pole hole to 2.0m depth in "hard" soil	each	1.0	R	-
20.5.24		Scanning				
20.5.24.1		Scanning for existing services before digging and/or boring, and/or drilling	m ²	8 279.0	R	-
20.5.25		Auxiliary installation requirements: Directional boring: (Note that these items will be subject to coordination with, and approval by the engineering representative, and the right of the engineering representative is reserved to either include or exclude the following items as and when required throughout the duration of the project)				
20.5.25.1		0m to less than 5m directional boring in length	ea	39	R	-
20.5.25.2		5m to 7m directional boring in length	ea	101	R	-
20.5.25.3		Greater than 7m and up to 10m directional in boring	ea	29	R	-
20.5.25.4		Boring rig setup at specific drilling site location(s)	ea	84	R	-
20.5.25.5		0m to less than 5m directional boring in length	ea	1	Rate only	
20.5.25.6		5m to 7m directional boring in length	ea	1	Rate only	
20.5.25.7		Greater than 7m and up to 10m directional boring in	ea	1	Rate only	
20.5.25.8		Greater than 10m and up to 15m directional boring in	ea	1	Rate only	
20.5.25.9		Greater than 15m and up to 20m directional boring in	ea	1	Rate only	
20.5.25.10		Greater than 20m and up to 30m directional boring in	ea	1	Rate only	
20.5.25.11		Boring rig setup at specific drilling site location(s)	ea	1	Rate only	
Total Carried Forward To Summary						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Vlaeberg

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
TRAFFIC LIGHT INTERSECTION VLAEBERG						
20.5.2		Cable				
20.5.2.1		2.5mm ² x 3-core thermal uv resistant silicone cable	m	690.0	R	-
20.5.2.2		Installation for above only	m	690.0	R	-
20.5.2.3		Terminations for 2,5mm ² silicone cable (Including supply all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	120.0	R	-
20.5.2.4		Installation for above only	each	120.0	R	-
20.5.2.5		Terminations for 2,5mm ² silicone cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	10.0	Rate Only	
20.5.2.6		Installation for above only	each	2.0	Rate Only	
20.5.3		25mm² x 4-core Alu ABC LV cable				
20.5.3.1		Supply and delivery only	m	40.0	Rate Only	
20.5.3.2		Installation for above only	m	40.0	Rate Only	
20.5.3.3		Terminations for 25mm ² Alu ABC cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	2.0	Rate Only	
20.5.4		25mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.4.1		Supply and delivery only	m	93.0	R	-
20.5.4.2		Installation for above only	m	93.0	R	-
20.5.4.3		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	94.0	R	-
20.5.4.4		Supply and delivery only	each	40.0	Rate Only	
20.5.4.5		Installation for above only	each	40.0	Rate Only	
20.5.4.6		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	2.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Vlaeberg

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.5		35mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.5.1		Supply and delivery only	m	50.0		Rate Only
20.5.5.2		Installation for above only	m	50.0		Rate Only
20.5.5.3		Terminations for 35mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.6		50mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.6.1		Supply and delivery only	m	50.0		Rate Only
20.5.6.2		Installation for above only	m	50.0		Rate Only
20.5.6.3		Terminations for 50mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.7		70mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.7.1		Supply and delivery only	m	50.0		Rate Only
20.5.7.2		Installation for above only	m	50.0		Rate Only
20.5.7.3		Terminations for 70mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.8		Anti Vandal System Implementations				
		Concrete Pole Support Anti Vandalism of Cables on metal, concrete and fibre glass poles				
20.5.8.1		Supply and delivery of concrete structure	each	8.0	R	-
20.5.8.2		Installation for above only	each	8.0	R	-
20.5.8.3		Supply and delivery of concrete structure	each	1.0		Rate Only
20.5.8.4		Installation for above only	each	1.0		Rate Only
		Galvanised 2.4m Steel Pipe Anti Vandalism of Cables on Wooden Poles				
20.5.8.5		Supply and delivery of pipe	each	1.0		Rate Only
20.5.8.6		Installation for above only	each	1.0		Rate Only
20.5.9		Galvanised Steel Streetlight Poles 11m				
20.5.9.1		Supply and delivery of pole	each	6.0	R	-
20.5.9.2		Installation for above only	each	6.0	R	-
20.5.9.3		Supply and delivery of pole	each	1.0		Rate Only
20.5.9.4		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Vlaeberg

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.10		Galvanised Steel Streetlight Poles 14m				
20.5.10.1		Supply and delivery of pole	each	14.0	R	-
20.5.10.2		Installation for above only	each	14.0	R	-
20.5.10.3		Supply and delivery of pole	each	1.0	Rate Only	
20.5.10.4		Installation for above only	each	1.0	Rate Only	
20.5.11		Mounting Arms				
20.5.11.1		Supply and delivery of 2m double caved light mounting arm	each	14.0	R	-
20.5.11.2		Installation for above only	each	14.0	R	-
20.5.11.3		Supply and delivery of 2m double caved light mounting	each	1.0	Rate Only	
20.5.11.4		Installation for above only	each	1.0	Rate Only	
20.5.12		Galvanised Steel Outreach Arms Straight				
20.5.12.1		300mm Ø for Streetlight Poles Supply and delivery of outreach arm	each	6.0	R	-
20.5.12.2		Installation for above only	each	6.0	R	-
20.5.12.3		300mm Ø for Streetlight Poles Supply and delivery of outreach arm	each	1.0	Rate Only	
20.5.12.4		Installation for above only	each	1.0	Rate Only	
20.5.13		Spigots				
20.5.13.1		Supply and delivery of 42mm Spigot	each	34.0	R	-
20.5.13.2		Installation for above only	each	34.0	R	-
20.5.13.3		Supply and delivery of 42mm Spigot	each	1.0	Rate Only	
20.5.13.4		Installation for above only	each	1.0	Rate Only	
Total Carried Forward To Next Page						R -



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: Traffic Light Intersection Vlaeberg

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.14		LED Luminaires				
20.5.14.1		Supply and delivery of 103W with 173 lm/W nominal efficacy or higher (Beka or similar approved)	each	37	R	-
20.5.14.2		Installation for above only	each	37	R	-
20.5.14.3		Supply and delivery of 103W with 173 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.14.4		Installation for above only	each	1	Rate Only	
20.5.15.5		Supply and delivery of 174W with 176 lm/W nominal efficacy or higher (Beka or similar approved)	each	34	R	-
20.5.15.6		Installation for above only	each	34	R	-
20.5.15.7		Supply and delivery of 174W with 176 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.15.8		Installation for above only	each	1	Rate Only	
20.5.15		Kiosks				
20.5.15.1		Supply and delivery of 18 way 3CR12 Vandal Proof	Item	1	R	-
20.5.15.2		Installation with concrete plinth for above only	Item	1	R	-
20.5.15.3		Supply and delivery of Day/Night Switch	Item	1	Rate only	
20.5.15.4		Installation of Day/Night Switch	Item	1	Rate only	
20.5.16		Old Equipment / Materials Removal				
20.5.16.1		Overhead Cable Removal	m	10.0	Rate Only	
20.5.16.2		Underground cable Removal	m	10.0	Rate Only	
20.5.16.3		Delivery to Municipal Store of above only	each	1.0	Rate Only	
20.5.16.4		Removal of old pole, luminaire, spigot and bracket	each	1.0	Rate Only	
20.5.16.5		Delivery to Stellenbosch Municipal Store for above only	each	1.0	Rate Only	
20.5.16.6		Removal of old pole, luminaire, spigot and bracket	each	1.0	Rate Only	
20.5.16.7		Delivery to Stellenbosch Municipal Store for above only	each	1.0	Rate Only	
20.5.16.8		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client: Disposal certificates, Record including origin (site & street name) luminaire type, wattage & quantities	per 25	1.0	R	-
20.5.16.9		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client: Disposal certificates, Record including origin (site & street name) luminaire type, wattage & quantities	per 25	1.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Vlaeberg

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.17		Excavations: Excavate 0.7m deep x 0.6m wide, backfill and compact for cables				
20.5.17.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	22	R	-
20.5.17.2		Per cube meter (Provision for soft as per SANS	m ³	11	R	-
20.5.17.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	11	R	-
20.5.17.4		Import, install and compaction of bedding materials to/on site	m ³	22	R	-
20.5.17.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	22	R	-
20.5.17.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	44	R	-
20.5.18		Excavate 2m deep x 1m wide, backfill and compact for poles (Option 1 of 2)				
20.5.18.1		Per cube meter (Provision for hard as per SANS	m ³	22	R	-
20.5.18.2		Per cube meter (Provision for soft as per SANS	m ³	11	R	-
20.5.18.3		Per cube meter (Provision for pickable soils as per	m ³	11	R	-
20.5.18.4		Import, install and compaction of bedding materials	m ³	22	R	-
20.5.18.5		Removal of bedding/rock materials from site to a	m ³	22	R	-
		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	44	R	-
20.5.19		Drilling (Alternative option to excavation for poles- Option 2 of 2)				
20.5.19.1		"Drilling of single pole hole to 2.0m depth in "soft" soil	each	10.0	R	-
20.5.19.2		"Drilling of single pole hole to 2.0m depth in "intermediate" soil	each	5.0	R	-
20.5.19.3		"Drilling of single pole hole to 2.0m depth in "hard" soil	each	5.0	R	-
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Vlaeberg

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
						R -
20.5.20		Auxillary installation requirements: Directional boring: (Note that these items will be subject to coordination with, and approval by the engineering representative, and the right of the engineering representative is reserved to either include or exclude the following items as and when required throughout the duration of the project)				
20.5.20.1		0m to less than 5m directional boring in length	ea	1		Rate only
20.5.20.2		5m to 7m directional boring in length	ea	1		Rate only
20.5.20.3		Greater than 7m and up to 10m directional in boring	ea	1		Rate only
20.5.20.4		Boring rig setup at specific drilling site location(s)	ea	1		Rate only
20.5.20.5		0m to less than 5m directional boring in length	ea	1		Rate only
20.5.20.6		5m to 7m directional boring in length	ea	1		Rate only
20.5.20.7		Greater than 7m and up to 10m directional boring in	ea	1		Rate only
20.5.20.8		Greater than 10m and up to 15m directional boring in	ea	1		Rate only
20.5.20.9		Greater than 15m and up to 20m directional boring in	ea	1		Rate only
20.5.20.10		Greater than 20m and up to 30m directional boring in	ea	1		Rate only
20.5.20.11		Boring rig setup at specific drilling site location(s)	ea	1		Rate only
Total Carried Forward To Summary						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Lynedoch

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
TRAFFIC LIGHT INTERSECTION LYNEDOCH						
20.5.2		Cable				
20.5.2.1		2.5mm ² x 3-core thermal uv resistant silicone cable	m	496.0		R -
20.5.2.2		Installation for above only	m	496.0		R -
20.5.2.3		Terminations for 2,5mm ² silicone cable (Including supply all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	86.0		R -
20.5.2.4		Installation for above only	each	86.0		R -
20.5.2.5		Terminations for 2,5mm ² silicone cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	10.0		Rate Only
20.5.2.6		Installation for above only	each	2.0		Rate Only
20.5.3		25mm² x 4-core Alu ABC LV cable				
20.5.3.1		Supply and delivery only	m	40.0		Rate Only
20.5.3.2		Installation for above only	m	40.0		Rate Only
20.5.3.3		Terminations for 25mm ² Alu ABC cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	2.0		Rate Only
20.5.4		25mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.4.1		Supply and delivery only	m	43.0		R -
20.5.4.2		Installation for above only	m	43.0		R -
20.5.4.3		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	36.0		R -
20.5.4.4		Supply and delivery only	m	40.0		Rate Only
20.5.4.5		Installation for above only	m	40.0		Rate Only
20.5.4.6		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	2.0		Rate Only
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Lynedoch

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.5		35mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.5.1		Supply and delivery only	m	50.0		Rate Only
20.5.5.2		Installation for above only	m	50.0		Rate Only
20.5.5.3		Terminations for 35mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.6		50mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.6.1		Supply and delivery only	m	50.0		Rate Only
20.5.6.2		Installation for above only	m	50.0		Rate Only
20.5.6.3		Terminations for 50mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.7		70mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.7.1		Supply and delivery only	m	50.0		Rate Only
20.5.7.2		Installation for above only	m	50.0		Rate Only
20.5.7.3		Terminations for 70mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.8		Anti Vandal System Implementations				
		Concrete Pole Support Anti Vandalism of Cables on metal, concrete and fibre glass poles				
20.5.8.1		Supply and delivery of concrete structure	each	8.0		R -
20.5.8.2		Installation for above only	each	8.0		R -
20.5.8.3		Supply and delivery of concrete structure	each	1.0		Rate Only
20.5.8.4		Installation for above only	each	1.0		Rate Only
		Galvanised 2.4m Steel Pipe Anti Vandalism of Cables on Wooden Poles				
20.5.8.5		Supply and delivery of pipe	each	1.0		Rate Only
20.5.8.6		Installation for above only	each	1.0		Rate Only
20.5.9		Galvanised Steel Streetlight Poles 11m				
20.5.9.1		Supply and delivery of pole	each	1.0		Rate Only
20.5.9.2		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Lynedoch

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.10		Galvanised Steel Streetlight Poles 14m				
20.5.10.1		Supply and delivery of pole	each	23.0		R -
20.5.10.2		Installation for above only	each	23.0		R -
20.5.10.3		Supply and delivery of pole	each	1.0		Rate Only
20.5.10.4		Installation for above only	each	1.0		Rate Only
20.5.11		Mounting Arms				
20.5.11.1		Supply and delivery of 2m double caved light mounting arm	each	12.0		R -
20.5.11.2		Installation for above only	each	12.0		R -
20.5.11.3		Supply and delivery of 2m double caved light mounting	each	1.0		Rate Only
20.5.11.4		Installation for above only	each	1.0		Rate Only
20.5.12		Galvanised Steel Outreach Arms Straight				
20.5.12.1		300mm Ø for Streetlight Poles Supply and delivery of outreach arm	each	11.0		R -
20.5.12.2		Installation for above only	each	11.0		R -
20.5.12.3		300mm Ø for Streetlight Poles Supply and delivery of outreach arm	each	1.0		Rate Only
20.5.12.4		Installation for above only	each	1.0		Rate Only
20.5.13		Spigots				
20.5.13.1		Supply and delivery of 42mm Spigot	each	35.0		R -
20.5.13.2		Installation for above only	each	35.0		R -
20.5.13.3		Supply and delivery of 42mm Spigot	each	1.0		Rate Only
20.5.13.4		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Lynedoch

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.14		LED Luminaires				
20.5.14.1		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	5	R	-
20.5.14.2		Installation for above only	each	5	R	-
20.5.14.3		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.14.4		Installation for above only	each	1	Rate Only	
20.5.15.5		Supply and delivery of 103W with 173 lm/W nominal efficacy or higher (Beka or similar approved)	each	38	R	-
20.5.15.6		Installation for above only	each	38	R	-
20.5.15.7		Supply and delivery of 103W with 173 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.15.8		Installation for above only	each	1	Rate Only	
20.5.15.9		Supply and delivery of 174W with 176 lm/W nominal efficacy or higher (Beka or similar approved)	each	16	R	-
20.5.15.10		Installation for above only	each	16	R	-
20.5.15.11		Supply and delivery of 174W with 176 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.15.12		Installation for above only	each	1	Rate Only	
20.5.16		Kiosks				
20.5.16.1		Supply and delivery of 18 way 3CR12 Vandal Proof	Item	1	R	-
20.5.16.2		Installation with concrete plinth for above only	Item	1	R	-
20.5.16.3		Supply and delivery of Day/Night Switch	Item	1	Rate only	
20.5.16.4		Installation of Day/Night Switch	Item	1	Rate only	
20.5.17		Old Equipment / Materials Removal				
20.5.17.1		Overhead Cable Removal	m	10.0	Rate Only	
20.5.17.2		Underground cable Removal	m	10.0	Rate Only	
20.5.17.3		Delivery to Municipal Store of above only	each	1.0	Rate Only	
20.5.17.4		Removal of old pole, luminaire, spigot and bracket	each	1.0	Rate Only	
20.5.17.5		Delivery to Stellenbosch Municipal Store for above only	each	1.0	Rate Only	
20.5.17.6		Removal of old pole, luminaire, spigot and bracket	each	1.0	Rate Only	
20.5.17.7		Delivery to Stellenbosch Municipal Store for above only	each	1.0	Rate Only	
20.5.17.8		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client: Disposal certificates, Record including origin (site & street name) luminaire type, wattage & quantities	per 25	1.0	R	-
20.5.17.9		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client: Disposal certificates, Record including origin (site & street name) luminaire type, wattage & quantities	per 25	1.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Lynedoch

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.18		Excavations: Excavate 0.7m deep x 0.6m wide, backfill and compact for cables				
20.5.18.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	24	R	-
20.5.18.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	12	R	-
20.5.18.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	12	R	-
20.5.18.4		Import, install and compaction of bedding materials to/on site	m ³	24	R	-
20.5.18.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	24	R	-
20.5.17.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	48	R	-
20.5.19		Excavate 2m deep x 1m wide, backfill and compact for poles (Option 1 of 2)				
20.5.19.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	23	R	-
20.5.19.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	12	R	-
20.5.19.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	12	R	-
20.5.19.4		Import, install and compaction of bedding materials to/on site	m ³	23	R	-
20.5.19.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	23	R	-
		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	46	R	-
20.5.20		Drilling (Alternative option to excavation for poles- Option 2 of 2)				
20.5.20.1		"Drilling of single pole hole to 2.0m depth in "soft" soil	each	10.0	R	-
20.5.20.2		"Drilling of single pole hole to 2.0m depth in "intermediate" soil	each	7.0	R	-
20.5.20.3		"Drilling of single pole hole to 2.0m depth in "hard" soil	each	6.0	R	-
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Lynedoch

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
						R -
20.5.21		Auxiliary installation requirements: Directional boring: (Note that these items will be subject to coordination with, and approval by the engineering representative, and the right of the engineering representative is reserved to either include or exclude the following items as and when required throughout the duration of the project)				
20.5.21.1		0m to less than 5m directional boring in length	ea	1		Rate only
20.5.21.2		5m to 7m directional boring in length	ea	1		Rate only
20.5.21.3		Greater than 7m and up to 10m directional in boring	ea	1		Rate only
20.5.21.4		Boring rig setup at specific drilling site location(s)	ea	1		Rate only
20.5.21.5		0m to less than 5m directional boring in length	ea	1		Rate only
20.5.21.6		5m to 7m directional boring in length	ea	1		Rate only
20.5.21.7		Greater than 7m and up to 10m directional boring in	ea	1		Rate only
20.5.21.8		Greater than 10m and up to 15m directional boring in	ea	1		Rate only
20.5.21.9		Greater than 15m and up to 20m directional boring in	ea	1		Rate only
20.5.21.10		Greater than 20m and up to 30m directional boring in	ea	1		Rate only
20.5.21.11		Boring rig setup at specific drilling site location(s)	ea	1		Rate only
Total Carried Forward To Summary						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Annandale

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
TRAFFIC LIGHT INTERSECTION ANNANDALE						
20.5.2		Cable				
20.5.2.1		2.5mm ² x 3-core thermal uv resistant silicone cable	m	690.0	R	-
20.5.2.2		Installation for above only	m	690.0	R	-
20.5.2.3		Terminations for 2.5mm ² silicone cable (Including supply all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	128.0	R	-
20.5.2.4		Installation for above only	each	128.0	R	-
20.5.2.5		Terminations for 2.5mm ² silicone cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	10.0	Rate Only	
20.5.2.6		Installation for above only	each	2.0	Rate Only	
20.5.3		25mm² x 4-core Alu ABC LV cable				
20.5.3.1		Supply and delivery only	m	40.0	Rate Only	
20.5.3.2		Installation for above only	m	40.0	Rate Only	
20.5.3.3		Terminations for 25mm ² Alu ABC cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0	Rate Only	
20.5.4		25mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.4.1		Supply and delivery only	m	1 012.0	R	-
20.5.4.2		Installation for above only	m	1 012.0	R	-
20.5.4.3		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	82.0	R	-
20.5.4.4		Supply and delivery only	each	82.0	Rate Only	
20.5.4.5		Installation for above only	each	82.0	Rate Only	
20.5.4.6		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0	Rate Only	
Total Carried Forward To Next Page						R -



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: Traffic Light Intersection Annandale

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.5		35mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.5.1		Supply and delivery only	m	50.0		Rate Only
20.5.5.2		Installation for above only	m	50.0		Rate Only
20.5.5.3		Terminations for 35mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.6		50mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.6.1		Supply and delivery only	m	50.0		Rate Only
20.5.6.2		Installation for above only	m	50.0		Rate Only
20.5.6.3		Terminations for 50mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.7		70mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.7.1		Supply and delivery only	m	50.0		Rate Only
20.5.7.2		Installation for above only	m	50.0		Rate Only
20.5.7.3		Terminations for 70mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.8		Anti Vandal System Implementations				
		Concrete Pole Support Anti Vandalism of Cables on metal, concrete and fibre glass poles				
20.5.8.1		Supply and delivery of concrete structure	each	8.0		R -
20.5.8.2		Installation for above only	each	8.0		R -
20.5.8.3		Supply and delivery of concrete structure	each	1.0		Rate Only
20.5.8.4		Installation for above only	each	1.0		Rate Only
		Galvanised 2.4m Steel Pipe Anti Vandalism of Cables on Wooden Poles				
20.5.8.5		Supply and delivery of pipe	each	1.0		Rate Only
20.5.8.6		Installation for above only	each	1.0		Rate Only
20.5.9		Galvanised Steel Streetlight Poles 11m				
20.5.9.1		Supply and delivery of pole	each	1.0		Rate Only
20.5.9.2		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Annandale

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.10		Galvanised Steel Streetlight Poles 14m				
20.5.10.1		Supply and delivery of pole	each	36.0		R -
20.5.10.2		Installation for above only	each	36.0		R -
20.5.10.3		Supply and delivery of pole	each	1.0		Rate Only
20.5.10.4		Installation for above only	each	1.0		Rate Only
20.5.11		Mounting Arms				
20.5.11.1		Supply and delivery of 2m double caved light mounting arm	each	1.0		Rate Only
20.5.11.2		Installation for above only	each	1.0		Rate Only
20.5.12		Galvanised Steel Outreach Arms Straight				
20.5.12.1		300mm Ø* for Streetlight Poles Supply and delivery of outreach arm	each	16.0		R -
20.5.12.2		Installation for above only	each	16.0		R -
20.5.12.3		300mm Ø* for Streetlight Poles Supply and delivery of outreach arm	each	1.0		Rate Only
20.5.12.4		Installation for above only	each	1.0		Rate Only
20.5.13		Spigots				
20.5.13.1		Supply and delivery of 42mm Spigot	each	43.0		R -
20.5.13.2		Installation for above only	each	43.0		R -
20.5.13.3		Supply and delivery of 42mm Spigot	each	1.0		Rate Only
20.5.13.4		Installation for above only	each	1.0		Rate Only
20.5.13.5		Supply and delivery of 42mm Double Spigot	each	8.0		R -
20.5.13.6		Installation for above only	each	8.0		R -
20.5.13.7		Supply and delivery of 42mm Double Spigot	each	1.0		Rate Only
20.5.13.8		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: Traffic Light Intersection Annandale

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.14		LED Luminaires				
20.5.14.1		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	20	R	-
20.5.14.2		Installation for above only	each	20	R	-
20.5.14.3		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.14.4		Installation for above only	each	1	Rate Only	
20.5.15.5		Supply and delivery of 103W with 173 lm/W nominal efficacy or higher (Beka or similar approved)	each	12	R	-
20.5.15.6		Installation for above only	each	12	R	-
20.5.15.7		Supply and delivery of 103W with 173 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.15.8		Installation for above only	each	1	Rate Only	
20.5.15.9		Supply and delivery of 174W with 176 lm/W nominal efficacy or higher (Beka or similar approved)	each	32	R	-
20.5.15.10		Installation for above only	each	32	R	-
20.5.15.11		Supply and delivery of 174W with 176 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.15.12		Installation for above only	each	1	Rate Only	
20.5.16		Kiosks				
20.5.16.1		Supply and delivery of 18 way 3CR12 Vandal Proof Pole Mounted Kiosk, fully and completely populated as per Stellenbosch Municipality Specification	Item	1	R	-
20.5.16.2		Installation with concrete plinth for above only	Item	1	R	-
20.5.16.3		Supply and delivery of Day/Night Switch	Item	1	Rate only	
20.5.16.4		Installation of Day/Night Switch	Item	1	Rate only	
20.5.17		Old Equipment / Materials Removal				
20.5.17.1		Overhead Cable Removal	m	10.0	Rate Only	
20.5.17.2		Underground cable Removal	m	10.0	Rate Only	
20.5.17.3		Delivery to Municipal Store of above only	each	1.0	Rate Only	
20.5.17.4		Removal of old pole, luminaire, spigot and bracket	each	1.0	Rate Only	
20.5.17.5		Delivery to Stellenbosch Municipal Store for above only	each	1.0	Rate Only	
20.5.17.6		Removal of old pole, luminaire, spigot and bracket	each	1.0	Rate Only	
20.5.17.7		Delivery to Stellenbosch Municipal Store for above only	each	1.0	Rate Only	
20.5.17.8		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client: Disposal certificates, Record including origin (site & street name) luminaire type, wattage & quantities	per 25	1.0	R	-
20.5.17.9		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client: Disposal certificates, Record including origin (site & street name) luminaire type, wattage & quantities	per 25	1.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Annandale

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.18		Excavations: Excavate 0.7m deep x 0.6m wide, backfill and compact for cables				
20.5.18.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	213	R	-
20.5.18.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	107	R	-
20.5.18.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	107	R	-
20.5.18.4		Import, install and compaction of bedding materials to/on site	m ³	213	R	-
20.5.18.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	213	R	-
20.5.17.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	426	R	-
20.5.18		Excavate 2m deep x 1m wide, backfill and compact for poles (Option 1 of 2)				
20.5.18.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	44	R	-
20.5.18.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	22	R	-
20.5.18.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	22	R	-
20.5.18.4		Import, install and compaction of bedding materials to/on site	m ³	44	R	-
20.5.18.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	44	R	-
		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	88	R	-
20.5.19		Drilling (Alternative option to excavation for poles- Option 2 of 2)				
20.5.19.1		"Drilling of single pole hole to 2.0m depth in "soft" soil	each	18.0	R	-
20.5.19.2		"Drilling of single pole hole to 2.0m depth in "intermediate" soil	each	9.0	R	-
20.5.19.2		"Drilling of single pole hole to 2.0m depth in "hard" soil	each	9.0	R	-
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Annandale

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
						R -
20.5.21		Auxiliary installation requirements: Directional boring: (Note that these items will be subject to coordination with, and approval by the engineering representative, and the right of the engineering representative is reserved to either include or exclude the following items as and when required throughout the duration of the project)				
20.5.21.1		0m to less than 5m directional boring in length	ea	1		Rate only
20.5.21.2		5m to 7m directional boring in length	ea	1		Rate only
20.5.21.3		Greater than 7m and up to 10m directional in boring	ea	1		Rate only
20.5.21.4		Boring rig setup at specific drilling site location(s)	ea	1		Rate only
20.5.21.5		0m to less than 5m directional boring in length	ea	1		Rate only
20.5.21.6		5m to 7m directional boring in length	ea	1		Rate only
20.5.21.7		Greater than 7m and up to 10m directional boring in	ea	1		Rate only
20.5.21.8		Greater than 10m and up to 15m directional boring in	ea	1		Rate only
20.5.21.9		Greater than 15m and up to 20m directional boring in	ea	1		Rate only
20.5.21.10		Greater than 20m and up to 30m directional boring in	ea	1		Rate only
20.5.21.11		Boring rig setup at specific drilling site location(s)	ea	1		Rate only
Total Carried Forward To Summary						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Koelenhof

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
TRAFFIC LIGHT INTERSECTION KOELENHOF						
20.5.2		Cable				
20.5.2.1		2.5mm ² x 3-core thermal uv resistant silicone cable	m	679.0	R	-
20.5.2.2		Installation for above only	m	679.0	R	-
20.5.2.3		Terminations for 2,5mm ² silicone cable (Including supply all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	118.0	R	-
20.5.2.4		Installation for above only	each	118.0	R	-
20.5.2.5		Terminations for 2,5mm ² silicone cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	10.0	Rate Only	
20.5.2.6		Installation for above only	each	2.0	Rate Only	
20.5.3		25mm² x 4-core Alu ABC LV cable				
20.5.3.1		Supply and delivery only	m	40.0	Rate Only	
20.5.3.2		Installation for above only	m	40.0	Rate Only	
20.5.3.3		Terminations for 25mm ² Alu ABC cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	2.0	Rate Only	
20.5.4		25mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.4.1		Supply and delivery only	m	1 525.0	R	-
20.5.4.2		Installation for above only	m	1 525.0	R	-
20.5.4.3		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	120.0	R	-
20.5.4.4		Supply and delivery only	each	50.0	Rate Only	
20.5.4.5		Installation for above only	each	50.0	Rate Only	
20.5.4.6		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	2.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Koelenhof

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.5		35mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.5.1		Supply and delivery only	m	50.0		Rate Only
20.5.5.2		Installation for above only	m	50.0		Rate Only
20.5.5.3		Terminations for 35mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.6		50mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.6.1		Supply and delivery only	m	50.0		Rate Only
20.5.6.2		Installation for above only	m	50.0		Rate Only
20.5.6.3		Terminations for 50mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.7		70mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.7.1		Supply and delivery only	m	50.0		Rate Only
20.5.7.2		Installation for above only	m	50.0		Rate Only
20.5.7.3		Terminations for 70mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.8		Anti Vandal System Implementations				
		Concrete Pole Support Anti Vandalism of Cables on metal, concrete and fibre glass poles				
20.5.8.1		Supply and delivery of concrete structure	each	8.0	R	-
20.5.8.2		Installation for above only	each	8.0	R	-
20.5.8.3		Supply and delivery of concrete structure	each	1.0		Rate Only
20.5.8.4		Installation for above only	each	1.0		Rate Only
		Galvanised 2.4m Steel Pipe Anti Vandalism of Cables on Wooden Poles				
20.5.8.5		Supply and delivery of pipe	each	1.0		Rate Only
20.5.8.6		Installation for above only	each	1.0		Rate Only
20.5.9		Galvanised Steel Streetlight Poles 11m				
20.5.9.1		Supply and delivery of pole	each	57.0	R	-
20.5.9.2		Installation for above only	each	57.0	R	-
20.5.9.3		Supply and delivery of pole	each	1.0		Rate Only
20.5.9.4		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Koelenhof

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.10		Galvanised Steel Streetlight Poles 14m				
20.5.10.1		Supply and delivery of pole	each	1.0		Rate Only
20.5.10.2		Installation for above only	each	1.0		Rate Only
20.5.11		Mounting Arms				
20.5.11.1		Supply and delivery of 2m single caved light mounting arm	each	57.0		R -
20.5.11.2		Installation for above only	each	57.0		R -
20.5.12		Galvanised Steel Outreach Arms Straight				
20.5.12.1		300mm Ø* for Streetlight Poles Supply and delivery of outreach arm	each	1.0		Rate Only
20.5.12.2		Installation for above only	each	1.0		Rate Only
20.5.13		Spigots				
20.5.13.1		Supply and delivery of 42mm Spigot	each	57.0		R -
20.5.13.2		Installation for above only	each	57.0		R -
20.5.13.3		Supply and delivery of 42mm Spigot	each	1.0		Rate Only
20.5.13.4		Installation for above only	each	1.0		Rate Only
20.5.13.5		Supply and delivery of 42mm Double Spigot	each	1.0		Rate Only
20.5.13.6		Installation for above only	each	1.0		Rate Only
20.5.13.7		Supply and delivery of 42mm Double Spigot	each	1.0		Rate Only
20.5.13.8		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Koelenhof

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.14		LED Luminaires				
20.5.14.1		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	5	R	-
20.5.14.2		Installation for above only	each	5	R	-
20.5.14.3		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.14.4		Installation for above only	each	1	Rate Only	
20.5.15.5		Supply and delivery of 103W with 173 lm/W nominal efficacy or higher (Beka or similar approved)	each	24	R	-
20.5.15.6		Installation for above only	each	24	R	-
20.5.15.7		Supply and delivery of 103W with 173 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.15.8		Installation for above only	each	1	Rate Only	
20.5.15.9		Supply and delivery of 174W with 176 lm/W nominal efficacy or higher (Beka or similar approved)	each	32	R	-
20.5.15.10		Installation for above only	each	32	R	-
20.5.15.11		Supply and delivery of 174W with 176 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.15.12		Installation for above only	each	1	Rate Only	
20.5.16		Kiosks				
20.5.16.1		Supply and delivery of 18 way 3CR12 Vandal Proof Pole Mounted Kiosk, fully and completely populated as per Stellenbosch Municipality Specification	Item	1	R	-
20.5.16.2		Installation with concrete plinth for above only	Item	1	R	-
20.5.16.3		Supply and delivery of Day/Night Switch	Item	1	Rate only	
20.5.16.4		Installation of Day/Night Switch	Item	1	Rate only	
20.5.17		Old Equipment / Materials Removal				
20.5.17.1		Overhead Cable Removal	m	10.0	Rate Only	
20.5.17.2		Underground cable Removal	m	10.0	Rate Only	
20.5.17.3		Delivery to Municipal Store of above only	each	1.0	Rate Only	
20.5.17.4		Removal of old pole, luminaire, spigot and bracket	each	1.0	Rate Only	
20.5.17.5		Delivery to Stellenbosch Municipal Store for above only	each	1.0	Rate Only	
20.5.17.6		Removal of old pole, luminaire, spigot and bracket	each	1.0	Rate Only	
20.5.17.7		Delivery to Stellenbosch Municipal Store for above only	each	1.0	Rate Only	
20.5.17.8		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client: Disposal certificates, Record including origin (site & street name) luminaire type, wattage & quantities	per 25	1.0	R	-
20.5.17.9		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client: Disposal certificates, Record including origin (site & street name) luminaire type, wattage & quantities	per 25	1.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Koelenhof

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.18		Excavations: Excavate 0.7m deep x 0.6m wide, backfill and compact for cables				
20.5.18.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	940	R	-
20.5.18.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	470	R	-
20.5.18.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	470	R	-
20.5.18.4		Import, install and compaction of bedding materials to/on site	m ³	940	R	-
20.5.18.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	940	R	-
20.5.17.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	1880	R	-
20.5.18		Excavate 2m deep x 1m wide, backfill and compact for poles (Option 1 of 2)				
20.5.18.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	57	R	-
20.5.18.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	28	R	-
20.5.18.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	29	R	-
20.5.18.4		Import, install and compaction of bedding materials to/on site	m ³	57	R	-
20.5.18.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	57	R	-
		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	114	R	-
20.5.19		Drilling (Alternative option to excavation for poles- Option 2 of 2)				
20.5.19.1		"Drilling of single pole hole to 2.0m depth in "soft" soil	each	31.0	R	-
20.5.19.2		"Drilling of single pole hole to 2.0m depth in "intermediate" soil	each	13.0	R	-
20.5.19.2		"Drilling of single pole hole to 2.0m depth in "hard" soil	each	13.0	R	-
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Koelenhof

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
						R -
20.5.21		Auxillary installation requirements: Directional boring: (Note that these items will be subject to coordination with, and approval by the engineering representative, and the right of the engineering representative is reserved to either include or exclude the following items as and when required throughout the duration of the project)				
20.5.21.1		0m to less than 5m directional boring in length	ea	1		Rate only
20.5.21.2		5m to 7m directional boring in length	ea	1		Rate only
20.5.21.3		Greater than 7m and up to 10m directional in boring	ea	1		Rate only
20.5.21.4		Boring rig setup at specific drilling site location(s)	ea	1		Rate only
20.5.21.5		0m to less than 5m directional boring in length	ea	1		Rate only
20.5.21.6		5m to 7m directional boring in length	ea	1		Rate only
20.5.21.7		Greater than 7m and up to 10m directional boring in	ea	1		Rate only
20.5.21.8		Greater than 10m and up to 15m directional boring in	ea	1		Rate only
20.5.21.9		Greater than 15m and up to 20m directional boring in	ea	1		Rate only
20.5.21.10		Greater than 20m and up to 30m directional boring in	ea	1		Rate only
20.5.21.11		Boring rig setup at specific drilling site location(s)	ea	1		Rate only
Total Carried Forward To Summary						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Koelenhof

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
TRAFFIC LIGHT INTERSECTION KOELENHOF						
20.5.2		Cable				
20.5.2.1		2.5mm ² x 3-core thermal uv resistant silicone cable	m	897.0	R	-
20.5.2.2		Installation for above only	m	897.0	R	-
20.5.2.3		Terminations for 2,5mm ² silicone cable (Including supply all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	156.0	R	-
20.5.2.4		Installation for above only	each	156.0	R	-
20.5.2.5		Terminations for 2,5mm ² silicone cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	10.0	Rate Only	
20.5.2.6		Installation for above only	each	2.0	Rate Only	
20.5.3		25mm² x 4-core Alu ABC LV cable				
20.5.3.1		Supply and delivery only	m	40.0	Rate Only	
20.5.3.2		Installation for above only	m	40.0	Rate Only	
20.5.3.3		Terminations for 25mm ² Alu ABC cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	2.0	Rate Only	
20.5.4		25mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.4.1		Supply and delivery only	m	489.0	R	-
20.5.4.2		Installation for above only	m	489.0	R	-
20.5.4.3		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	62.0	R	-
20.5.4.4		Supply and delivery only	each	50.0	Rate Only	
20.5.4.5		Installation for above only	each	50.0	Rate Only	
20.5.4.6		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	2.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Koelenhof

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.5		35mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.5.1		Supply and delivery only	m	50.0		Rate Only
20.5.5.2		Installation for above only	m	50.0		Rate Only
20.5.5.3		Terminations for 35mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.6		50mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.6.1		Supply and delivery only	m	50.0		Rate Only
20.5.6.2		Installation for above only	m	50.0		Rate Only
20.5.6.3		Terminations for 50mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.7		70mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.7.1		Supply and delivery only	m	50.0		Rate Only
20.5.7.2		Installation for above only	m	50.0		Rate Only
20.5.7.3		Terminations for 70mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.8		Anti Vandal System Implementations				
		Concrete Pole Support Anti Vandalism of Cables on metal, concrete and fibre glass poles				
20.5.8.1		Supply and delivery of concrete structure	each	8.0		R -
20.5.8.2		Installation for above only	each	8.0		R -
20.5.8.3		Supply and delivery of concrete structure	each	1.0		Rate Only
20.5.8.4		Installation for above only	each	1.0		Rate Only
		Galvanised 2.4m Steel Pipe Anti Vandalism of Cables on Wooden Poles				
20.5.8.5		Supply and delivery of pipe	each	1.0		Rate Only
20.5.8.6		Installation for above only	each	1.0		Rate Only
20.5.9		Galvanised Steel Streetlight Poles 11m				
20.5.9.1		Supply and delivery of pole	each	1.0		Rate Only
20.5.9.2		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Koelenhof

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.10		Galvanised Steel Streetlight Poles 14m				
20.5.10.1		Supply and delivery of pole	each	25.0		R -
20.5.10.2		Installation for above only	each	25.0		R -
20.5.10.3		Supply and delivery of pole	each	1.0		Rate Only
20.5.10.4		Installation for above only	each	1.0		Rate Only
20.5.11		Mounting Arms				
20.5.11.1		Supply and delivery of 2m single caved light mounting arm	each	1.0		Rate Only
20.5.11.2		Installation for above only	each	1.0		Rate Only
20.5.12		Galvanised Steel Outreach Arms Straight				
20.5.12.1		300mm Ø for Streetlight Poles Supply and delivery of outreach arm	each	25.0		Rate Only
20.5.12.2		Installation for above only	each	25.0		Rate Only
20.5.13		Spigots				
20.5.13.1		Supply and delivery of 42mm Spigot	each	25.0		R -
20.5.13.2		Installation for above only	each	25.0		R -
20.5.13.3		Supply and delivery of 42mm Spigot	each	1.0		Rate Only
20.5.13.4		Installation for above only	each	1.0		Rate Only
20.5.13.5		Supply and delivery of 42mm Double Spigot	each	1.0		Rate Only
20.5.13.6		Installation for above only	each	1.0		Rate Only
20.5.13.7		Supply and delivery of 42mm Double Spigot	each	1.0		Rate Only
20.5.13.8		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: Traffic Light Intersection Koelenhof

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.14		LED Luminaires				
20.5.14.1		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	10	R	-
20.5.14.2		Installation for above only	each	10	R	-
20.5.14.3		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.14.4		Installation for above only	each	1	Rate Only	
20.5.15.5		Supply and delivery of 103W with 173 lm/W nominal efficacy or higher (Beka or similar approved)	each	36	R	-
20.5.15.6		Installation for above only	each	36	R	-
20.5.15.7		Supply and delivery of 103W with 173 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.15.8		Installation for above only	each	1	Rate Only	
20.5.15.9		Supply and delivery of 174W with 176 lm/W nominal efficacy or higher (Beka or similar approved)	each	16	R	-
20.5.15.10		Installation for above only	each	16	R	-
20.5.15.11		Supply and delivery of 174W with 176 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.15.12		Installation for above only	each	1	Rate Only	
20.5.16		Kiosks				
20.5.16.1		Supply and delivery of 18 way 3CR12 Vandal Proof Pole Mounted Kiosk, fully and completely populated as per Stellenbosch Municipality Specification	Item	1	R	-
20.5.16.2		Installation with concrete plinth for above only	Item	1	R	-
20.5.16.3		Supply and delivery of Day/Night Switch	Item	1	Rate only	
20.5.16.4		Installation of Day/Night Switch	Item	1	Rate only	
20.5.17		Old Equipment / Materials Removal				
20.5.17.1		Overhead Cable Removal	m	10.0	Rate Only	
20.5.17.2		Underground cable Removal	m	10.0	Rate Only	
20.5.17.3		Delivery to Municipal Store of above only	each	1.0	Rate Only	
20.5.17.4		Removal of old pole, luminaire, spigot and bracket	each	1.0	Rate Only	
20.5.17.5		Delivery to Stellenbosch Municipal Store for above only	each	1.0	Rate Only	
20.5.17.6		Removal of old pole, luminaire, spigot and bracket	each	1.0	Rate Only	
20.5.17.7		Delivery to Stellenbosch Municipal Store for above only	each	1.0	Rate Only	
20.5.17.8		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client: Disposal certificates, Record including origin (site & street name) luminaire type, wattage & quantities	per 25	1.0	R	-
20.5.17.9		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client: Disposal certificates, Record including origin (site & street name) luminaire type, wattage & quantities	per 25	1.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Koelenhof

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.18		Excavations: Excavate 0.7m deep x 0.6m wide, backfill and compact for cables				
20.5.18.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m³	104	R	-
20.5.18.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m³	52	R	-
20.5.18.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m³	52	R	-
20.5.18.4		Import, install and compaction of bedding materials to/on site	m³	104	R	-
20.5.18.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m³	104	R	-
20.5.17.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m³	208	R	-
20.5.18		Excavate 2m deep x 1m wide, backfill and compact for poles (Option 1 of 2)				
20.5.18.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m³	25	R	-
20.5.18.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m³	12	R	-
20.5.18.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m³	12	R	-
20.5.18.4		Import, install and compaction of bedding materials to/on site	m³	26	R	-
20.5.18.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m³	26	R	-
		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m³	50	R	-
20.5.19		Drilling (Alternative option to excavation for poles- Option 2 of 2)				
20.5.19.1		"Drilling of single pole hole to 2.0m depth in "soft" soil	each	22.0	R	-
20.5.19.2		"Drilling of single pole hole to 2.0m depth in "intermediate" soil	each	11.0	R	-
20.5.19.2		"Drilling of single pole hole to 2.0m depth in "hard" soil	each	11.0	R	-
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Koelenhof

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
						R -
20.5.21		Auxiliary installation requirements: Directional boring: (Note that these items will be subject to coordination with, and approval by the engineering representative, and the right of the engineering representative is reserved to either include or exclude the following items as and when required throughout the duration of the project)				
20.5.21.1		0m to less than 5m directional boring in length	ea	1		Rate only
20.5.21.2		5m to 7m directional boring in length	ea	1		Rate only
20.5.21.3		Greater than 7m and up to 10m directional in boring	ea	1		Rate only
20.5.21.4		Boring rig setup at specific drilling site location(s)	ea	1		Rate only
20.5.21.5		0m to less than 5m directional boring in length	ea	1		Rate only
20.5.21.6		5m to 7m directional boring in length	ea	1		Rate only
20.5.21.7		Greater than 7m and up to 10m directional boring in	ea	1		Rate only
20.5.21.8		Greater than 10m and up to 15m directional boring in	ea	1		Rate only
20.5.21.9		Greater than 15m and up to 20m directional boring in	ea	1		Rate only
20.5.21.10		Greater than 20m and up to 30m directional boring in	ea	1		Rate only
20.5.21.11		Boring rig setup at specific drilling site location(s)	ea	1		Rate only
Total Carried Forward To Summary						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Koelenhof

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
TRAFFIC LIGHT INTERSECTION KOELENHOF						
20.5.2		Cable				
20.5.2.1		2.5mm ² x 3-core thermal uv resistant silicone cable	m	621.0	R	-
20.5.2.2		Installation for above only	m	621.0	R	-
20.5.2.3		Terminations for 2,5mm ² silicone cable (Including supply all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	108.0	R	-
20.5.2.4		Installation for above only	each	108.0	R	-
20.5.2.5		Terminations for 2,5mm ² silicone cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	2.0	Rate Only	
20.5.2.6		Installation for above only	each	2.0	Rate Only	
20.5.3		25mm² x 4-core Alu ABC LV cable				
20.5.3.1		Supply and delivery only	m	40.0	Rate Only	
20.5.3.2		Installation for above only	m	40.0	Rate Only	
20.5.3.3		Terminations for 25mm ² Alu ABC cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	2.0	Rate Only	
20.5.4		25mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.4.1		Supply and delivery only	m	504.0	R	-
20.5.4.2		Installation for above only	m	504.0	R	-
20.5.4.3		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	58.0	R	-
20.5.4.4		Supply and delivery only	each	50.0	Rate Only	
20.5.4.5		Installation for above only	each	50.0	Rate Only	
20.5.4.6		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	2.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Koelenhof

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.5		35mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.5.1		Supply and delivery only	m	50.0		Rate Only
20.5.5.2		Installation for above only	m	50.0		Rate Only
20.5.5.3		Terminations for 35mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.6		50mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.6.1		Supply and delivery only	m	50.0		Rate Only
20.5.6.2		Installation for above only	m	50.0		Rate Only
20.5.6.3		Terminations for 50mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.7		70mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.7.1		Supply and delivery only	m	50.0		Rate Only
20.5.7.2		Installation for above only	m	50.0		Rate Only
20.5.7.3		Terminations for 70mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.8		Anti Vandal System Implementations				
		Concrete Pole Support Anti Vandalism of Cables on metal, concrete and fibre glass poles				
20.5.8.1		Supply and delivery of concrete structure	each	8.0		R -
20.5.8.2		Installation for above only	each	8.0		R -
20.5.8.3		Supply and delivery of concrete structure	each	1.0		Rate Only
20.5.8.4		Installation for above only	each	1.0		Rate Only
		Galvanised 2.4m Steel Pipe Anti Vandalism of Cables on Wooden Poles				
20.5.8.5		Supply and delivery of pipe	each	1.0		Rate Only
20.5.8.6		Installation for above only	each	1.0		Rate Only
20.5.9		Galvanised Steel Streetlight Poles 11m				
20.5.9.1		Supply and delivery of pole	each	1.0		Rate Only
20.5.9.2		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Koelenhof

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.10		Galvanised Steel Streetlight Poles 14m				
20.5.10.1		Supply and delivery of pole	each	33.0		R -
20.5.10.2		Installation for above only	each	33.0		R -
20.5.10.3		Supply and delivery of pole	each	1.0		Rate Only
20.5.10.4		Installation for above only	each	1.0		Rate Only
20.5.11		Mounting Arms				
20.5.11.1		Supply and delivery of 2m single caved light mounting arm	each	1.0		Rate Only
20.5.11.2		Installation for above only	each	1.0		Rate Only
20.5.12		Galvanised Steel Outreach Arms Straight				
20.5.12.1		300mm Ø" for Streetlight Poles Supply and delivery of outreach arm	each	33.0		R -
20.5.12.2		Installation for above only	each	33.0		R -
20.5.13		Spigots				
20.5.13.1		Supply and delivery of 42mm Spigot	each	33.0		R -
20.5.13.2		Installation for above only	each	33.0		R -
20.5.13.3		Supply and delivery of 42mm Spigot	each	1.0		Rate Only
20.5.13.4		Installation for above only	each	1.0		Rate Only
20.5.13.5		Supply and delivery of 42mm Double Spigot	each	1.0		Rate Only
20.5.13.6		Installation for above only	each	1.0		Rate Only
20.5.13.7		Supply and delivery of 42mm Double Spigot	each	1.0		Rate Only
20.5.13.8		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Koelenhof

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.14		LED Luminaires				
20.5.14.1		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	10		Rate Only
20.5.14.2		Installation for above only	each	10		Rate Only
20.5.15.5		Supply and delivery of 103W with 173 lm/W nominal efficacy or higher (Beka or similar approved)	each	29		R -
20.5.15.6		Installation for above only	each	29		R -
20.5.15.7		Supply and delivery of 103W with 173 lm/W nominal efficacy or higher (Beka or similar approved)	each	1		Rate Only
20.5.15.8		Installation for above only	each	1		Rate Only
20.5.15.9		Supply and delivery of 174W with 176 lm/W nominal efficacy or higher (Beka or similar approved)	each	25		R -
20.5.15.10		Installation for above only	each	25		R -
20.5.15.11		Supply and delivery of 174W with 176 lm/W nominal efficacy or higher (Beka or similar approved)	each	1		Rate Only
20.5.15.12		Installation for above only	each	1		Rate Only
20.5.16		Kiosks				
20.5.16.1		Supply and delivery of 18 way 3CR12 Vandal Proof	Item	1		R -
20.5.16.2		Installation with concrete plinth for above only	Item	1		R -
20.5.16.3		Supply and delivery of Day/Night Switch	Item	1		Rate only
20.5.16.4		Installation of Day/Night Switch	Item	1		Rate only
20.5.17		Old Equipment / Materials Removal				
20.5.17.1		Overhead Cable Removal	m	10.0		Rate Only
20.5.17.2		Underground cable Removal	m	10.0		Rate Only
20.5.17.3		Delivery to Municipal Store of above only	each	1.0		Rate Only
20.5.17.4		Removal of old pole, luminaire, spigot and bracket	each	1.0		Rate Only
20.5.17.5		Delivery to Stellenbosch Municipal Store for above only	each	1.0		Rate Only
20.5.17.6		Removal of old pole, luminaire, spigot and bracket	each	1.0		Rate Only
20.5.17.7		Delivery to Stellenbosch Municipal Store for above only	each	1.0		Rate Only
20.5.17.8		Disposal of old HPS Luminaires in accordance with the	per 25	1.0		R -
20.5.17.9		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client:	per 25	1.0		Rate Only
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Koelenhof

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.18		Excavations: Excavate 0.7m deep x 0.6m wide, backfill and compact for cables				
20.5.18.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	294	R	-
20.5.18.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	147	R	-
20.5.18.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	147	R	-
20.5.18.4		Import, install and compaction of bedding materials to/on site	m ³	294	R	-
20.5.18.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	294	R	-
20.5.17.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	588	R	-
20.5.18		Excavate 2m deep x 1m wide, backfill and compact for poles (Option 1 of 2)				
20.5.18.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	25	R	-
20.5.18.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	12	R	-
20.5.18.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	12	R	-
20.5.18.4		Import, install and compaction of bedding materials to/on site	m ³	26	R	-
20.5.18.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	26	R	-
		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	50	R	-
20.5.19		Drilling (Alternative option to excavation for poles- Option 2 of 2)				
20.5.19.1		"Drilling of single pole hole to 2.0m depth in "soft" soil	each	13.0	R	-
20.5.19.2		"Drilling of single pole hole to 2.0m depth in "intermediate" soil	each	6.0	R	-
20.5.19.2		"Drilling of single pole hole to 2.0m depth in "hard" soil	each	6.0	R	-
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: Traffic Light Intersection Koelenhof

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
						R -
20.5.21		Auxiliary installation requirements: Directional boring: (Note that these items will be subject to coordination with, and approval by the engineering representative, and the right of the engineering representative is reserved to either include or exclude the following items as and when required throughout the duration of the project)				
20.5.21.1		0m to less than 5m directional boring in length	ea	1		Rate only
20.5.21.2		5m to 7m directional boring in length	ea	1		Rate only
20.5.21.3		Greater than 7m and up to 10m directional in boring	ea	1		Rate only
20.5.21.4		Boring rig setup at specific drilling site location(s)	ea	1		Rate only
20.5.21.5		0m to less than 5m directional boring in length	ea	1		Rate only
20.5.21.6		5m to 7m directional boring in length	ea	1		Rate only
20.5.21.7		Greater than 7m and up to 10m directional boring in length	ea	1		Rate only
20.5.21.8		Greater than 10m and up to 15m directional boring in length	ea	1		Rate only
20.5.21.9		Greater than 15m and up to 20m directional boring in length	ea	1		Rate only
20.5.21.10		Greater than 20m and up to 30m directional boring in length	ea	1		Rate only
20.5.21.11		Boring rig setup at specific drilling site location(s)	ea	1		Rate only
Total Carried Forward To Summary						R -



Stellenbosch Municipality Streetlights: MR177 km 29.78 to km 32.25

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		PROVINCIAL ROAD MR177 KM 29.78...				
20.5.2		Cable				
20.5.2.1		2.5mm ² x 3-core thermal uv resistant silicone cable	m	1 530.0	R	-
20.5.2.2		Installation for above only	m	1 530.0	R	-
20.5.2.3		Terminations for 2.5mm ² silicone cable (Including supply all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	306.0	R	-
20.5.2.4		Installation for above only	each	306.0	R	-
20.5.2.5		Terminations for 2.5mm ² silicone cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0	Rate Only	
20.5.2.6		Installation for above only	each	2.0	Rate Only	
20.5.3		25mm² x 4-core Alu ABC LV cable				
20.5.3.1		Supply and delivery only	m	40.0	Rate Only	
20.5.3.2		Installation for above only	m	40.0	Rate Only	
20.5.3.3		Terminations for 25mm ² Alu ABC cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0	Rate Only	
20.5.4		25mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.4.1		Supply and delivery only	m	103.0	R	-
20.5.4.2		Installation for above only	m	103.0	R	-
20.5.4.3		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	12.0	R	-
20.5.4.4		Supply and delivery only	each	50.0	Rate Only	
20.5.4.5		Installation for above only	each	50.0	Rate Only	
20.5.4.6		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0	Rate Only	
Total Carried Forward To Next Page						R -



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: MR177 km 29.78 to km 32.25

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.5		35mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.5.1		Supply and delivery only	m	50.0		Rate Only
20.5.5.2		Installation for above only	m	50.0		Rate Only
20.5.5.3		Terminations for 35mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	2.0		Rate Only
20.5.6		50mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.6.1		Supply and delivery only	m	50.0		Rate Only
20.5.6.2		Installation for above only	m	50.0		Rate Only
20.5.6.3		Terminations for 50mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	2.0		Rate Only
20.5.7		70mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.7.1		Supply and delivery only	m	50.0		Rate Only
20.5.7.2		Installation for above only	m	50.0		Rate Only
20.5.7.3		Terminations for 70mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	2.0		Rate Only
20.5.8		Anti Vandal System Implementations				
		Concrete Pole Support Anti Vandalism of Cables on metal, concrete and fibre glass poles				
20.5.8.1		Supply and delivery of concrete structure	each	12.0		R -
20.5.8.2		Installation for above only	each	12.0		R -
20.5.8.3		Supply and delivery of concrete structure	each	1.0		Rate Only
20.5.8.4		Installation for above only	each	1.0		Rate Only
		Galvanised 2.4m Steel Pipe Anti Vandalism of Cables on Wooden Poles				
20.5.8.5		Supply and delivery of pipe	each	1.0		Rate Only
20.5.8.6		Installation for above only	each	1.0		Rate Only
20.5.9		Galvanised Steel Streetlight Poles 11m				
20.5.9.1		Supply and delivery of pole	each	1.0		Rate Only
20.5.9.2		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: MR177 km 29.78 to km 32.25

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.10		Concrete Streetlight Poles 9m				
20.5.10.1		Supply and delivery of pole	each	4.0	R	-
20.5.10.2		Installation for above only	each	4.0	R	-
20.5.10.3		Supply and delivery of pole	each	1.0	Rate Only	
20.5.10.4		Installation for above only	each	1.0	Rate Only	
20.5.11		Mounting Arms				
20.5.11.1		Supply and delivery of 1.5m single caved light mounting arm	each	3.0	R	-
20.5.11.2		Installation for above only	each	3.0	R	-
20.5.11.3		Supply and delivery of 1.5m single caved light mounting arm	each	1.0	Rate Only	
20.5.11.4		Installation for above only	each	1.0	Rate Only	
20.5.11.5		Supply and delivery of 2m single caved light mounting arm	each	1.0	Rate Only	
20.5.11.6		Installation for above only	each	1.0	Rate Only	
20.5.11.7		Supply and delivery of 2m single caved light mounting arm	each	1.0	Rate Only	
20.5.11.8		Installation for above only	each	1.0	Rate Only	
20.5.11.9		Supply and delivery of 1.5m double caved light	each	1.0	Rate Only	
20.5.11.10		Installation for above only	each	1.0	Rate Only	
20.5.11.11		Supply and delivery of 1.5m double caved light	each	1.0	Rate Only	
20.5.11.12		Installation for above only	each	1.0	Rate Only	
20.5.11.13		Supply and delivery of 2m double caved light mounting	each	1.0	R	-
20.5.11.14		Installation for above only	each	1.0	R	-
20.5.11.15		Supply and delivery of 2m double caved light mounting	each	1.0	Rate Only	
20.5.11.16		Installation for above only	each	1.0	Rate Only	
20.5.12		Spigots				
20.5.12.1		Supply and delivery of 42mm Spigot	each	5.0	R	-
20.5.12.2		Installation for above only	each	5.0	R	-
20.5.12.2		Supply and delivery of 42mm Spigot	each	1.0	Rate Only	
20.5.12.2		Installation for above only	each	1.0	Rate Only	
Total Carried Forward To Next Page						R -



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: MR177 km 29.78 to km 32.25

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.13		LED Luminaires				
20.5.13.1		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	1		Rate Only
20.5.13.2		Installation for above only	each	1		Rate Only
20.5.13.5		Supply and delivery of 103W with 173 lm/W nominal efficacy or higher (Beka or similar approved)	each	149		R -
20.5.13.6		Installation for above only	each	149		R -
20.5.13.7		Supply and delivery of 103W with 173 lm/W nominal efficacy or higher (Beka or similar approved)	each	1		Rate Only
20.5.13.8		Installation for above only	each	1		Rate Only
20.5.13.9		Supply and delivery of 174W with 176 lm/W nominal efficacy or higher (Beka or similar approved)	each	6		R -
20.5.13.10		Installation for above only	each	6		R -
20.5.13.11		Supply and delivery of 174W with 176 lm/W nominal efficacy or higher (Beka or similar approved)	each	1		Rate Only
20.5.13.12		Installation for above only	each	1		Rate Only
20.5.14		Kiosks				
20.5.14.1		Supply and delivery of 18 way 3CR12 Vandal Proof	Item	4		R -
20.5.14.2		Installation with concrete plinth for above only	Item	4		R -
20.5.14.3		Supply and delivery of Day/Night Switch	Item	1		Rate only
20.5.14.4		Installation of Day/Night Switch	Item	1		Rate only
20.5.15		Old Equipment / Materials Removal				
20.5.15.1		Overhead Cable Removal	m	10.0		Rate Only
20.5.15.2		Underground cable Removal	m	10.0		Rate Only
20.5.15.3		Delivery to Municipal Store of above only	each	1.0		Rate Only
20.5.15.4		Removal of old pole, luminaire, spigot and bracket	each	1.0		Rate Only
20.5.15.5		Delivery to Stellenbosch Municipal Store for above only	each	1.0		Rate Only
20.5.15.6		Removal of old pole, luminaire, spigot and bracket	each	1.0		Rate Only
20.5.15.7		Delivery to Stellenbosch Municipal Store for above only	each	1.0		Rate Only
20.5.15.8		Disposal of old HPS Luminaires in accordance with the	per 25	1.0		R -
20.5.15.9		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client:	per 25	1.0		Rate Only
Total Carried Forward To Next Page						R -



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: MR177 km 29.78 to km 32.25

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.16		Excavations: Excavate 0.7m deep x 0.6m wide, backfill and compact for cables				
20.5.16.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	294	R	-
20.5.16.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	344	R	-
20.5.16.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	344	R	-
20.5.16.4		Import, install and compaction of bedding materials to/on site	m ³	172	R	-
20.5.16.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	172	R	-
20.5.16.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	688	R	-
20.5.17		Excavate 2m deep x 1m wide, backfill and compact for poles (Option 1 of 2)				
20.5.17.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	5	R	-
20.5.17.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	3	R	-
20.5.17.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	2	R	-
20.5.17.4		Import, install and compaction of bedding materials to/on site	m ³	3	R	-
20.5.17.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	2	R	-
20.5.17.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	10	R	-
20.5.18		Drilling (Alternative option to excavation for poles- Option 2 of 2)				
20.5.18.1		"Drilling of single pole hole to 2.0m depth in "soft" soil	each	3.0	R	-
20.5.18.2		"Drilling of single pole hole to 2.0m depth in "intermediate" soil	each	1.0	R	-
20.5.18.3		"Drilling of single pole hole to 2.0m depth in "hard" soil	each	1.0	R	-
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: MR177 km 29.78 to km 32.25

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
						R -
20.5.19		Auxiliary installation requirements: Directional boring: (Note that these items will be subject to coordination with, and approval by the engineering representative, and the right of the engineering representative is reserved to either include or exclude the following items as and when required throughout the duration of the project)				
20.5.19.1		0m to less than 5m directional boring in length	ea	1	Rate only	
20.5.19.2		5m to 7m directional boring in length	ea	1	Rate only	
20.5.19.3		Greater than 7m and up to 10m directional in boring	ea	1	Rate only	
20.5.19.4		Boring rig setup at specific drilling site location(s)	ea	1	Rate only	
20.5.19.5		0m to less than 5m directional boring in length	ea	1	Rate only	
20.5.19.6		5m to 7m directional boring in length	ea	1	Rate only	
20.5.19.7		Greater than 7m and up to 10m directional boring in length	ea	1	Rate only	
20.5.19.8		Greater than 10m and up to 15m directional boring in length	ea	1	Rate only	
20.5.19.9		Greater than 15m and up to 20m directional boring in length	ea	1	Rate only	
20.5.19.10		Greater than 20m and up to 30m directional boring in length	ea	1	Rate only	
20.5.19.11		Boring rig setup at specific drilling site location(s)	ea	1	Rate only	
Total Carried Forward To Summary						R -



Stellenbosch Municipality Streetlights: MR172/MR191 km 15.76

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
PROVINCIAL ROAD MR172/MR191 KM 15.76						
20.5.2		Cable				
20.5.2.1		2.5mm ² x 3-core thermal uv resistant silicone cable	m	350.0	R	-
20.5.2.2		Installation for above only	m	350.0	R	-
20.5.2.3		Terminations for 2,5mm ² silicone cable (Including supply all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	70.0	R	-
20.5.2.4		Installation for above only	each	70.0	R	-
20.5.2.5		Terminations for 2,5mm ² silicone cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	2.0	Rate Only	
20.5.2.6		Installation for above only	each	2.0	Rate Only	
20.5.3		25mm² x 4-core Alu ABC LV cable				
20.5.3.1		Supply and delivery only	m	40.0	Rate Only	
20.5.3.2		Installation for above only	m	40.0	Rate Only	
20.5.3.3		Terminations for 25mm ² Alu ABC cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	2.0	Rate Only	
20.5.4		25mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.4.1		Supply and delivery only	m	911.0	R	-
20.5.4.2		Installation for above only	m	911.0	R	-
20.5.4.3		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	72.0	R	-
20.5.4.4		Supply and delivery only	each	72.0	R	-
20.5.4.5		Installation for above only	each	72.0	R	-
20.5.4.6		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional)	each	2.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: MR172/MR191 km 15.76

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.5		35mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.5.1		Supply and delivery only	m	50.0		Rate Only
20.5.5.2		Installation for above only	m	50.0		Rate Only
20.5.5.3		Terminations for 35mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.6		50mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.6.1		Supply and delivery only	m	50.0		Rate Only
20.5.6.2		Installation for above only	m	50.0		Rate Only
20.5.6.3		Terminations for 50mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.7		70mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.7.1		Supply and delivery only	m	50.0		Rate Only
20.5.7.2		Installation for above only	m	50.0		Rate Only
20.5.7.3		Terminations for 70mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.8		Anti Vandal System Implementations				
		Concrete Pole Support Anti Vandalism of Cables on metal, concrete and fibre glass poles				
20.5.8.1		Supply and delivery of concrete structure	each	5.0	R	-
20.5.8.2		Installation for above only	each	5.0	R	-
20.5.8.3		Supply and delivery of concrete structure	each	1.0		Rate Only
20.5.8.4		Installation for above only	each	1.0		Rate Only
		Galvanised 2.4m Steel Pipe Anti Vandalism of Cables on Wooden Poles				
20.5.8.5		Supply and delivery of pipe	each	1.0		Rate Only
20.5.8.6		Installation for above only	each	1.0		Rate Only
20.5.9		Galvanised Steel Streetlight Poles 11m				
20.5.9.1		Supply and delivery of pole	each	5.0	R	-
20.5.9.2		Installation for above only	each	5.0	R	-
20.5.9.3		Supply and delivery of pole	each	1.0		Rate Only
20.5.9.4		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: MR172/MR191 km 15.76

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.10		Galvanised Steel Streetlight Poles 14m				
20.5.10.1		Supply and delivery of pole	each	32.0	R	-
20.5.10.2		Installation for above only	each	32.0	R	-
20.5.10.3		Supply and delivery of pole	each	1.0	Rate Only	
20.5.10.4		Installation for above only	each	1.0	Rate Only	
20.5.11		Mounting Arms				
20.5.11.1		Supply and delivery of 1.5m single caved light mounting arm	each	1.0	Rate Only	
20.5.11.2		Installation for above only	each	1.0	Rate Only	
20.5.11.3		Supply and delivery of 1.5m single caved light mounting arm	each	1.0	Rate Only	
20.5.11.4		Installation for above only	each	1.0	Rate Only	
20.5.11.5		Supply and delivery of 2m single caved light mounting arm	each	1.0	Rate Only	
20.5.11.6		Installation for above only	each	1.0	Rate Only	
20.5.11.7		Supply and delivery of 2m single caved light mounting arm	each	1.0	Rate Only	
20.5.11.8		Installation for above only	each	1.0	Rate Only	
20.5.11.		Supply and delivery of light mounting arm 300mm Ø	each	37.0	R	-
20.5.11.10		Installation for above only	each	37.0	R	-
20.5.12		Spigots				
20.5.12.1		Supply and delivery of 42mm Spigot	each	37.0	R	-
20.5.12.2		Installation for above only	each	37.0	R	-
20.5.12.2		Supply and delivery of 42mm Spigot	each	1.0	Rate Only	
20.5.12.2		Installation for above only	each	1.0	Rate Only	
Total Carried Forward To Next Page						R -



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: MR172/MR191 km 15.76

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.13		LED Luminaires				
20.5.13.1		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	16	R	-
20.5.13.2		Installation for above only	each	16	R	-
20.5.13.3		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.13.4		Installation for above only	each	1	Rate Only	
20.5.13.5		Supply and delivery of 103W with 173 lm/W nominal efficacy or higher (Beka or similar approved)	each	21	R	-
20.5.13.6		Installation for above only	each	21	R	-
20.5.13.7		Supply and delivery of 103W with 173 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.13.8		Installation for above only	each	1	Rate Only	
20.5.13.9		Supply and delivery of 174W with 176 lm/W nominal efficacy or higher (Beka or similar approved)	each	6	R	-
20.5.13.10		Installation for above only	each	6	R	-
20.5.13.11		Supply and delivery of 174W with 176 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.13.12		Installation for above only	each	1	Rate Only	
20.5.14		Kiosks				
20.5.14.1		Supply and delivery of 18 way 3CR12 Vandal Proof Pole Mounted Kiosk, fully and completely populated as per Stellenbosch Municipality Specification	Item	4	R	-
20.5.14.2		Installation with concrete plinth for above only	Item	4	R	-
20.5.14.3		Supply and delivery of Day/Night Switch	Item	1	Rate only	
20.5.14.4		Installation of Day/Night Switch	Item	1	Rate only	
20.5.15		Old Equipment / Materials Removal				
20.5.15.1		Overhead Cable Removal	m	10.0	Rate Only	
20.5.15.2		Underground cable Removal	m	10.0	Rate Only	
20.5.15.3		Delivery to Municipal Store of above only	each	1.0	Rate Only	
20.5.15.4		Removal of old pole, luminaire, spigot and bracket	each	1.0	Rate Only	
20.5.15.5		Delivery to Stellenbosch Municipal Store for above only	each	1.0	Rate Only	
20.5.15.6		Removal of old pole, luminaire, spigot and bracket	each	1.0	Rate Only	
20.5.15.7		Delivery to Stellenbosch Municipal Store for above only	each	1.0	Rate Only	
20.5.15.8		Disposal of old HPS Luminaires in accordance with the	per 25	1.0	R	-
20.5.15.9		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client:	per 25	1.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: MR172/MR191 km 15.76

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.16		Excavations: Excavate 0.7m deep x 0.6m wide, backfill and compact for cables				
20.5.16.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	190	R	-
20.5.16.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	95	R	-
20.5.16.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	95	R	-
20.5.16.4		Import, install and compaction of bedding materials to/on site	m ³	190	R	-
20.5.16.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	190	R	-
20.5.16.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	380	R	-
20.5.17		Excavate 2m deep x 1m wide, backfill and compact for poles (Option 1 of 2)				
20.5.17.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	37	R	-
20.5.17.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	19	R	-
20.5.17.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	18	R	-
20.5.17.4		Import, install and compaction of bedding materials to/on site	m ³	37	R	-
20.5.17.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	37	R	-
20.5.17.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	74	R	-
20.5.18		Drilling (Alternative option to excavation for poles- Option 2 of 2)				
20.5.18.1		"Drilling of single pole hole to 2.0m depth in "soft" soil	each	9.0	R	-
20.5.18.2		"Drilling of single pole hole to 2.0m depth in "intermediate" soil	each	10.0	R	-
20.5.18.3		"Drilling of single pole hole to 2.0m depth in "hard" soil	each	18.0	R	-
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: MR172/MR191 km 15.76

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
						R -
20.5.19		Auxiliary installation requirements: Directional boring: (Note that these items will be subject to coordination with, and approval by the engineering representative, and the right of the engineering representative is reserved to either include or exclude the following items as and when required throughout the duration of the project)				
20.5.19.1		0m to less than 5m directional boring in length	ea	1		Rate only
20.5.19.2		5m to 7m directional boring in length	ea	1		Rate only
20.5.19.3		Greater than 7m and up to 10m directional in boring	ea	1		Rate only
20.5.19.4		Boring rig setup at specific drilling site location(s)	ea	1		Rate only
20.5.19.5		0m to less than 5m directional boring in length	ea	1		Rate only
20.5.19.6		5m to 7m directional boring in length	ea	1		Rate only
20.5.19.7		Greater than 7m and up to 10m directional boring in length	ea	1		Rate only
20.5.19.8		Greater than 10m and up to 15m directional boring in length	ea	1		Rate only
20.5.19.9		Greater than 15m and up to 20m directional boring in length	ea	1		Rate only
20.5.19.10		Greater than 20m and up to 30m directional boring in length	ea	1		Rate only
20.5.19.11		Boring rig setup at specific drilling site location(s)	ea	1		Rate only
Total Carried Forward To Summary						R -



Stellenbosch Municipality Streetlights: MR187 km 13.00 to km 14.71

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		PROVINCIAL ROAD MR187 km 13.00 ...				
20.5.2		Cable				
20.5.2.1		2.5mm ² x 3-core thermal uv resistant silicone cable	m	390.0	R	-
20.5.2.2		Installation for above only	m	390.0	R	-
20.5.2.3		Terminations for 2.5mm ² silicone cable (Including supply all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	78.0	R	-
20.5.2.4		Installation for above only	each	78.0	R	-
20.5.2.5		Terminations for 2.5mm ² silicone cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0	Rate Only	
20.5.2.6		Installation for above only	each	2.0	Rate Only	
20.5.3		25mm² x 4-core Alu ABC LV cable				
20.5.3.1		Supply and delivery only	m	40.0	Rate Only	
20.5.3.2		Installation for above only	m	40.0	Rate Only	
20.5.3.3		Terminations for 25mm ² Alu ABC cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0	Rate Only	
20.5.4		25mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.4.1		Supply and delivery only	m	1 894.0	R	-
20.5.4.2		Installation for above only	m	1 894.0	R	-
20.5.4.3		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	86.0	R	-
20.5.4.4		Supply and delivery only	each	86.0	R	-
20.5.4.5		Installation for above only	each	86.0	R	-
20.5.4.6		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: MR187 km 13.00 to km 14.71

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.5		35mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.5.1		Supply and delivery only	m	50.0		Rate Only
20.5.5.2		Installation for above only	m	50.0		Rate Only
20.5.5.3		Terminations for 35mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.6		50mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.6.1		Supply and delivery only	m	50.0		Rate Only
20.5.6.2		Installation for above only	m	50.0		Rate Only
20.5.6.3		Terminations for 50mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.7		70mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.7.1		Supply and delivery only	m	50.0		Rate Only
20.5.7.2		Installation for above only	m	50.0		Rate Only
20.5.7.3		Terminations for 70mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.8		Anti Vandal System Implementations				
		Concrete Pole Support Anti Vandalism of Cables on metal, concrete and fibre glass poles				
20.5.8.1		Supply and delivery of concrete structure	each	14.0	R	-
20.5.8.2		Installation for above only	each	14.0	R	-
20.5.8.3		Supply and delivery of concrete structure	each	1.0		Rate Only
20.5.8.4		Installation for above only	each	1.0		Rate Only
		Galvanised 2.4m Steel Pipe Anti Vandalism of Cables on Wooden Poles				
20.5.8.5		Supply and delivery of pipe	each	1.0		Rate Only
20.5.8.6		Installation for above only	each	1.0		Rate Only
20.5.9		Galvanised Steel Streetlight Poles 11m				
20.5.9.1		Supply and delivery of pole	each	41.0	R	-
20.5.9.2		Installation for above only	each	41.0	R	-
20.5.9.3		Supply and delivery of pole	each	1.0		Rate Only
20.5.9.4		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: MR187 km 13.00 to km 14.71

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.10		Galvanised Steel Streetlight Poles 14m				
20.5.10.1		Supply and delivery of pole	each	1.0		Rate Only
20.5.10.2		Installation for above only	each	1.0		Rate Only
20.5.11		Mounting Arms				
20.5.11.1		Supply and delivery of 1.5m single caved light mounting arm	each	41.0	R	-
20.5.11.2		Installation for above only	each	41.0	R	-
20.5.11.3		Supply and delivery of 1.5m single caved light mounting arm	each	1.0		Rate Only
20.5.11.4		Installation for above only	each	1.0		Rate Only
20.5.11.5		Supply and delivery of 2m single caved light mounting arm	each	1.0		Rate Only
20.5.11.6		Installation for above only	each	1.0		Rate Only
20.5.11.7		Supply and delivery of 2m single caved light mounting arm	each	1.0		Rate Only
20.5.11.8		Installation for above only	each	1.0		Rate Only
20.5.11.		Supply and delivery of light mounting arm 300mm Ø*	each	37.0		Rate Only
20.5.11.10		Installation for above only	each	37.0		Rate Only
20.5.12		Spigots				
20.5.12.1		Supply and delivery of 42mm Spigot	each	1.0		Rate Only
20.5.12.2		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: MR187 km 13.00 to km 14.71

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.13		LED Luminaires				
20.5.13.1		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	5	R	-
20.5.13.2		Installation for above only	each	5	R	-
20.5.13.3		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.13.4		Installation for above only	each	1	Rate Only	
20.5.13.5		Supply and delivery of 103W with 173 lm/W nominal efficacy or higher (Beka or similar approved)	each	49	R	-
20.5.13.6		Installation for above only	each	49	R	-
20.5.13.7		Supply and delivery of 103W with 173 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.13.8		Installation for above only	each	1	Rate Only	
20.5.13.9		Supply and delivery of 174W with 176 lm/W nominal efficacy or higher (Beka or similar approved)	each	1	Rate Only	
20.5.13.10		Installation for above only	each	1	Rate Only	
20.5.14		Kiosks				
20.5.14.1		Supply and delivery of 18 way 3CR12 Vandal Proof Pole Mounted Kiosk, fully and completely populated as per Stellenbosch Municipality Specification	Item	2	R	-
20.5.14.2		Installation with concrete plinth for above only	Item	2	R	-
20.5.14.3		Supply and delivery of Day/Night Switch	Item	1	Rate only	
20.5.14.4		Installation of Day/Night Switch	Item	1	Rate only	
20.5.15		Old Equipment / Materials Removal				
20.5.15.1		Overhead Cable Removal	m	10.0	Rate Only	
20.5.15.2		Underground cable Removal	m	10.0	Rate Only	
20.5.15.3		Delivery to Municipal Store of above only	each	1.0	Rate Only	
20.5.15.4		Removal of old pole, luminaire, spigot and bracket	each	1.0	Rate Only	
20.5.15.5		Delivery to Stellenbosch Municipal Store for above only	each	1.0	Rate Only	
20.5.15.6		Removal of old pole, luminaire, spigot and bracket	each	1.0	Rate Only	
20.5.15.7		Delivery to Stellenbosch Municipal Store for above only	each	1.0	Rate Only	
20.5.15.8		Disposal of old HPS Luminaires in accordance with the	per 25	1.0	R	-
20.5.15.9		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client:	per 25	1.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: MR187 km 13.00 to km 14.71

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.16		Excavations: Excavate 0.7m deep x 0.6m wide, backfill and compact for cables				
20.5.16.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	398	R	-
20.5.16.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	199	R	-
20.5.16.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	199	R	-
20.5.16.4		Import, install and compaction of bedding materials to/on site	m ³	398	R	-
20.5.16.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	398	R	-
20.5.16.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	796	R	-
20.5.17		Excavate 2m deep x 1m wide, backfill and compact for poles (Option 1 of 2)				
20.5.17.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	41	R	-
20.5.17.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	21	R	-
20.5.17.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	20	R	-
20.5.17.4		Import, install and compaction of bedding materials to/on site	m ³	41	R	-
20.5.17.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	41	R	-
20.5.17.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	82	R	-
20.5.18		Drilling (Alternative option to excavation for poles- Option 2 of 2)				
20.5.18.1		"Drilling of single pole hole to 2.0m depth in "soft" soil	each	10.0	R	-
20.5.18.2		"Drilling of single pole hole to 2.0m depth in "intermediate" soil	each	11.0	R	-
20.5.18.3		"Drilling of single pole hole to 2.0m depth in "hard" soil	each	20.0	R	-
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: MR187 km 13.00 to km 14.71

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
						R -
20.5.19		Auxiliary installation requirements: Directional boring: (Note that these items will be subject to coordination with, and approval by the engineering representative, and the right of the engineering representative is reserved to either include or exclude the following items as and when required throughout the duration of the project)				
20.5.19.1		0m to less than 5m directional boring in length	ea	1	Rate only	
20.5.19.2		5m to 7m directional boring in length	ea	1	Rate only	
20.5.19.3		Greater than 7m and up to 10m directional in boring	ea	1	Rate only	
20.5.19.4		Boring rig setup at specific drilling site location(s)	ea	1	Rate only	
20.5.19.5		0m to less than 5m directional boring in length	ea	1	Rate only	
20.5.19.6		5m to 7m directional boring in length	ea	1	Rate only	
20.5.19.7		Greater than 7m and up to 10m directional boring in length	ea	1	Rate only	
20.5.19.8		Greater than 10m and up to 15m directional boring in length	ea	1	Rate only	
20.5.19.9		Greater than 15m and up to 20m directional boring in length	ea	1	Rate only	
20.5.19.10		Greater than 20m and up to 30m directional boring in length	ea	1	Rate only	
20.5.19.11		Boring rig setup at specific drilling site location(s)	ea	1	Rate only	
Total Carried Forward To Summary						R -



Stellenbosch Municipality Streetlights: MR172 km 10.49 to km 13.34

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		PROVINCIAL ROAD MR172 km 10.49 ...				
20.5.2		Cable				
20.5.2.1		2.5mm ² x 3-core thermal uv resistant silicone cable	m	1 296.0	R	-
20.5.2.2		Installation for above only	m	1 296.0	R	-
20.5.2.3		Terminations for 2,5mm ² silicone cable (Including supply all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	288.0	R	-
20.5.2.4		Installation for above only	each	288.0	R	-
20.5.2.5		Terminations for 2,5mm ² silicone cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0	Rate Only	
20.5.2.6		Installation for above only	each	2.0	Rate Only	
20.5.3		25mm² x 4-core Alu ABC LV cable				
20.5.3.1		Supply and delivery only	m	40.0	Rate Only	
20.5.3.2		Installation for above only	m	40.0	Rate Only	
20.5.3.3		Terminations for 25mm ² Alu ABC cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0	Rate Only	
20.5.4		25mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.4.1		Supply and delivery only	m	107.0	R	-
20.5.4.2		Installation for above only	m	107.0	R	-
20.5.4.3		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	80.0	R	-
20.5.4.4		Supply and delivery only	each	80.0	R	-
20.5.4.5		Installation for above only	each	80.0	R	-
20.5.4.6		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0	Rate Only	
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: MR172 km 10.49 to km 13.34

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.5		35mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.5.1		Supply and delivery only	m	50.0		Rate Only
20.5.5.2		Installation for above only	m	50.0		Rate Only
20.5.5.3		Terminations for 35mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.6		50mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.6.1		Supply and delivery only	m	50.0		Rate Only
20.5.6.2		Installation for above only	m	50.0		Rate Only
20.5.6.3		Terminations for 50mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.7		70mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.7.1		Supply and delivery only	m	50.0		Rate Only
20.5.7.2		Installation for above only	m	50.0		Rate Only
20.5.7.3		Terminations for 70mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.8		Anti Vandal System Implementations				
		Concrete Pole Support Anti Vandalism of Cables on metal, concrete and fibre glass poles				
20.5.8.1		Supply and delivery of concrete structure	each	14.0		R -
20.5.8.2		Installation for above only	each	14.0		R -
20.5.8.3		Supply and delivery of concrete structure	each	1.0		Rate Only
20.5.8.4		Installation for above only	each	1.0		Rate Only
		Galvanised 2.4m Steel Pipe Anti Vandalism of Cables on Wooden Poles				
20.5.8.5		Supply and delivery of pipe	each	1.0		Rate Only
20.5.8.6		Installation for above only	each	1.0		Rate Only
20.5.9		Galvanised Steel Streetlight Poles 11m				
20.5.9.1		Supply and delivery of pole (note special pole to supplied, and as per existing, to be visually identical, and similar in quality)	each	62.0		R -
20.5.9.2		Installation for above only	each	62.0		R -
20.5.9.3		Supply and delivery of pole (note special pole to supplied, and as per existing, to be visually identical in design and length, and similar in quality)	each	1.0		Rate Only
20.5.9.4		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: MR172 km 10.49 to km 13.34

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.10		Galvanised Steel Streetlight Poles 14m				
20.5.10.1		Supply and delivery of pole	each	1.0		Rate Only
20.5.10.2		Installation for above only	each	1.0		Rate Only
20.5.11		Mounting Arms				
20.5.11.1		Supply and delivery of single light mounting arm 0.5m Ø identical to existing	each	62.0	R	-
20.5.11.2		Installation for above only	each	62.0	R	-
20.5.11.3		Supply and delivery of single light mounting arm 0.5m Ø identical to existing	each	1.0		Rate Only
20.5.11.4		Installation for above only	each	1.0		Rate Only
20.5.11.5		Supply and delivery of 2m single caved light mounting arm	each	1.0		Rate Only
20.5.11.6		Installation for above only	each	1.0		Rate Only
20.5.11.7		Supply and delivery of 2m single caved light mounting arm	each	1.0		Rate Only
20.5.11.8		Installation for above only	each	1.0		Rate Only
20.5.11.		Supply and delivery of light mounting arm 300mm Ø	each	1.0		Rate Only
20.5.11.10		Installation for above only	each	1.0		Rate Only
20.5.12		Spigots				
20.5.12.1		Supply and delivery of 42mm Spigot	each	1.0		Rate Only
20.5.12.2		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: MR172 km 10.49 to km 13.34

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.13		LED Luminaires				
20.5.13.1		Supply and delivery of 76W Heritage Type Lamp 155lm/W Nominal Efficacy or higher (Beka Albany or similar approved with identical appearance)	each	62		R -
20.5.13.2		Installation for above only	each	62		R -
20.5.13.3		Supply and delivery of 76W Heritage Type Lamp 155lm/W Nominal Efficacy or higher (Beka Albany or similar approved with identical appearance)	each	1		Rate Only
20.5.13.4		Installation for above only	each	1		Rate Only
20.5.13.5		Supply and delivery of 76W with 164 lm/W nominal efficacy or higher (Beka or similar approved)	each	1		Rate Only
20.5.13.6		Installation for above only	each	1		Rate Only
20.5.14		Kiosks				
20.5.14.1		Supply and delivery of 18 way 3CR12 Vandal Proof Pole Mounted Kiosk, fully and completely populated as per Stellenbosch Municipality Specification	Item	3		R -
20.5.14.2		Installation with concrete plinth for above only	Item	3		R -
20.5.14.3		Supply and delivery of 18 way Poly Kiosk, populated as per Stellenbosch Municipality Specification		1		Rate only
20.5.14.4		Installation with concrete plinth for above only		1		Rate only
20.5.14.3		Supply and delivery of Day/Night Switch	Item	1		Rate only
20.5.14.4		Installation of Day/Night Switch	Item	1		Rate only
20.5.15		Old Equipment / Materials Removal				
20.5.15.1		Overhead Cable Removal	m	10.0		Rate Only
20.5.15.2		Underground cable Removal	m	10.0		Rate Only
20.5.15.3		Delivery to Municipal Store of above only	each	1.0		Rate Only
20.5.15.4		Removal of old pole, luminaire, spigot and bracket	each	1.0		Rate Only
20.5.15.5		Delivery to Stellenbosch Municipal Store for above only	each	1.0		Rate Only
20.5.15.6		Removal of old pole, luminaire, spigot and bracket	each	1.0		Rate Only
20.5.15.7		Delivery to Stellenbosch Municipal Store for above only	each	1.0		Rate Only
20.5.15.8		Disposal of old HPS Luminaires in accordance with the	per 25	1.0		R -
20.5.15.9		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client:	per 25	1.0		Rate Only
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: MR172 km 10.49 to km 13.34

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.16		Excavations: Excavate 0.7m deep x 0.6m wide, backfill and compact for cables				
20.5.16.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	24	R	-
20.5.16.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	12	R	-
20.5.16.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	12	R	-
20.5.16.4		Import, install and compaction of bedding materials to/on site	m ³	24	R	-
20.5.16.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	24	R	-
20.5.16.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	48	R	-
20.5.17		Excavate 2m deep x 1m wide, backfill and compact for poles (Option 1 of 2)				
20.5.17.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	62	R	-
20.5.17.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	31	R	-
20.5.17.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	31	R	-
20.5.17.4		Import, install and compaction of bedding materials to/on site	m ³	62	R	-
20.5.17.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	62	R	-
20.5.17.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	124	R	-
20.5.18		Drilling (Alternative option to excavation for poles- Option 2 of 2)				
20.5.18.1		"Drilling of single pole hole to 2.0m depth in "soft" soil	each	15.0	R	-
20.5.18.2		"Drilling of single pole hole to 2.0m depth in "intermediate" soil	each	16.0	R	-
20.5.18.3		"Drilling of single pole hole to 2.0m depth in "hard" soil	each	31.0	R	-
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: MR172 km 10.49 to km 13.34

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
						R -
20.5.19		Auxiliary installation requirements: Directional boring: (Note that these items will be subject to coordination with, and approval by the engineering representative, and the right of the engineering representative is reserved to either include or exclude the following items as and when required throughout the duration of the project)				
20.5.19.1		0m to less than 5m directional boring in length	ea	1	Rate only	
20.5.19.2		5m to 7m directional boring in length	ea	1	Rate only	
20.5.19.3		Greater than 7m and up to 10m directional in boring	ea	1	Rate only	
20.5.19.4		Boring rig setup at specific drilling site location(s)	ea	1	Rate only	
20.5.19.5		0m to less than 5m directional boring in length	ea	1	Rate only	
20.5.19.6		5m to 7m directional boring in length	ea	1	Rate only	
20.5.19.7		Greater than 7m and up to 10m directional boring in length	ea	1	Rate only	
20.5.19.8		Greater than 10m and up to 15m directional boring in length	ea	1	Rate only	
20.5.19.9		Greater than 15m and up to 20m directional boring in length	ea	1	Rate only	
20.5.19.10		Greater than 20m and up to 30m directional boring in length	ea	1	Rate only	
20.5.19.11		Boring rig setup at specific drilling site location(s)	ea	1	Rate only	
Total Carried Forward To Summary						R -



Stellenbosch Municipality Streetlights: MR191 km 19.64 to km 23.71

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
		PROVINCIAL ROAD MR191 km 19.64 ...				
20.5.2		Cable				
20.5.2.1		2.5mm ² x 3-core thermal uv resistant silicone cable	m	1 490.0	R	-
20.5.2.2		Installation for above only	m	1 490.0	R	-
20.5.2.3		Terminations for 2.5mm ² silicone cable (Including supply all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	290.0	R	-
20.5.2.4		Installation for above only	each	290.0	R	-
20.5.2.5		Terminations for 2.5mm ² silicone cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0	Rate Only	
20.5.2.6		Installation for above only	each	2.0	Rate Only	
20.5.3		25mm² x 4-core Alu ABC LV cable				
20.5.3.1		Supply and delivery only	m	40.0	Rate Only	
20.5.3.2		Installation for above only	m	40.0	Rate Only	
20.5.3.3		Terminations for 25mm ² Alu ABC cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0	Rate Only	
20.5.4		25mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.4.1		Supply and delivery only	m	490.0	R	-
20.5.4.2		Installation for above only	m	490.0	R	-
20.5.4.3		Supply and delivery only	m	40.0	Rate Only	
20.5.4.4		Supply and delivery only	m	40.0	Rate Only	
20.5.4.5		Terminations for 25mm ² cable (Including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	482.0	R	-
20.5.4.6		Installation for above only	each	482.0	R	-
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: MR191 km 19.64 to km 23.71

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.5		35mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.5.1		Supply and delivery only	m	50.0		Rate Only
20.5.5.2		Installation for above only	m	50.0		Rate Only
20.5.5.3		Terminations for 35mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.6		50mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.6.1		Supply and delivery only	m	50.0		Rate Only
20.5.6.2		Installation for above only	m	50.0		Rate Only
20.5.6.3		Terminations for 50mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.7		70mm² x 4-core Alu PVC/SWA/PVC LV cable				
20.5.7.1		Supply and delivery only	m	50.0		Rate Only
20.5.7.2		Installation for above only	m	50.0		Rate Only
20.5.7.3		Terminations for 70mm ² cable (including supply of all consumables (cable glands, lugs, ferrules, tapes, heat shrink, etc.) required to make the works complete (functional))	each	2.0		Rate Only
20.5.8		Anti Vandal System Implementations				
		Concrete Pole Support Anti Vandalism of Cables on metal, concrete and fibre glass poles				
20.5.8.1		Supply and delivery of concrete structure	each	14.0		R -
20.5.8.2		Installation for above only	each	14.0		R -
20.5.8.3		Supply and delivery of concrete structure	each	1.0		Rate Only
20.5.8.4		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: MR191 km 19.64 to km 23.71

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						Rate Only
		Galvanised 2.4m Steel Pipe Anti Vandalism of Cables on Wooden Poles				
20.5.8.5		Supply and delivery of pipe	each	1.0		Rate Only
20.5.8.6		Installation for above only	each	1.0		Rate Only
20.5.9		Fibre Glass Pole (11-12m)				
20.5.9.1		Supply and delivery of pole	each	41.0	R	-
20.5.9.2		Installation for above only	each	41.0	R	-
20.5.9.3		Supply and delivery of pole	each	1.0		Rate Only
20.5.9.4		Installation for above only	each	1.0		Rate Only
20.5.10		Fibre Glass Pole (14m)				
20.5.10.1		Supply and delivery of pole	each	7.0	R	-
20.5.10.2		Installation for above only	each	7.0	R	-
20.5.10.3		Supply and delivery of pole	each	1.0		Rate Only
20.5.10.4		Installation for above only	each	1.0		Rate Only
20.5.11		Galvanised Steel Streetlight Poles 11m				
20.5.11.1		Supply and delivery of pole (note special pole to supplied, and as per existing, to be visually identical, and similar in quality)	each	1.0		Rate Only
20.5.11.2		Installation for above only	each	1.0		Rate Only
20.5.12		Galvanised Steel Streetlight Poles 14m				
20.5.12.1		Supply and delivery of pole (note special pole to supplied, and as per existing, to be visually identical, and similar in quality)	each	1.0		Rate Only
20.5.12.2		Installation for above only	each	1.0		Rate Only
20.5.13		Mounting Arms				
20.5.13.1		Supply and delivery of single light mounting arm 0.5m	each	1.0		Rate Only
20.5.13.2		Installation for above only	each	1.0		Rate Only
Total Carried Forward To Next Page						R -



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: MR191 km 19.64 to km 23.71

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.13.3		Supply and delivery of single light mounting arm 0.5m 0° identical to existing	each	1.0		Rate Only
20.5.13.4		Installation for above only	each	1.0		Rate Only
20.5.13.5		Supply and delivery of 2m single caved light mounting	each	1.0		Rate Only
20.5.13.6		Installation for above only	each	1.0		Rate Only
20.5.13.7		Supply and delivery of 2m single caved light mounting arm	each	1.0		Rate Only
20.5.13.8		Installation for above only	each	1.0		Rate Only
20.5.13.9		Supply and delivery of light mounting arm 300mm 0°	each	17.0		R -
20.5.13.10		Installation for above only	each	17.0		R -
20.5.14		Spigots				
20.5.14.1		Supply and delivery of 42mm Spigot	each	17.0		R -
20.5.14.2		Installation for above only	each	17.0		R -
20.5.15		LED Luminaires				
20.5.15.1		Supply and delivery of 131W with 154 lm/W Nominal	each	49		R -
20.5.15.2		Installation for above only	each	49		R -
20.5.15.3		Supply and delivery of 131W with 154 lm/W Nominal Efficacy or higher (Beka or similar approved)	each	1		Rate Only
20.5.15.4		Installation for above only	each	1		Rate Only
20.5.15.5		Supply and delivery of 174W with 176 lm/W Nominal Efficacy or higher (Beka or similar approved)	each	97		Rate Only
20.5.15.6		Installation for above only	each	97		Rate Only
20.5.16		Kiosks				
20.5.16.1		Supply and delivery of 18 way 3CR12 Vandal Proof	Item	1		R -
20.5.16.2		Installation with pole, digging etc. for above only	Item	1		R -
20.5.16.3		Supply and delivery of 18 way 3CR12 Vandal Proof		3		R -
20.5.16.4		Installation with concrete plinth for above only		3		R -
20.5.16.5		Supply and delivery of Day/Night Switch	Item	1		Rate only
20.5.16.6		Installation of Day/Night Switch	Item	1		Rate only
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: MR191 km 19.64 to km 23.71

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.17		Old Equipment / Materials Removal				
20.5.17.1		Overhead Cable Removal	m	10.0		Rate Only
20.5.17.2		Underground cable Removal	m	10.0		Rate Only
20.5.17.3		Delivery to Municipal Store of above only	each	1.0		Rate Only
20.5.17.4		Removal of old pole, luminaire, spigot and bracket	each	1.0		Rate Only
20.5.17.5		Delivery to Stellenbosch Municipal Store for above only	each	1.0		Rate Only
20.5.17.6		Removal of old pole, luminaire, spigot and bracket	each	1.0		Rate Only
20.5.17.7		Delivery to Stellenbosch Municipal Store for above only	each	1.0		Rate Only
20.5.17.8		Disposal of old HPS Luminaires in accordance with the NEMWA Act, and provision of the following to client: Disposal certificates, Record including origin (site & street name) luminaire type, wattage & quantities	per 25	1.0		R -
20.5.17.9		Disposal of old HPS Luminaires in accordance with the	per 25	1.0		Rate Only
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: MR191 km 19.64 to km 23.71

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION						
ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
Brought Forward						R -
20.5.18		Excavations: Excavate 0.7m deep x 0.6m wide, backfill and compact for cables				
20.5.18.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	58	R	-
20.5.18.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	29	R	-
20.5.18.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	29	R	-
20.5.18.4		Import, install and compaction of bedding materials to/on site	m ³	58	R	-
20.5.18.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	58	R	-
20.5.18.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	116	R	-
20.5.19		Excavate 2m deep x 1m wide, backfill and compact for poles (Option 1 of 2)				
20.5.19.1		Per cube meter (Provision for hard as per SANS 1200DB/1200LB)	m ³	17	R	-
20.5.19.2		Per cube meter (Provision for soft as per SANS 1200DB/1200LB)	m ³	9	R	-
20.5.19.3		Per cube meter (Provision for pickable soils as per SANS 1200DB/1200LB)	m ³	8	R	-
20.5.19.4		Import, install and compaction of bedding materials to/on site	m ³	17	R	-
20.5.19.5		Removal of bedding/rock materials from site to a suitable environmentally approved location <50km	m ³	17	R	-
20.5.19.6		Remedial/filling and compaction of cable trenches to specifications DDT-0854 and SANS 1200DB/1200LB	m ³	34	R	-
20.5.20		Drilling (Alternative option to excavation for poles- Option 2 of 2)				
20.5.20.1		"Drilling of single pole hole to 2.0m depth in "soft" soil	each	4.0	R	-
20.5.20.2		"Drilling of single pole hole to 2.0m depth in "intermediate" soil	each	4.0	R	-
20.5.20.3		"Drilling of single pole hole to 2.0m depth in "hard" soil	each	9.0	R	-
Total Carried Forward To Next Page						R -



Stellenbosch Municipality Streetlights: MR191 km 19.64 to km 23.71

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
						R -
20.5.21		Auxiliary installation requirements: Directional boring: (Note that these items will be subject to coordination with, and approval by the engineering representative, and the right of the engineering representative is reserved to either include or exclude the following items as and when required throughout the duration of the project)				
20.5.21.1		0m to less than 5m directional boring in length	ea	1		Rate only
20.5.21.2		5m to 7m directional boring in length	ea	1		Rate only
20.5.21.3		Greater than 7m and up to 10m directional in boring	ea	1		Rate only
20.5.21.4		Boring rig setup at specific drilling site location(s)	ea	1		Rate only
20.5.21.5		0m to less than 5m directional boring in length	ea	1		Rate only
20.5.21.6		5m to 7m directional boring in length	ea	1		Rate only
20.5.21.7		Greater than 7m and up to 10m directional boring in length	ea	1		Rate only
20.5.21.8		Greater than 10m and up to 15m directional boring in length	ea	1		Rate only
20.5.21.9		Greater than 15m and up to 20m directional boring in length	ea	1		Rate only
20.5.21.10		Greater than 20m and up to 30m directional boring in length	ea	1		Rate only
20.5.21.11		Boring rig setup at specific drilling site location(s)	ea	1		Rate only
Total Carried Forward To Summary						R -



STELLENBOSCH

STELLENBOSCH • PNIEL • FRANSCHHOEK

MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Stellenbosch Municipality Streetlights: Special Requirements

Schedule 20.5: Bill of Quantities

STREETLIGHTING INSTALLATION

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
20.5.2		SPECIAL REQUIREMENTS (EEDSM Project Fees) The Department of Mineral Resources and Energy, have provided a R 5 000 000.00 (of which already includes 15% VAT) funding allocation for the replacement of inefficient luminaire technologies. A percentage of this funding is to be utilised as indicated below, to be provided via the appointed contractor / winning bidder The percentages below is the value pertaining to the above mentioned R 5 000 000.00 which includes VAT				
20.5.2.1		Project Management & Administration: Funds to be used for the employ of graduates (max 4) for the duration of the project	%	5.0		
20.5.2.2		Establishment of Baseline & Business Plan: Funds to be used for the employ of a specialised energy manager for the project results	%	7.0		
20.5.2.3		Capacity Building & Training: Funds to be used for the upskilling of the Employer's Employees	%	1.0		
20.5.2.4		Energy Efficiency Awareness: Implementation of awareness raising plan and schedule covering targeted schools, community, SMME's and officials	%	1.0		
Total Carried Forward To Final Summary Sheet (including VAT)						R -



Stellenbosch Municipality Streetlights: Summary Costing Sheet

Schedule 20.5: Bill of Quantities

SUB TOTALS AND TOTAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
20.5.1		PRELIMINARY & GENERAL				
20.5.1.1		Preliminary & General Phase 1 of 3	Sum	1		R -
20.5.1.2		Preliminary & General Phase 2 of 3	Sum	1		R -
20.5.1.1		Preliminary & General Phase 3 of 3	Sum	1		R -
20.5.2		STREETLIGHT INSTALLATION (Phase 1 of 3)	Sum	1		
20.5.2.1		Village: Klapmuts Total	Sum	1		R -
20.5.2.2		Klapmuts Traffic Light Intersection Total	Sum	1		
20.5.2.3		Village: Jamestown Total	Sum	1		R -
20.5.2.4		Village: Raithby Total	Sum	1		R -
20.5.2.5		Annandale Traffic Light Intersection Total	Sum	1		R -
20.5.3		STREETLIGHT INSTALLATION (Phase 2 of 3)				
20.5.3.1		MR177 km 29.78 to km 32.25 Total	Sum	1		R -
20.5.3.2		Vlaeberg Traffic Light Intersection Total	Sum	1		R -
20.5.3.3		Lynedoch Traffic Light Intersection Total	Sum	1		R -
20.5.3.4		Polkadraai Traffic Light Intersection Total	Sum	1		R -
20.5.3.5		MR187 km 13.00 to km 14.71 Total	Sum	1		R -
20.5.3.6		Koelenhof Traffic Light Intersection Total	Sum	1		R -
20.5.4		STREETLIGHT INSTALLATION (Phase 3 of 3)	Sum	1		R -
20.5.4.1		Village: Lanquedoc Total	Sum	1		R -
20.5.4.2		Village: Kylemore Total	Sum	1		
20.5.4.3		Village: La Motte Total	Sum	1		R -
20.5.4.4		MR172/MR191 km 15.76 Total	Sum	1		R -
20.5.4.5		MR172 km 10.49 to km 13.34 Total	Sum	1		R -
20.5.4.6		MR191 km 19.64 to km 23.71 Total	Sum	1		R -
Preliminary & General Phase 1 Summary Total Carried Forward To Final Summary Sheet item 20.5.6.1						R -
Preliminary & General Phase 2 Summary Total Carried Forward To Final Summary Sheet item 20.5.6.2						R -
Preliminary & General Phase 3 Summary Total Carried Forward To Final Summary Sheet item 20.5.6.3						R -
Streetlight Installation Phase 1 Summary Total Carried Forward To Final Summary Sheet item 20.5.6.4						R -
Streetlight Installation Phase 2 Summary Total Carried Forward To Final Summary Sheet item 20.5.6.5						R -
Streetlight Installation Phase 3 Summary Total Carried Forward To Final Summary Sheet item 20.5.6.6						R -



Stellenbosch Municipality Streetlights: Final Summary Sheet

Schedule 20.5: Bill of Quantities

SUB TOTALS AND TOTAL

ITEM NO	PAYMENT	DESCRIPTION	UNIT	QTY	RATE	AMOUNT R
20.5.6		Final Summary Sheet				
20.5.6.1		Preliminary & General Summary Phase 1 (Excl. VAT)	Sum	1		R -
20.5.6.2		Preliminary & General Summary Phase 2 (Excl. VAT)	Sum	1		R -
20.5.6.3		Preliminary & General Summary Phase 3 (Excl. VAT)	Sum	1		R -
20.5.6.4		Streetlight Installation Summary Phase 1 (Excl. VAT)	Sum	1		R -
20.5.6.5		Streetlight Installation Summary Phase 2 (Excl. VAT)	Sum	1		R -
20.5.6.6		Streetlight Installation Summary Phase 3 (Excl. VAT)	Sum	1		R -
20.5.6.7		Subtotal #1 (Sum 20.5.6.1 to 20.5.6.6 Excl. VAT)	Sum	1		R -
20.5.6.8		Contingency Allowance (10% of 20.5.6.7 to be used as per engineering approvals)	%	10		R -
20.5.6.9		Subtotal #2 (20.5.6.7 + 20.5.6.8 Excl. VAT)	Sum	1		R -
20.5.6.10		CPA Allowance (15% of 20.5.6.9)	%	15		R -
20.5.6.11		Subtotal #3 (20.5.6.9 + 20.5.6.10)	Sum	1		R -
20.5.6.12		Value Added Tax (15% VAT from 20.5.6.11)	%	15		R -
20.5.6.13		Subtotal #4 (20.5.6.11 + 20.5.6.12)	Sum	1		R -
20.5.6.14		Special Requirements Summary Total (Incl. VAT) <i>Note that the total cost for this item excludes contingency and CPA allowance; but always included VAT throughout the BOQ</i>	Sum	1		R -
20.5.6.15		Total (20.5.6.13 + 20.5.6.14 Including VAT)	Sum	1		R -



20. PRE-QUALIFICATION SCORE SHEET

*** Proof of Contactable References is required, as indicated below, and must accompany each proposal, if not it will be regarded as non-responsive.**

Points, as indicated below, may be allocated to the following:

- Only those tenderers who satisfy the following **eligibility criteria** are eligible to submit tenders:
- a) Attendance of compulsory clarification meeting.
 - b) The tenderer is registered with the Construction Industry Development Board in an appropriate contractor grading designation.
 - c) The tenderer has demonstrated previous experience in projects of the same nature namely, projects involving UPGRADE OF STREETLIGHT INFRASTRUCTURE AND ASSOCIATED EQUIPMENT – at least 3 projects of this nature and budgetary magnitude, completed within the last 10 years, including project descriptions, values and reference letters from each respective client. Projects recorded, excluding reference letters, project values and of similar nature in works, will not be considered during the evaluation. Proof to be included with the submission.
 - d) The tenderer to list the following key personnel for the project (Also see under Special Conditions:
 - Suitably experienced Project Manager.(PR.CPM and / or PR. Tech Eng Registered)
 - Suitably Qualified Electrician as per OHS Act Requirements (NQF4/N3, min 3 years experience, regulation 1 & 2 passed, 3 phase wireman's license
 - Qualified and experienced rigging operators (NQF 4 or Higher with 3 years rigging experience and nationally recognized SHE training)
 - Site Agent with Wireman's Licence, and PR.CPM or PR.Tech Eng, minimum qualification
 - e) An acknowledgement letter that installations will be done to the Employers drawings in combination with the standards and requirements listed in the tender documentation.
 - f) Company profile and established nature:

Tenderers must submit proof of their company profile and registration to indicate establishment nature of the company. Only suppliers / companies with a minimum of 10 years or more experience in the repair and maintenance of Streetlighting Installation its associated works will be considered.

Plant and equipment available for the repair and maintenance of Streetlighting Installation and associated equipment.

A list of relevant major items of plant and equipment which the Tenderer and or sub supplier have immediately available, or access to by rental/hire (proof of letter of good standing with rental company must be submitted with the bid proposal) and which will be acquired for use in this contract should their tender is successful.

Complete the list as indicated in Schedule 22. (Plant and Equipment)

Failure to include this list will render a tender offer non-complaint.
 - g) Schedule of references.

It is compulsory that the schedule of Contactable references for the successful completion of similar projects of this nature be provided in this tender. This schedule must be completed in full and must accompany each proposal. Please complete the Schedule 24 (Schedule of Work Experience Of The Tenderer – Completed Contracts). Separate schedules may be attached with the returnable documents.
 - h) Bidders must submit at least one original reference letter written and signed by previous clients for each item(s) tendering for as confirmation that they have supplied such services previously, where the bidder have successfully completed a similar project of this nature. Failure to attach such reference letter(s) will lead to the disqualification of the bid.



STELLENBOSCH
STELLENBOSCH • PNIEL • FRANSCHHOEK
MUNISIPALITEIT • UMASIPALA • MUNICIPALITY

Only those tenderers who are registered with the CIDB, or are capable of being so prior to the evaluation of submissions, 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 6 **EP** class of construction work, are eligible to have their tenders evaluated.

Joint ventures are eligible to submit tenders provided that:

1. each member of the joint venture is registered with the CIDB.
2. the lead partner has a contractor grading designation in the 6 EP class of construction work; or higher, 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 6 EP class of construction work or a value determined in accordance with Regulation 25 (1B) or 25 (7A) of the Construction Industry Development Regulations.

SIGNATURE (Bidder)		FOR OFFICE USE ONLY:	
CAPACITY		Evaluated by	
NAME OF FIRM		Signature:	
NAME (PRINT)		Designation:	
DATE		Date:	



21. SCHEDULE OF PLANT AND EQUIPMENT

The following are lists of major items of relevant equipment that I/we **presently** own or lease and will have available for this contract or will acquire or hire for this contract if my / our tender is accepted.

DETAILS OF MAJOR EQUIPMENT THAT IS OWNED BY AND IMMEDIATELY AVAILABLE FOR THIS CONTRACT.			
QUANTITY	DESCRIPTION	SIZE	CAPACITY
	EG. 1 ton Pick Up Trucks		

Attach additional pages if more space is required.

DETAIL OF MAJOR EQUIPMENT THAT WILL BE HIRED, ORE ACQUIRED FOR THIS CONTRACT IF MY / OUR TENDER IS ACCEPTED.			
QUANTITY	DESCRIPTION,	SIZE	CAPACITY
	EG. Cherry Picker Hoist Truck		
	EG . Vertical / horizontal drilling machinery & equipment		

Attach additional pages if more space is required.

Number of sheets appended by the tenderer to this schedule (<i>If nil, enter NIL</i>)			
SIGNATURE		NAME (PRINT)	
CAPACITY		DATE	
NAME OF FIRM			



22. SCHEDULE OF SUBCONTRACTORS

I/we the tenderer, notify the Stellenbosch Municipality that it is our intention to employ the following Subcontractors for work in this contract.

SUBCONTRACTORS				
Category / Type	Subcontractor Name; Address; Contact Person; Tel. No.		Items of work (pay items) to be undertaken by the Subcontractor	Estimated cost of Work (Rand)
1.	Name of firm			
	Contact person			
	Tel No			
	Address			
2.	Name of firm			
	Contact person			
	Tel No			
	Address			
3.	Name of firm			
	Contact person			
	Tel No			
	Address			
4.	Name of firm			
	Contact person			
	Tel No			
	Address			
5.	Name of firm			
	Contact person			
	Tel No			
	Address			
Number of sheets appended by the tenderer to this schedule (<i>If nil, enter NIL</i>)				

Acceptance of this tender shall not be construed as approval of all or any of the listed subcontractors. Should any of the subcontractors not be approved subsequent to acceptance of the tender, this shall in no way invalidate this tender, and the tendered unit rates for the various items of work shall remain final and binding, even in the event of a subcontractor not listed above being approved by the Engineer.

SIGNATURE		NAME (PRINT)	
CAPACITY		DATE	
NAME OF FIRM			



23. SCHEDULE OF WORK EXPERIENCE OF THE TENDERER – CURRENT CONTRACTS

EMPLOYER (Name, Tel, Email)		NATURE OF WORK	VALUE OF WORK (INCL. VAT)	CONTRACT PERIOD
Company				From
Tel				
Contact Person				To
Email				
Company				From
Tel				
Contact Person				To
Company				
Company				From
Tel				
Contact Person				To
Email				
Company				From
Tel				
Contact Person				To
Email				
Company				From
Tel				
Contact Person				To
Email				
Company				From
Tel				
Contact Person				To
Email				
Company				From
Tel				
Contact Person				To
Email				

Attach additional pages if more space is required.

Number of sheets appended by the tenderer to this schedule (If nil, enter NIL)			
SIGNATURE		NAME (PRINT)	
CAPACITY		DATE	
NAME OF FIRM			



24. SCHEDULE OF WORK EXPERIENCE OF THE TENDERER – COMPLETED CONTRACTS

The following is a statement of similar work successfully executed by myself / ourselves:

EMPLOYER (Name, Tel, Fax, Email)		NATURE OF WORK	VALUE OF WORK (INCL. VAT)	CONTRACT PERIOD
Company				From
Tel				
Contact Person				To
Email				
Company				From
Tel				
Contact Person				To
Email				
Company				From
Tel				
Contact Person				To
Email				
Company				From
Tel				
Contact Person				To
Email				
Company				From
Tel				
Contact Person				To
Email				
Company				From
Tel				
Contact Person				To
Email				

Attach additional pages if more space is required.

Number of sheets appended by the tenderer to this schedule (If nil, enter NIL)	
--	--

SIGNATURE		NAME (PRINT)	
CAPACITY		DATE	
NAME OF FIRM			



25. CERTIFICATE OF REGISTRATION WITH CIDB

CIDB Contractor Registration Certificate

A Certificate of Contractors Registration issued by the Construction Industry Development Board (CIDB) shall be attached to this schedule.

Where a tenderer satisfies CIDB Contractor Grading designation requirements through joint venture formation, such tenderers must submit the Certificates of Contractor Registration in respect of each partner.

Number of sheets appended by the tenderer to this schedule (If nil, enter NIL)		
CRS Number:		

SIGNATURE		NAME (PRINT)	
CAPACITY		DATE	
NAME OF FIRM			



26. FORM OF OFFER AND ACCEPTANCE

NOTE:

1. This form must be completed in duplicate by both the successful bidder (Part 1) and the purchaser (Part 2). Both forms must be signed in the original so that the successful bidder and the purchaser will be in possession of originally signed contracts for their respective records.
2. NO correction fluid/tape may be used.
 - a. In the event of a mistake having been made, it shall be crossed out in ink and be accompanied by an initial at each and every alteration.
3. The Bidder **MUST** indicate whether he/she/the entity is a registered VAT Vendor or not.
 - a. In the case of the Bidder not being a registered VAT Vendor, both columns (amount/rate excluding AND including VAT) must reflect the same amount.

	INDICATE WITH AN 'X'							
Are you/is the firm a registered VAT Vendor	YES				NO			
If "YES", please provide VAT number								

1. OFFER

- 1.1. The Employer, identified in the Acceptance signature block, has solicited offers to enter into a contract in respect of the following works: **B/SM: "Insert Tender No."**
- 1.2. The tenderer, identified in the Offer signature block, has examined the draft contract as listed in the Acceptance section and agreed to provide this Offer.
- 1.3. By the representative of the Tenderer, deemed to be duly authorised, signing this part of this Form of Offer and Acceptance, the Tenderer offers to perform all of the obligations and liabilities of the **Employer** 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 VAT IS:	
In figures:	R
In words:	

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

Signature(s)			
Name(s)			
Capacity			
Name of tenderer:			
Name of witness:	<i>(Insert name and address of organisation)</i>	Date	
Signature of witness:			



2. ACCEPTANCE

- 2.1. By signing this part of this Form of Offer and Acceptance, the Employer identified below accepts the tenderer's Offer. In consideration thereof, the Employer shall pay the Contractor the amount due in accordance with the conditions of contract identified in the Contract Data. Acceptance of the tenderer's Offer shall form an agreement between the Employer and the tenderer upon the terms and conditions contained in this agreement and in the contract that is the subject of this agreement.
- 2.2. Deviations from and amendments to the documents listed in the Tender Data and any addenda thereto listed in the Returnable 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 Form of Offer and Acceptance. No amendments to or deviations from said documents are valid unless contained in this Schedule.
- 2.3. 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.

Signature(s):		
Name(s):		
Capacity:		
For the Employer:	Stellenbosch Municipality, Plein Street, Stellenbosch	
Name of witness:		Date:
Signature of witness:		



27. PRICING SCHEDULE

NOTE:

1. Only firm prices will be accepted. Non-firm prices will not be considered.
2. All delivery costs **MUST** be included in the bid price, for delivery at the prescribed destination.
3. Document **MUST** be completed in non-erasable black ink.
4. NO correction fluid/tape may be used.
 - a. In the event of a mistake having been made, it shall be crossed out in ink and be accompanied by an initial at each and every alteration.
5. The Bidder **MUST** indicate whether he/she/the entity is a registered VAT Vendor or not.

I / We _____

(full name of Bidder) the undersigned in my capacity as _____

of the firm _____

hereby offer to Stellenbosch Municipality to render the services as described, in accordance with the specification and conditions of contract to the entire satisfaction of the Stellenbosch Municipality and subject to the conditions of tender, for the amounts indicated hereunder:

	INDICATE WITH AN 'X'							
Are you/is the firm a registered VAT Vendor	YES				NO			
If "YES", please provide VAT number								

Please note the following:

1. Stellenbosch Municipality reserves the right to adjust the scope of work/ quantity required to stay within its budget.
2. Only firm prices will be accepted and non-firm prices will not be considered.

PRICING SCHEDULE:

SIGNATURE		NAME (PRINT)	
CAPACITY		DATE	
NAME OF FIRM			



28. DECLARATION BY TENDERER

I / We acknowledge that I / we am / are fully acquainted with the contents of the conditions of tender of this tender document and that I / we accept the conditions in all respects.

I / We agree that the laws of the Republic of South Africa shall be applicable to the contract resulting from the acceptance of *my / our tender and that I / we elect *domicillium citandi et executandi* (physical address at which legal proceedings may be instituted) in the Republic at:

I / We accept full responsibility for the proper execution and fulfillment of all obligations and conditions devolving in me / us under this agreement as the principal liable for the due fulfillment of this contract.

I / We furthermore confirm I / we satisfied myself / ourselves as to the corrections and validity of my / our tender; that the price quoted cover all the work / items specified in the tender documents and that the price(s) cover all my / our obligations under a resulting contract and that I / we accept that any mistake(s) regarding price and calculations will be at my / our risk.

I / We furthermore confirm that my / our offer remains binding upon me / us and open for acceptance by the Purchases / Employer during the validity period indicated and calculated from the closing date of the bid.

SIGNATURE		NAME (PRINT)	
CAPACITY		DATE	
NAME OF FIRM			
WITNESS 1		WITNESS 2	