

HESSEQUA MUNICIPALITY

BID No. HES-TECH 10 / 2223

ELECTRICAL RATES FOR A PERIOD OF THREE (3) YEARS

Bills of Quantities (Part C2.2)

<u>INDEX TO BILLS OF QUANTITIES</u>	<u>Page No's</u>
BILL A - PRELIMINARY AND GENERAL ITEMS	69
BILL B - CIVIL WORK	72
BILL C - MV SUBSTATION	75
BILL D - UNDERGROUND RETICULATION	77
BILL E - OVERHEAD RETICULATION	88
BILL F - STREET AND HIGHMAST LIGHTING	96
BILL G - BUSH CLEARANCE	98
BILL H - FIBRE INSTALLATION	199
PRICE SUMMARY	102

BILL A - PRELIMINARY AND GENERAL ITEMS

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
	NOTES						
(i)	All items to include for the supply, delivery and installation unless specified otherwise.						
(ii)	Bidders to note that the Municipality reserves the right to supply any material / equipment as a free issue item during the course of the contract, in which case the labour rate shall govern.						
(iii)	All quantities are provisional and are for comparative purposes only, and do not describe the extent of the work.						
(iv)	All rates must be exclusive of VAT.						
(v)	R / O - Rate Only						
A1.0	Project Cost Items						
(i)	The following rates are for work not covered by rates listed elsewhere in the Schedules.						
(ii)	Certain project costs relate mainly to major task items identified during the course of the contract where a formal plan of work, programme, etc is required, and shall therefore not be deemed to be relevant to each and every work instruction issued.						
A1.1	Cost <u>per month</u> to set up and maintain Performance Bond / Surety to value of:						
A1.1.1	R 150k - Basic / fixed cost	Sum	1				
	- Monthly premium	Month	6				
A1.1.2	R 300k - Basic / fixed cost	Sum	1				
	- Monthly premium	Month	6				
A1.2	Provision of Insurances on a <u>monthly basis</u> as set out in terms of the document for an anticipated contract value of:						
A1.2.1	Up to R 1mil, excl VAT - Basic / Fixed Cost	Sum	1				
A1.2.2	- Monthly Premium	Month	6				
A1.2.3	Up to R 2mil, excl VAT - Basic / Fixed Cost	Sum	1				
A1.2.4	- Monthly Premium	Month	6				
A1.3	Fixed Cost Items:						
A1.3.1	For liaison, co-ordination and attendance on Municipality, Eskom, other Contractors, etc.	Sum	1				
A1.3.2	For the preparation and submission of a construction programme to the Municipality as required in the documents.	Sum	1				
A1.3.3	For the preparation and submission of a project specific OHS plan and compliance with the requirements of the OHS Act construction regulations as applicable.	Sum	1				
A1.3.4	For the submission of construction drawings to the Municipality for approval as required in the documents.	Sum	1				
A1.3.5	For the application, submission and obtaining of all necessary wayleaves, permissions as applicable.	Sum	1				
A1.3.6	For three sets of electronic and hard copies of "As-built" drawings, test certificates to be submitted to Engineer on hand-over.	Sum	1				
A1.3.7	For instructions to maintenance staff of operating and maintenance procedure.	Sum	1				
A1.3.8	For testing, inspection and commissioning.	Sum	1				

BILL A - PRELIMINARY AND GENERAL ITEMS (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
A1.4	Variable Cost Items:						
A1.4.1	For traffic calming measures, placement of delineators, etc for the duration of the work.	Days	5				
A1.4.2	Provision of medical certificates for local labourers appointed under the project, as required in terms of the Construction Regulations (2014). Item to be priced per person.	Person	25				
A1.5	Operate and maintain facilities on site:						
A1.5.1	Ablutions and latrines.	Days	60				
A1.5.2	Office and storage sheds.	Month	2				
A1.5.3	Remove site establishment, etc.	Sum	1				
A1.6	± 3m High x 3m Wide x 1mm thick metal type Project Notice Board, including 25 mm galvanized square tubing frame and 4 x 7m long tarred wooden pole supports.	Sum	1				
A2.0	<u>Labour and Transport Rates</u>						
(i)	The following rates are for work not covered by rates listed elsewhere in the Schedules.						
A2.1	Labour - Normal Time:						
A2.1.1	Supervisor	Hour	250				
A2.1.2	Installation Technician / Electrician.	Hour	500				
A2.1.3	Semi-skilled	Hour	1000				
A2.1.4	Unskilled	Hour	1000				
A2.2	Labour - Normal Overtime:						
A2.2.1	Supervisor	Hour	125				
A2.2.2	Installation Technician / Electrician.	Hour	250				
A2.2.3	Semi-skilled	Hour	500				
A2.2.4	Unskilled	Hour	500				
A2.3	Labour - Sundays and Public Holidays:						
A2.3.1	Supervisor	Hour	60				
A2.3.2	Installation Technician / Electrician.	Hour	125				
A2.3.3	Semi-skilled	Hour	250				
A2.3.4	Unskilled	Hour	250				
A2.4	Transport - Travel:						
A2.4.1	Private car or light delivery vehicle.	km	20000				
A2.4.2	3 to 5 Tonne truck.	km	10000				
A2.4.3	6 to 10 Tonne truck (with / without mobile crane attachment).	km	5000				
A2.4.4	Mechanical Excavator, i.e. TLB	km	1000				
A2.5	Transport - Rigging, Etc:						
A2.5.1	6 to 10 Tonne truck (Rigging).	Hour	100				
A2.5.2	6 to 10 Tonne truck (Cherry Picker).	Hour	100				
A2.5.3	Mechanical Excavator, i.e. TLB	Hour	100				
A2.6	Weatherproof rain shelter / covering:						
A2.6.1	Pop-up type gazebo type tent (3m x 3m min) with side panels.	Day	5				
A2.7	Cable / Conductor Installation Equipment:						
A2.7.1	Cable trailer	Day	5				
A2.7.2	Cable roller	Day	5				
A2.7.3	Bundle stringing blocks	Day	5				
A2.7.4	Overhead conductor stringing blocks	Day	5				

BILL A - PRELIMINARY AND GENERAL ITEMS (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
A2.8	Other Machinery:						
A2.8.1	Compressor	Day	5				
A2.8.2	Generator (± 25 kVA, three phase)	Day	5				
A2.8.3	Generator (± 10 kVA, single phase)	Day	5				
A2.8.4	Water pump	Day	2				
A2.8.5	Plate / vibrating type compactor	Day	5				
A2.8.6	Rammer / wacker type compactor	Day	5				
A2.8.7	Concrete / tar cut machine	Day	2				
A2.8.8	Replacement blade for cut machine	Item	5				
A3.0	<u>Fuel, Material and Specialist Equipment / Labour</u>						
A3.1	Percentage mark-up on the provisional sum shown for the nett cost of fuel (i.e. diesel / petrol) for operating equipment / machinery as per Item A2.8 above (State % and extend as an amount).	%	R 10 000.00		R 10 000.00	
A3.2	Percentage mark-up on the provisional sum shown for the nett cost of unscheduled items of material and labour from external specialist supplier / firm. (State % and extend as an amount).	%	R 25 000.00		R 25 000.00	
A4.0	<u>Miscellaneous</u>						
A4.1	Disposal of removed electrical equipment at an approved e-waste disposal facility and obtain detailed crushing certificate for said items. Item to be priced per truckload and to include for all handling, loading / offloading charges, etc but excluding transportation costs measured under Item A2.4 above.	Sum	1				
A4.2	Lump sum allowance for any items not included in this schedule necessary to complete the installation in accordance with the specification and drawings. Brief description of such items to be entered hereunder.	Sum	1				
TOTAL BILL A TO BE CARRIED FORWARD TO PRICE SUMMARY, ITEM 1							

BILL B - CIVIL WORK

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
	NOTES						
(i)	All items to include for the supply, delivery and installation unless specified otherwise.						
(ii)	Bidders to note that the Municipality reserves the right to supply any material / equipment as a free issue item during the course of the contract, in which case the labour rate shall govern.						
(iii)	All quantities are provisional and are for comparative purposes only, and do not describe the extent of the work.						
(iv)	All rates must be exclusive of VAT.						
(v)	R / O - Rate Only						
B1.0	<u>Surveying and Setting Out</u>						
B1.1	Survey of erf boundaries and new building / plinth / pole position by registered surveyor and mark positions on site:						
B1.1.1	Labour	Hour	8				
B1.1.2	Travel	km	250				
B1.1.3	Disbursements (per person)	Day	1				
B2.0	<u>Materials Testing</u>						
B2.1	Material (i.e. cube tests, etc) and ground tests (i.e. DCP tests, etc) undertaken by an approved materials testing laboratory. Copy of findings / results to be submitted on completion:						
B2.1.1	Field Work	Hrs	8				
B2.1.2	Laboratory Work	Hrs	8				
B2.1.3	Transport	km	250				
B2.1.4	Disbursements (per person)	Day	1				
B2.0	<u>Site Clearance and Excavation</u>						
B2.1	Clear and grub vegetation:						
B2.1.1	Medium Density (Combination of grasses and shrubs from 50–150mm stump diameter).	m ²	100				
B2.1.2	High Density (Combination of dense infestations of woody shrubs and trees greater than 150mm stump diameter)	m ²	100				
B2.1.3	Tree stumps up to 5m girth	No.	1				
B2.2	Excavate and spoil / stockpile to nominal depth of 150mm:						
B2.1	Topsoil	m ³	20				
B2.2	Chip stone layer	m ³	20				
B2.3	Rip and recompact in situ material as required to 93% mod AASHTO (100% for sand) to a depth of min 200mm below founding.	m ²	100				
B2.4	Imported material compacted in 150mm layers to 93% mod AASHTO (100% for sand):						
B2.4.1	G5	m ³	20				
B2.4.2	G7	m ³	20				
B2.5	Supply and lay 100mm thick chipstone layer (26-38mm diam) in substation yard, etc.	m ³	10				
B2.6	Excavation of foundation, surface bed platforms, etc:						
B2.6.1	Earth	m ³	20				
B2.6.2	Soft Rock	m ³	10				
B2.6.3	Hard Rock	m ³	5				

BILL B - CIVIL WORK (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
B3.0	<u>Building Work</u>						
B3.1	Vertical / horizontal formwork narrow widths with off-shutter finish up to:						
B3.1.1	150mm wide	m	25				
B3.1.2	300mm wide	m	25				
B3.2	Plain horizontal formwork with off-shutter finish to slab soffits with prop height over and up to 3,5m.	m ²	15				
B3.3	Ready concrete mix:						
B3.3.1	10MPa	m ³	1				
B3.3.2	20MPa	m ³	1				
B3.3.3	25MPa	m ³	1				
B3.3.4	30MPa	m ³	1				
B3.4	Penetron seal coat type waterproofing compound applied / added to concrete / brickwork.	kg	25				
B3.5	Supply, bend and fix in position high tensile steel reinforcing bars / mesh to be cast in concrete, etc measured elsewhere:						
B3.5.1	Up to 25mm Ø steel bars	kg	1000				
B3.5.2	Ref 311 mesh	m ²	5				
B3.5.3	Ref 245 mesh	m ²	5				
B3.6	Brickwork, including brickforce, mortar and wall ties as applicable:						
B3.6.1	110mm single skin wall (stock brick)	m ²	10				
B3.6.2	110mm single skin wall (rock face brick)	m ²	10				
B3.6.3	230mm cavity wall (rock face brick external)	m ²	10				
B3.6.4	230mm cavity wall with 20MPa concrete infill	m ²	10				
B3.6.5	12mm thick plasterwork to brickwork	m ²	10				
B3.7	Surface finishes:						
B3.7.1	Wood floated	m ²	5				
B3.7.2	Steel floated	m ²	5				
B3.8	375 Micron thick polyethylene damp proofing:						
B3.8.1	Damp proof membrane (DPM)	m ²	5				
B3.8.2	Damp proof course (DPC)	m	10				
B4.0	<u>Paving</u>						
B4.1	Supply and construct paved walkway surface complete with approved support layer material compacted to 95% MOD AASHTO:						
B4.1.1	Concrete bevel paving (50 mm blocks and 20 mm grit)	m ²	10				
B4.1.2	Concrete interlocking paving (60 mm blocks and 20 mm grit)	m ²	10				
B4.1.3	Clay (wheatstone) paving (50 mm blocks and 20 mm grit)	m ²	10				
B4.2	Standard precast 300mm high concrete kerb complete with concrete haunching and bedding.	m	10				
B4.3	± 300mm Wide x 600mm long precast concrete cable duct cover.	No.	5				

BILL B - CIVIL WORK (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
B5.0	<u>Fencing</u>						
B5.1	2400mm high security fence, similar or equal to the Betafence Securifor type complete as specified:						
B5.1.1	Corner post (76mm x 76mm) complete with cover strip, cast into 600mm deep concrete, incl. earth connection.	No.	4				
B5.1.2	Gate post (100mm x 100mm) complete with cover strip, cast into 600mm deep concrete, incl. earth connection.	No.	2				
B5.1.3	Intermediate Post (70mm x 70mm) complete with cover strip, cast into 600mm deep concrete.	No.	10				
B5.1.4	Fence panel (3 048mm wide x 2 385mm high, fixed to corner, gate & fence posts.	No.	12				
B5.1.5	3mm thick Angle iron rail (2 996mm long x 40mm x 40mm) fixed to post, panel, etc.	No.	12				
B5.2	Additional fence items:						
B5.2.1	Shark tooth spikes (100mm x 3 048mm).	No.	12				
B5.2.2	Anti Burrow (400mm x 3 048mm)	No.	12				
B5.2.3	Double leaf swing gate (min 3m wide)	No.	1				
B5.2.4	Pedestrian gate.	No.	1				
B6.0	<u>Miscellaneous</u>						
B6.1	Paint interior surfaces of building with interior PVA type paint with high gloss finish.	m ²	100				
B6.2	Lump sum allowance for any items not included in this schedule necessary to complete the installation in accordance with the specification and drawings. Brief description of such items to be entered hereunder.	Sum	1				
TOTAL BILL B TO BE CARRIED FORWARD TO PRICE SUMMARY, ITEM 2							

BILL C - MV SUBSTATION

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
	NOTES						
(i)	All items to include for the supply, delivery and installation unless specified otherwise.						
(ii)	Bidders to note that the Municipality reserves the right to supply any material / equipment as a free issue item during the course of the contract, in which case the labour rate shall govern.						
(iii)	All quantities are provisional and are for comparative purposes only, and do not describe the extent of the work.						
(iv)	All rates must be exclusive of VAT.						
(v)	R / O - Rate Only						
C1.0	<u>Switchgear Equipment</u>						
C1.1	Supply, install and connect single busbar switchgear panel complete as specified incl. positioning, alignment, interconnecting busbars and bolting down to floor, but excluding SF6 insulated circuit breaker equipment, protection relays and cable terminations measured elsewhere:						
C1.1.1	11kV - Incomer / Feeder Panel	Item	1				
C1.1.2	- Bus-Section Panel	Item	1				
C1.1.3	- Bus-Riser / Joggler Panel	Item	1				
C1.2	SF6 insulated circuit breaker equipment of rating indicated installed inside 11kV switchgear panel measured elsewhere:						
C1.2.1	1 250A	Item	1				
C1.2.2	630A	Item	1				
C1.3	Protection Relay, complete as specified installed inside new / existing switchgear panel:						
C1.3.1	SEL-751 (MOT - 751001DCD4D7081A230)	Item	1				
C1.3.2	SEL-751 (MOT - 751201DCD4D7081A230)	Item	1				
C1.4	Peripheral automation control and data equipment, complete as specified:						
C1.4.1	SEL 3530-4RTAC (Automation controller)	Item	1				
C1.4.2	SEL-2730M (Ethernet Switch)	Item	1				
C1.4.3	SEL-3355 (Industrial Computer)	Item	1				
C1.5	Battery tripping unit complete as specified installed in switching station building.	Item	1				
C1.6	Replace suspect / faulty battery bank of BTU:						
C1.6.1	80Ah (Nickel Cadmium)	Sum	1				
C1.6.2	120Ah (Nickel Cadmium)	Sum	1				
C1.6.3	160Ah (Nickel Cadmium)	Sum	1				
C1.6.4	200Ah (Nickel Cadmium)	Sum	1				
C2.0	<u>Earthing</u>						
C2.1	Earthing conductor secured against structure or laid in trench measured elsewhere:						
C2.1.1	10mm diameter solid round copper	m	50				
C2.1.2	50mm x 3mm Cu earthing strap	m	15				
C2.2	Cadweld copper conductor at junctions / connections of earth grid in trench:						
C2.2.1	10mm diameter solid round copper	No.	15				
C2.2.2	50mm x 3mm Cu earthing strap	No.	5				

BILL C - MV SUBSTATION (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
C2.3	Bond equipment holding down bolts, fence posts, etc to earth grid system using 50mm x 3mm Cu strap measured elsewhere bolted to the base of the steel support structure as applicable.	Sum	5				
C2.4	Electro tinned plated high tensile brass line taps for conductor sizes as shown.						
C2.4.1	10mm ² to 16 mm ²	No.	1				
C2.4.2	25mm ² to 35 mm ²	No.	1				
C2.4.3	50mm ² to 95 mm ²	No.	1				
C2.5	16mm x 1,5m Copper bonded threaded earth spikes with clamp driven vertically into ground up to 4,5m deep.	No	5				
C2.6	350mm Long x 50mm wide x 6,3mm thick tinned copper MV / LV earth bar installed inside substation on bobbin type insulators.	Item	1				
C2.7	Test earth system and provide earth test certificate for earth resistance, etc.	Sum	1				
C3.0	<u>Miscellaneous</u>						
C3.1	Supply and install 38mm Heavy duty Fibretech grating duct covers, including cutting and fitting into position.	m ²	5				
C3.2	Supply and install 50mm x 50mm x 5mm <u>Hot dipped galvanized</u> channel iron secured at ± 1m intervals using M8 rawl bolts, etc inside cable duct to support fibretech grating measured elsewhere.	m	10				
C3.3	Disconnect and remove existing item of MV equipment and return same to Municipal Store.						
C3.3.1	11kV switchgear panel	Sum	1				
C3.4	Warning signs and safety notices as required in terms of the Occupational Health and Safety Act installed against walls / doors of 11kV switchroom.	No.	5				
C3.5	Clean out existing substation yard, including spraying of herbicide and removal of weeds and encroaching vegetation inside same, as well as off-site disposal of all removed material / vegetation at an approved dumping site.	m ²	500				
C3.6	Arrange power shut-down/s with Eskom / Municipality, including Eskom / Municipal charge to switch on / off supplies and their attendance.	Sum	1				
C3.7	Lump sum allowance for any items not included in this schedule necessary to complete the installation in accordance with the specification and drawings. Brief description of such items to be entered hereunder.	Sum	1				
TOTAL BILL C TO BE CARRIED FORWARD TO PRICE SUMMARY, ITEM 3							

BILL D - UNDERGROUND RETICULATION

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
	NOTES						
(i)	All items to include for the supply, delivery and installation unless specified otherwise.						
(ii)	Bidders to note that the Municipality reserves the right to supply any material / equipment as a free issue item during the course of the contract, in which case the labour rate shall govern.						
(iii)	All quantities are provisional and are for comparative purposes only, and do not describe the extent of the work.						
(iv)	All rates must be exclusive of VAT.						
(v)	R / O - Rate Only						
D1.0	<u>MV Items of Equipment</u>						
D1.1	Supply and install miniature substation complete as specified, with inbuilt RMU, temp monitoring / protection, busbar metering, streetlight control gear, etc. but excluding main and feeder MCB's measured elsewhere:						
D1.1.1	11kV / 420V - 315 kVA	No.	1				
D1.1.2	- 500 kVA	No.	1				
D1.1.3	- 630 kVA	No.	1				
D1.1.4	- 800 kVA	No.	1				
D1.2	Ground mounted transformer supplied and installed complete as specified including transportation and delivery to site:						
D1.2.1	11kV / 420V - 200 kVA	No.	1				
D1.2.2	- 315 kVA	No.	1				
D1.2.3	- 500 kVA	No.	1				
D1.2.4	- 630 kVA	No.	1				
D1.2.5	- 800 kVA	No.	1				
D1.3	SF6 Insulated modular type outdoor switchgear supplied and installed complete as specified including transportation and delivery to site, but excluding outdoor weatherproof enclosure measured elsewhere:						
D1.3.1	11kV - Cable switch module	No.	1				
D1.3.2	- Circuit breaker module	No.	1				
D1.3.3	- Bulk meter module	No.	1				
D1.4	3CR12 Outdoor enclosure for switchgear modules measured under Item D1.3 above:						
D1.4.1	1 Way	Item	1				
D1.4.2	2 Way	Item	1				
D1.4.3	3 Way	Item	1				
D1.4.4	4 Way	Item	1				
D1.4.5	5 Way	Item	1				
D2.0	<u>Metering</u>						
D2.1	Electrical metering equipment complete with interconnecting tails, etc. installed in LV distribution kiosk, pole box, minisub, etc:						
D2.1.1	Landis & Gyr type ZMD 405 CT kVA/kWh bulk meter with 1200/1A CT's, connection block, etc.	No.	1				
D2.1.2	Elster A1100 type kWh meter (poly phase).	No.	1				
D2.1.3	Elster A1100 type kWh meter (single phase).	No.	1				
D2.2	Testing, commissioning and programming of Landis & Gyr type ZMD 405 CT kVA/kWh meter by Specialist Contractor to municipal requirements.						
	Sum		1				

BILL D - UNDERGROUND RETICULATION (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
D2.3	Landis & Gyr E460 split type prepayment meters complete with interconnecting tails, etc. installed in LV distribution kiosk, top structure, etc:						
D2.3.1	Main Control Unit (MCU) installed in kiosk / pole box.	Item	50				
D2.3.2	User Interface Unit (UIU) and wall plate mounted against internal brick wall of top structure adjacent (± 1 m) to building DB.	Item	50				
D3.0	<u>Excavation and Setting Out</u>						
D3.1	Arrange power shut-down with Municipality including all attendance fee costs, as well as delivery fee for distribution of notices to downstream affected consumers.	Sum	1				
D3.2	Arrange tracing and locating of existing underground MV / LV cable routes and circuits together with Municipality. Item to include Attendance Fee to be paid to Municipality as applicable.	Sum	1				
D3.3	Uncover by hand (± 1 200 mm deep) existing MV / LV underground cables, earth grid, sleeve / conduit ends, etc. and prepare same for cables, re-routing, recovery, etc.						
D3.3.1	Soft	m ³	70				
D3.3.2	Intermediate	m ³	20				
D3.3.3	Rock	m ³	10				
D3.4	Re-route existing MV / LV underground cables previously exposed and reroute same to new position of equipment / trench.	m	100				
D3.5	Trenching by hand (up to 1 000mm deep) in parallel with and crossing existing services for new MV / LV cables, sleeves, etc including backfilling and compaction, but excluding imported soft sand bedding:						
D3.5.1	Soft	m ³	500				
D3.5.2	Intermediate	m ³	375				
D3.5.3	Rock	m ³	250				
D3.6	Trenching by machine (up to 1 000mm deep) in parallel with and crossing existing services for new MV / LV cables / sleeves, including backfilling and compaction, but excluding imported soft sand bedding:						
D3.6.1	Earth	m ³	500				
D3.6.2	Soft Rock	m ³	375				
D3.6.3	Hard Rock	m ³	250				
D3.7	450mm Deep imported sand bedding / cover material in trench measured elsewhere.	m ³	100				
D3.8	Imported backfill material from off-site source.	m ³	50				
D3.9	Disposal of surplus or unsuitable material including haulage up to 10 km from site.	m ³	50				
D3.10	Break-up and repair to original state paved walkway surface for sleeve / cable. Paving to be placed on top of a 25mm thick sandlayer on an approved support layer material of 150 mm thick compacted to 95% MOD AASHTO.	m ²	5				

BILL D - UNDERGROUND RETICULATION (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
D3.11	Break-up and repair to original state <u>concrete</u> walkway surface for sleeve / cable. Concrete to be poured on top of an approved support layer material of 150 mm thick compacted to 95% MOD AASHTO.	m ²	5				
D3.12	Break-up and repair to original state <u>tarred</u> surface for sleeve / cable crossing as follows:						
D3.12.1	0 to 40mm Deep (40 mm thick asphalt layer) - Cut existing tar surface and excavate trench to required depth. During reinstatement of tar surface all dust to be removed from backfilled surface with a broom before applying M.C.30 prime or stable emulsion .	m ³	0.4				
D3.12.2	40 to 190mm Deep (150 mm thick layer) - G1 basecourse with a CBR of not less than 80 and a P.I. not higher than 4, compacted to 98% MOD AASHTO.	m ³	1.5				
D3.12.3	190 to 340mm Deep (150 mm thick layer) - G5 Sub-base with a CBR of not less than 45 and a P.I. not higher than 12, compacted to 95% MOD AASHTO.	m ³	1.5				
D3.12.4	340 to 700mm Deep (360 mm thick layer) - imported selected material recovered from trenches compacted to 93% MOD AASHTO.	m ³	3.6				
D3.13	Re-instate disturbed grass areas with instant 'Roll on' type lawn.	m ²	5				
D3.14	400mm wide x 100 micron PVC Marker tape over cable / sleeve in trench measured elsewhere.	m	2250				
D3.15	Concrete slabs laid above MV / LV cable.	m	100				
D3.16	Concrete cable markers clearly indicating the cable direction with an arrow and the cable size and number of cables.	No.	50				
D3.17	PVC sleeves installed in trench / duct, including 4mm galvanized draw wire:						
D3.17.1	160mm Ø	m	100				
D3.17.2	110mm Ø	m	200				
D3.18	Seal 160mm Ø PVC sleeve end after installation of cable using expandable foam sealant.						
D3.18.1	160mm Ø	No.	20				
D3.18.2	110mm Ø	No.	40				
D4.0	<u>Directional Drilling</u>						
D4.1	Excavate launching and receiving pits 2m long x 2m wide x 2m deep for drilling machine, including backfilling and compaction.	Sum	2				
D4.2	Install sleeves underneath road / crossing using directional drilling machine (rate to be provided per metre).						
D4.2.1	1 x 160mm Ø uPVC	m	50				
D4.2.2	2 x 160mm Ø uPVC	m	50				
D4.2.3	3 x 160mm Ø uPVC	m	50				

BILL D - UNDERGROUND RETICULATION (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
D4.3	Preliminary and General expenses over and above those allowed elsewhere for Drilling Sub-Contractor:						
D4.3.1	Site establishment	Sum	1				
D4.3.2	Operate and maintain facilities on site.	Day	3				
D5.0	<u>MV Cabling</u>						
D5.1	11kV / 11kV, screened (Table 18) PILCA cable installed in trench / sleeve / duct measured elsewhere:						
D5.1.1	Copper - 25mm ² Cu x 3 Core	m	1000				
D5.1.2	- 35mm ² Cu x 3 Core	m	1000				
D5.1.3	- 50mm ² Cu x 3 Core	m	1000				
D5.1.4	- 70mm ² Cu x 3 Core	m	1000				
D5.1.5	- 95mm ² Cu x 3 Core	m	1000				
D5.1.6	- 120mm ² Cu x 3 Core	m	1000				
D5.1.7	- 150mm ² Cu x 3 Core	m	1000				
D5.1.8	- 185mm ² Cu x 3 Core	m	1000				
D5.1.9	Aluminium - 50mm ² Al x 3 Core	m	1000				
D5.1.10	- 70mm ² Al x 3 Core	m	1000				
D5.1.11	- 95mm ² Al x 3 Core	m	1000				
D5.1.12	- 120mm ² Al x 3 Core	m	1000				
D5.1.13	- 150mm ² Al x 3 Core	m	1000				
D5.1.14	- 185mm ² Al x 3 Core	m	1000				
D5.1.15	- 240mm ² Al x 3 Core	m	1000				
D5.1.16	- 300mm ² Al x 3 Core	m	1000				
D5.2	6,35 / 11kV, XLPE (Type A) insulated cable installed in cable in trench / sleeve / duct measured elsewhere:						
D5.2.1	Copper - 630mm ² Cu x 1 Core	m	50				
D5.2.2	- 300mm ² Cu x 1 Core	m	50				
D5.3	Through joint in 6,35 / 11 kV, screened (Table 19), PILCA cable:						
D5.3.1	Copper - 25mm ² Cu x 3 Core	No.	5				
D5.3.2	- 35mm ² Cu x 3 Core	No.	5				
D5.3.3	- 50mm ² Cu x 3 Core	No.	5				
D5.3.4	- 70mm ² Cu x 3 Core	No.	5				
D5.3.5	- 95mm ² Cu x 3 Core	No.	5				
D5.3.6	- 120mm ² Cu x 3 Core	No.	5				
D5.3.7	- 150mm ² Cu x 3 Core	No.	5				
D5.3.8	- 185mm ² Cu x 3 Core	No.	5				
D5.3.9	Aluminium - 50mm ² Al x 3 Core	No.	5				
D5.3.10	- 70mm ² Al x 3 Core	No.	5				
D5.3.11	- 95mm ² Al x 3 Core	No.	5				
D5.3.12	- 120mm ² Al x 3 Core	No.	5				
D5.3.13	- 150mm ² Al x 3 Core	No.	5				
D5.3.14	- 185mm ² Al x 3 Core	No.	5				
D5.3.15	- 240mm ² Al x 3 Core	No.	5				
D5.3.16	- 300mm ² Al x 3 Core	No.	5				

BILL D - UNDERGROUND RETICULATION (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
D5.4	Terminate and connect 6,35 / 11 kV, screened (Table 18), PILCA cable using heat shrink kit with fully screened separable connector insulation boots (similar to Iso-Tech type) at transformer / MV switchgear / minisub:						
D5.4.1	Copper - 25mm ² Cu x 3 Core	No.	10				
D5.4.2	- 35mm ² Cu x 3 Core	No.	10				
D5.4.3	- 50mm ² Cu x 3 Core	No.	10				
D5.4.4	- 70mm ² Cu x 3 Core	No.	10				
D5.4.5	- 95mm ² Cu x 3 Core	No.	10				
D5.4.6	- 120mm ² Cu x 3 Core	No.	10				
D5.4.7	- 150mm ² Cu x 3 Core	No.	10				
D5.4.8	- 185mm ² Cu x 3 Core	No.	10				
D5.4.9	Aluminium - 50mm ² Al x 3 Core	No.	10				
D5.4.10	- 70mm ² Al x 3 Core	No.	10				
D5.4.11	- 95mm ² Al x 3 Core	No.	10				
D5.4.12	- 120mm ² Al x 3 Core	No.	10				
D5.4.13	- 150mm ² Al x 3 Core	No.	10				
D5.4.14	- 185mm ² Al x 3 Core	No.	10				
D5.4.15	- 240mm ² Al x 3 Core	No.	10				
D5.4.16	- 300mm ² Al x 3 Core	No.	10				
D5.5	Terminate and connect 6,35 / 11kV, XLPE (Type A) insulated cable using heat shrink kit with fully screened separable connector insulation boots (similar to Iso-Tech type) at transformer / MV switchgear / minisub:						
D5.5.1	Copper - 630mm ² Cu x 1 Core	No.	2				
D5.5.2	- 300mm ² Cu x 1 Core	No.	2				
D5.6	Outdoor pole mounting termination and connection of 6,35 / 11 kV, screened (Table 18), PILCA cable with heat shrink kit similar or equal to CIP type:						
D5.6.1	Copper - 25mm ² Cu x 3 Core	No.	1				
D5.6.2	- 35mm ² Cu x 3 Core	No.	1				
D5.6.3	- 50mm ² Cu x 3 Core	No.	1				
D5.6.4	- 70mm ² Cu x 3 Core	No.	1				
D5.6.5	- 95mm ² Cu x 3 Core	No.	1				
D5.6.6	- 120mm ² Cu x 3 Core	No.	1				
D5.6.7	- 150mm ² Cu x 3 Core	No.	1				
D5.6.8	- 185mm ² Cu x 3 Core	No.	1				
D5.6.9	Aluminium - 50mm ² Al x 3 Core	No.	1				
D5.6.10	- 70mm ² Al x 3 Core	No.	1				
D5.6.11	- 95mm ² Al x 3 Core	No.	1				
D5.6.12	- 120mm ² Al x 3 Core	No.	1				
D5.6.13	- 150mm ² Al x 3 Core	No.	1				
D5.6.14	- 185mm ² Al x 3 Core	No.	1				
D5.6.15	- 240mm ² Al x 3 Core	No.	1				
D5.6.16	- 300mm ² Al x 3 Core	No.	1				
D5.7	Pressure test MV cable and provide Municipality with test certificate.	No.	5				

BILL D - UNDERGROUND RETICULATION (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
D6.0	LV Cabling						
D6.1	Supply and install LV, PVCAS cable in trench / sleeve measured elsewhere:						
D6.1.1	Copper - 2,5mm ² Cu x 2 Core	m	1000				
D6.1.2	- 2,5mm ² Cu x 4 Core	m	1000				
D6.1.3	- 4mm ² Cu x 4 Core	m	1000				
D6.1.4	- 6mm ² Cu x 4 Core	m	1000				
D6.1.5	- 10mm ² Cu x 3 Core	m	1000				
D6.1.6	- 10mm ² Cu x 4 Core	m	1000				
D6.1.7	- 16mm ² Cu x 2 Core	m	1000				
D6.1.8	- 16mm ² Cu x 4 Core	m	1000				
D6.1.9	- 25mm ² Cu x 4 Core	m	1000				
D6.1.10	- 35mm ² Cu x 4 Core	m	1000				
D6.1.11	- 50mm ² Cu x 4 Core	m	1000				
D6.1.12	- 70mm ² Cu x 4 Core	m	1000				
D6.1.13	- 95mm ² Cu x 4 Core	m	1000				
D6.1.14	- 120mm ² Cu x 4 Core	m	1000				
D6.1.15	- 150mm ² Cu x 4 Core	m	1000				
D6.1.16	- 185mm ² Cu x 4 Core	m	1000				
D6.1.17	Aluminium - 50mm ² Al x 4 Core	m	1000				
D6.1.18	- 70mm ² Al x 4 Core	m	1000				
D6.1.19	- 95mm ² Al x 4 Core	m	1000				
D6.1.20	- 120mm ² Al x 4 Core	m	1000				
D6.1.21	- 150mm ² Al x 4 Core	m	1000				
D6.1.22	- 185mm ² Al x 4 Core	m	1000				
D6.1.23	- 240mm ² Al x 4 Core	m	1000				
D6.1.24	Multicore - 2,5mm ² Cu x 7 Core	m	1000				
D6.1.25	- 2,5mm ² Cu x 19 Core	m	1000				
D6.1.26	- 4mm ² Cu x 7 Core	m	1000				
D6.1.27	- 4mm ² Cu x 19 Core	m	1000				
D6.2	Terminate and connect LV, PVCAS cables at kiosk, pole box, pratley box, etc. using brass cable gland, brass locknut, neoprene rubber shroud and crimp lugs:						
D6.2.1	Copper - 2,5mm ² Cu x 2 Core	No.	20				
D6.2.2	- 2,5mm ² Cu x 4 Core	No.	20				
D6.2.3	- 4mm ² Cu x 4 Core	No.	20				
D6.2.4	- 6mm ² Cu x 4 Core	No.	20				
D6.2.5	- 10mm ² Cu x 3 Core	No.	20				
D6.2.6	- 10mm ² Cu x 4 Core	No.	20				
D6.2.7	- 16mm ² Cu x 2 Core	No.	20				
D6.2.8	- 16mm ² Cu x 4 Core	No.	20				
D6.2.9	- 25mm ² Cu x 4 Core	No.	20				
D6.2.10	- 35mm ² Cu x 4 Core	No.	20				
D6.2.11	- 50mm ² Cu x 4 Core	No.	20				
D6.2.12	- 70mm ² Cu x 4 Core	No.	20				
D6.2.13	- 95mm ² Cu x 4 Core	No.	20				
D6.2.14	- 120mm ² Cu x 4 Core	No.	20				
D6.2.15	- 150mm ² Cu x 4 Core	No.	20				
D6.2.16	- 185mm ² Cu x 4 Core	No.	20				
D6.2.17	Aluminium - 50mm ² Al x 4 Core	No.	20				
D6.2.18	- 70mm ² Al x 4 Core	No.	20				
D6.2.19	- 95mm ² Al x 4 Core	No.	20				
D6.2.20	- 120mm ² Al x 4 Core	No.	20				
D6.2.21	- 150mm ² Al x 4 Core	No.	20				
D6.2.22	- 185mm ² Al x 4 Core	No.	20				
D6.2.23	- 240mm ² Al x 4 Core	No.	20				
D6.2.24	Multicore - 2,5mm ² Cu x 7 Core	No.	20				
D6.2.25	- 2,5mm ² Cu x 19 Core	No.	20				
D6.2.26	- 4mm ² Cu x 7 Core	No.	20				
D6.2.27	- 4mm ² Cu x 19 Core	No.	20				

BILL D - UNDERGROUND RETICULATION (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
D6.3	Duracast resin through joint in LV, PVCAS cable measured elsewhere:						
D6.3.1	Copper - 2,5mm ² Cu x 2 Core	No.	10				
D6.3.2	- 2,5mm ² Cu x 4 Core	No.	10				
D6.3.3	- 4mm ² Cu x 4 Core	No.	10				
D6.3.4	- 6mm ² Cu x 4 Core	No.	10				
D6.3.5	- 10mm ² Cu x 3 Core	No.	10				
D6.3.6	- 10mm ² Cu x 4 Core	No.	10				
D6.3.7	- 16mm ² Cu x 2 Core	No.	10				
D6.3.8	- 16mm ² Cu x 4 Core	No.	10				
D6.3.9	- 25mm ² Cu x 4 Core	No.	10				
D6.3.10	- 35mm ² Cu x 4 Core	No.	10				
D6.3.11	- 50mm ² Cu x 4 Core	No.	10				
D6.3.12	- 70mm ² Cu x 4 Core	No.	10				
D6.3.13	- 95mm ² Cu x 4 Core	No.	10				
D6.3.14	- 120mm ² Cu x 4 Core	No.	10				
D6.3.15	- 150mm ² Cu x 4 Core	No.	10				
D6.3.16	- 185mm ² Cu x 4 Core	No.	10				
D6.3.17	Aluminium - 50mm ² Al x 4 Core	No.	10				
D6.3.18	- 70mm ² Al x 4 Core	No.	10				
D6.3.19	- 95mm ² Al x 4 Core	No.	10				
D6.3.20	- 120mm ² Al x 4 Core	No.	10				
D6.3.21	- 150mm ² Al x 4 Core	No.	10				
D6.3.22	- 185mm ² Al x 4 Core	No.	10				
D6.3.23	- 240mm ² Al x 4 Core	No.	10				
D6.3.24	Multicore - 2,5mm ² Cu x 7 Core	No.	10				
D6.3.25	- 2,5mm ² Cu x 19 Core	No.	10				
D6.3.26	- 4mm ² Cu x 7 Core	No.	10				
D6.3.27	- 4mm ² Cu x 19 Core	No.	10				
D6.4	Supply and install UV stable PVC sheathed SURFIX type cabling inside kicker pipe and strapped against steel support structure, including all cable ties, etc. required.						
D6.4.1	4 mm ² x 4 Core	m	50				
D6.4.2	2,5 mm ² x 4 Core	m	50				
D6.4.3	4 mm ² x 2 Core	m	50				
D6.4.4	2,5 mm ² x 2 Core	m	50				
D6.5	Terminate and connect UV stable PVC sheathed SURFIX type cabling inside junction box, light pole / fitting, etc. using compression type cable glands, etc:	No.	2				
D6.5.1	4 mm ² x 4 Core	No.	2				
D6.5.2	2,5 mm ² x 4 Core	No.	2				
D6.5.3	4 mm ² x 2 Core	No.	2				
D6.5.4	2,5 mm ² x 2 Core	No.	2				
D6.6	Megger test LV cable and provide Municipality with test certificate.	No.	5				
D7.0	<u>Earthing</u>						
D7.1	Hard drawn copper earth wire laid in trench, duct, etc:						
D7.1.1	70mm ² Cu	m	450				
D7.1.2	50mm ² Cu	m	450				
D7.1.3	35mm ² Cu	m	450				
D7.1.4	25mm ² Cu	m	450				
D7.1.5	16mm ² Cu	m	450				
D7.1.6	10mm ² Cu	m	450				
D7.1.7	6mm ² Cu	m	450				

BILL D - UNDERGROUND RETICULATION (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
D7.2	HD Copper earth wire terminated at kiosk, minisub, etc:						
D7.2.1	70mm ² Cu	m	15				
D7.2.2	50mm ² Cu	m	15				
D7.2.3	35mm ² Cu	m	15				
D7.2.4	25mm ² Cu	m	15				
D7.2.5	16mm ² Cu	m	15				
D7.2.6	10mm ² Cu	m	15				
D7.2.7	6mm ² Cu	m	15				
D7.3	16mm x 1.5m Copper bonded threaded earth spikes with clamp driven vertically into ground up to 4.5m deep.	No	10				
D7.4	Test earthing of equipment / installation and provide copy of results to Engineer / Municipality.	Sum	5				
D8.0	<u>Cable Accessories</u>						
D8.1	Labelling of MV / LV cables (Item to be priced per cable termination).	No.	100				
D8.2	Heavy duty hot dipped galvanised cable <u>ladder</u> installed against wall / floor. Item to include all brackets, galvanised steel mounting screws / bolts required:						
D8.2.1	400mm wide	m	5				
D8.2.2	200mm wide	m	5				
D8.2.3	100mm wide	m	5				
D8.2.4	50mm wide	m	5				
D8.3	Heavy duty hot dipped galvanised cable <u>tray</u> with closed cover installed against wall / floor. Item to include all brackets, galvanised steel mounting screws / bolts required:						
D8.3.1	400mm wide	m	5				
D8.3.2	200mm wide	m	5				
D8.3.3	100mm wide	m	5				
D8.3.4	50mm wide	m	5				
D8.4	Hot dipped galvanised steel mesh cable <u>tray</u> installed against wall / floor. Item to include all brackets, stainless steel mounting screws / bolts required:						
D8.4.1	400mm wide	m	5				
D8.4.2	200mm wide	m	5				
D8.4.3	100mm wide	m	5				
D8.4.4	50mm wide	m	5				
D8.5	Galvanised steel conduit / kicker pipe for cable secured to pole or saddled to building, etc. Item to include for all saddles, adapters etc required:						
D8.5.1	100mm Ø.	m	5				
D8.5.2	75mm Ø.	m	5				
D8.5.3	50mm Ø.	m	5				
D8.5.4	40mm Ø.	m	5				
D8.5.5	32mm Ø.	m	5				
D8.5.6	25mm Ø.	m	5				
D8.5.7	20mm Ø.	m	5				
D8.6	PVC conduit saddled to building, etc. Item to include for all saddles, adapters etc required.						
D8.6.1	50mm Ø.	m	5				
D8.6.2	40mm Ø.	m	5				
D8.6.3	32mm Ø.	m	5				
D8.6.4	25mm Ø.	m	5				

BILL D - UNDERGROUND RETICULATION (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
D8.7	IP 68 Pratley type EZEE-Fit junction cable box, complete with compression conversion kit, kwikblok mountings, kwikblocks, dinky connectors, etc:						
D8.7.1	Three way (T-box) - No. 0	No.	5				
D8.7.2	- No. 1	No.	5				
D8.7.3	- No. 2	No.	5				
D8.7.4	- No. 3	No.	5				
D8.7.5	- No. 4	No.	5				
D8.7.6	Four way (right angle) - No. 0	No.	5				
D8.7.7	- No. 1	No.	5				
D8.7.8	- No. 2	No.	5				
D8.7.9	- No. 3	No.	5				
D8.7.10	- No. 4	No.	5				
D9.0	<u>Kiosks and Control Equipment</u>						
D9.1	Polyethylene single door LV distribution kiosk complete as specified similar or equal to Golnix type including stainless steel glandplate, root, etc, but excluding service connection MCB's and kWh meters measured elsewhere:						
D9.1.1	12 Way	No.	15				
D9.1.2	9 Way	No.	15				
D9.1.3	6 Way	No.	15				
D9.1.4	4 Way	No.	15				
D9.2	Moulded case circuit breaker, similar or approved equal to CBI type QF-(26) type, complete with interconnecting tails, etc. installed in LV distribution kiosk, pole box, streetlight, minisub, etc:						
D9.2.1	Triple pole - 100A, (orange toggle)	No.	50				
D9.2.2	- 100A, (white toggle)	No.	50				
D9.2.3	- 80A, (orange toggle)	No.	50				
D9.2.4	- 80A, (white toggle)	No.	50				
D9.2.5	- 63A, (orange toggle)	No.	50				
D9.2.6	- 63A, (white toggle)	No.	50				
D9.2.7	- 40A, (orange toggle)	No.	50				
D9.2.8	- 40A, (white toggle)	No.	50				
D9.2.9	- 20A, (orange toggle)	No.	50				
D9.2.10	- 20A, (white toggle)	No.	50				
D9.2.11	Single pole - 100A, (orange toggle)	No.	50				
D9.2.12	- 100A, (white toggle)	No.	50				
D9.2.13	- 80A, (orange toggle)	No.	50				
D9.2.14	- 80A, (white toggle)	No.	50				
D9.2.15	- 63A, (orange toggle)	No.	50				
D9.2.16	- 63A, (white toggle)	No.	50				
D9.2.17	- 40A, (orange toggle)	No.	50				
D9.2.18	- 40A, (white toggle)	No.	50				
D9.2.19	- 20A, (orange toggle)	No.	50				
D9.2.20	- 20A, (white toggle)	No.	50				

BILL D - UNDERGROUND RETICULATION (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
D9.3	Moulded case circuit breaker / isolator, similar or approved equal to CBI type indicated, complete with interconnecting tails, etc. installed in LV distribution kiosk, minisub, etc:						
D9.3.1	Triple pole - 80A to 100A, (G25D)	No.	10				
D9.3.2	- 175 to 225A, (F25D)	No.	10				
D9.3.3	- 250A (F25D)	No.	10				
D9.3.4	- 300 to 400A, (K35D)	No.	10				
D9.3.5	- 500 to 630A, (K35D)	No.	10				
D9.3.6	- 800A, (L35DN with shunt trip)	No.	10				
D9.3.7	- 800A, (L35DE with shunt trip)	No.	10				
D9.3.8	- 1 000A, (N85DN with shunt trip)	No.	10				
D9.3.9	- 800 to 1 600A, (N85DE with shunt	No.	10				
D9.3.10	- trip)	No.	10				
D9.3.11	Single pole - 100A, (JS25)	No.	10				
D9.3.12	- 250A, (JS25)	No.	10				
D9.4	Miscellaneous electrical control equipment complete with interconnecting tails, etc. installed in LV distribution kiosk, pole box, minisub, etc:						
D9.4.1	63A Rated bypass switch similar or equal to CBI QF-S-1(26) type.	No.	10				
D9.4.2	60A Rated three phase contactor	No.	10				
D9.4.3	Photocell light sensitive switch.	No.	10				
D9.4.4	Single phase Class 2 type surge arrester, similar or equal to CBI QFL-1(13) type	No.	10				
D9.4.5	Municipal Ripple Control Relay	Sum	10				
D9.5	600 / 1000 V PVC insulated copper conductors wiring drawn into conduit / cable tray, including terminations, etc. (Conduit / cable tray measured elsewhere):						
D9.5.1	16 mm ²	m	50				
D9.5.2	10 mm ²	m	50				
D9.5.3	6 mm ²	m	50				
D9.5.4	4 mm ²	m	50				
D9.5.5	2,5 mm ²	m	50				
D9.5.6	1,5 mm ²	m	50				
D9.6	Earth Fault Indicator similar or equal to the self resettable ISO Tech GFD-50E type, with split core current transformer.	No.	10				
D10.0	<u>Miscellaneous</u>						
D10.1	Municipal padlocks	Item	50				
D10.2	Disconnect, make safe and remove existing equipment and return same to Municipal Stores:						
D10.2.1	Miniature Substation (200 to 800 kVA)	Sum	5				
D10.2.2	Transformer (100 to 800 kVA)	Sum	5				
D10.2.3	Outdoor Switchgear, RMU, etc	Sum	5				
D10.3	Disconnect, make safe, uncover (± 1 000mm deep) and remove existing redundant buried MV / LV cable, including the return of same to Municipal stores:						
D10.3.1	25 to 50mm ² x 3 Core	m	50				
D10.3.2	70 to 120mm ² x 3 Core	m	50				
D10.3.3	150 to 240mm ² x 3 Core	m	50				

BILL D - UNDERGROUND RETICULATION (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
D10.4	Lump sum allowance for any items not included in this schedule necessary to complete the installation in accordance with the specification and drawings. Brief description of such items to be entered hereunder.	Sum	1				
TOTAL BILL D TO BE CARRIED FORWARD TO PRICE SUMMARY, ITEM 4							

BILL E - OVERHEAD RETICULATION

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
	NOTES						
(i)	All items to include for the supply, delivery and installation unless specified otherwise.						
(ii)	Bidders to note that the Municipality reserves the right to supply any material / equipment as a free issue item during the course of the contract, in which case the labour rate shall govern.						
(iii)	All quantities are provisional and are for comparative purposes only, and do not describe the extent of the work.						
(iv)	All rates must be exclusive of VAT.						
(v)	R / O - Rate Only						
E1.0	<u>Pole Mounted Transformers</u>						
E1.1	Supply and install pole mounted transformer equipment complete as specified on steel mounting cradle. Item to exclude steel mounting cradle and cable terminations measured elsewhere:						
E1.1.1	16kVA	No.	5				
E1.1.2	25kVA	No.	5				
E1.1.3	50kVA	No.	5				
E1.1.4	100kVA	No.	5				
E1.1.5	160kVA	No.	5				
E1.1.6	200kVA	No.	5				
E1.1.7	315kVA	No.	5				
E1.2	Hot dip galvanised steel work / cradle to support pole mounted transformer measured elsewhere, complete with bolts, nuts, washers, etc.:						
E1.2.1	16 to 25kVA	No.	5				
E1.2.2	50 to 160kVA	No.	5				
E1.2.3	200 to 315kVA	No.	5				
E2.0	<u>Pole Mounted / Overhead Line Equipment</u>						
E2.1	Programmable wireless overhead line fault Indicator similar or equal to the Surgetek type with LED indicator lamp for monitoring load current, fault events, outage / event history, etc installed on overhead line conductor.	No.	1				
E2.2	Pole mounted 11kV rated equipment complete as specified, but excluding mounted bracket measured elsewhere:						
E2.2.1	11kV - Expulsion fuses	No.	5				
E2.2.2	- Lightning arrestors	No.	5				
E2.2.3	- Triswitch disconnecter (Manual)	No.	5				
E2.2.4	- Triswitch disconnecter (Motorized)	No.	5				
E2.2.5	- Sectionalizer	No.	5				
E2.2.6	- Auto-Recloser	No.	5				
E2.3	Hot dip galvanised steel mounting bracket for pole mounted item of equipment measured elsewhere:						
E2.3.1	Expulsion fuses	No.	5				
E2.3.2	Lightning arrestors	No.	5				
E2.3.3	Triswitch disconnecter (Manual)	No.	5				
E2.3.4	Triswitch disconnecter (Motorized)	No.	5				
E2.3.5	Sectionalizer	No.	5				
E2.3.6	Auto-Recloser	No.	5				

BILL E - OVERHEAD RETICULATION (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
E3.0	<u>Excavation and Setting Out</u>						
E3.1	Arrange power shut-down with Municipality. Item to include delivery fee for distribution of notices to downstream affected consumers.	Sum	5				
E3.2	Excavating by hand , backfilling and compaction of hole for a pole, single stay, flying stay or prop structure:						
E3.2.1	Soft	m ³	60				
E3.2.2	Intermediate	m ³	60				
E3.2.3	Rock	m ³	5				
E3.3	Excavating by machine , backfilling and compaction of hole for a pole, single stay, flying stay or prop structure:						
E3.3.1	Soft	m ³	60				
E3.3.2	Intermediate	m ³	60				
E3.3.3	Rock	m ³	5				
E4.0	<u>Wooden Poles and Accessories</u>						
E4.1	Wooden pole with top diameter as specified, with pole cap and drilled for hardware, but excluding hardware and pole hole measured elsewhere:						
E4.1.1	14m pole (200 / 265mm diameters)	No	5				
E4.1.2	13 meter (180 / 245mm diameters)	No	5				
E4.1.3	12 meter (160 / 215mm diameters)	No	5				
E4.1.4	11 meter (160 / 210mm diameters)	No	50				
E4.1.5	11 meter (200 / 220mm diameters)	No	50				
E4.1.6	10m pole (160 / 205mm diameters)	No	5				
E4.1.7	9m pole (140 / 180mm diameters)	No	50				
E4.2	Single stay complete with insulator, but excluding stay hole and guard measured elsewhere.	No	50				
E4.3	Flying stay complete with insulators, but excluding pole and pole and stay holes measured elsewhere.	No	5				
E4.4	Prop structure complete excluding hole measured elsewhere.	No	5				
E4.5	Stay guard fixed to stay wire.	No	50				
E4.6	Wooden crossarm complete with M20 x 600mm long galvanized bolts, washers, etc:						
E4.6.1	7m Long	No	1				
E4.6.2	6m Long	No	1				
E4.6.3	3m Long	No	1				
E4.7	Pure silicone rubber long rod strain insulators complete as specified with thimble clevis, pins, etc.						
E4.7.1	11kV	No	30				
E4.8	Pure silicone rubber long rod suspension insulators complete as specified with bolts, nuts, washers, etc.						
E4.8.1	11kV	No	30				

BILL E - OVERHEAD RETICULATION (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
E4.9	Capless brown glazed porcelain line post insulators complete as specified with bolts, nuts, washers, etc.						
E4.9.1	11kV	No	30				
E4.10	Hot dip galvanised steel strain A-frame (MV line) complete with fixing bolts etc. but excluding insulators measured elsewhere.	No	50				
E4.11	Hot dip galvanised steel intermediate A-frame complete with fixing bolts, etc, but excluding insulators measured elsewhere.	No	50				
E4.12	Hot dip galvanised steel cross-arm drilled for hardware for T-off and right angle turns for MV lines.	No	5				
E4.13	300mm Long x 100mm Wide pole label, 80mm high black lettering on voltage specific background colour (11kV = white, 22kV = green, 66kV = yellow) , fixed to pole with four (4) clout nails.	No.	50				
E4.14	Danger sign label nailed to pole at minimum height of 3000mm above finished ground level using electro-galvanised clout nails.	No.	50				
E4.15	Barbed wire anti-climb device twisted around pole at 2m (min) above finished ground level. (Total of 1m of pole length to be covered.)	No.	5				
E4.16	Stainless steel bandit mounting straps securing items to pole structure,etc. including all buckles and fittings required:						
E4.16.1	±12mm Wide	m	25				
E4.16.2	±16mm Wide	m	25				
E5.0	<u>O/H Conductors</u>						
E5.1	XLPE insulated Aerial Bundled Conductor (ABC) strung and suspended between poles. Poles and clamps measured elsewhere:						
E5.1.1	6,35/11kV (Type B) - 95mm ² x 3C	m	150				
E5.1.2	- 70mm ² x 3C	m	150				
E5.1.3	- 50mm ² x 3C	m	150				
E5.1.4	- 35mm ² x 3C	m	150				
E5.1.5	600/1000V - 120mm ² x 4c + 25mm ² + streetlight	m	500				
E5.1.6	- 95mm ² x 4c + 25mm ² + streetlight	m	500				
E5.1.7	- 70mm ² x 4c + 25mm ² + streetlight	m	500				
E5.1.8	- 50mm ² x 4c + 25mm ² + streetlight	m	500				
E5.1.9	- 35mm ² x 4c + 25mm ² + streetlight	m	500				
E5.2	Strap and seal end of ABC at terminal pole:						
E5.2.1	6,35 / 11 kV, XLPE (Type B) ABC	No	10				
E5.2.2	600 / 1 000V, XLPE LV ABC	No	10				
E5.3	Strain clamp for ABC including all mounting hardware / brackets, eye / pigtail bolts, nuts, washers, etc:						
E5.3.1	6,35 / 11 kV, XLPE (Type B) ABC	No	20				
E5.3.2	600 / 1 000V, XLPE LV ABC	No	20				

BILL E - OVERHEAD RETICULATION (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
E5.4	Suspension clamp for ABC including all mounting hardware / brackets, eye / pigtail bolts, nuts, washers etc:						
E5.4.1	6,35 / 11 kV, XLPE (Type B) ABC	No	15				
E5.4.2	600 / 1 000V, XLPE LV ABC	No	15				
E5.5	Pole mounted heat shrink type midspan throughjoint for 6,35 / 11 kV, XLPE (Type B) ABC excluding mounting hardware measured elsewhere.						
E5.5.1	95mm ² x 3C	No	1				
E5.5.2	70mm ² x 3C	No	1				
E5.5.3	50mm ² x 3C	No	1				
E5.5.4	35mm ² x 3C	No	1				
E5.6	Pole mounted hot dipped galvanized (± 1 000mm long x 5mm thick) angle iron support frame / bracket for mounting of midspan throughjoint measured above, complete with all mounting hardware / brackets, bolt, nuts, washers etc.	No.	1				
E5.7	Pre-insulated type midspan throughjoint for LV ABC:						
E5.7.1	120mm ² x 4c + 25mm ² + streetlight	No	1				
E5.7.2	95mm ² x 4c + 25mm ² + streetlight	No	1				
E5.7.3	70mm ² x 4c + 25mm ² + streetlight	No	1				
E5.7.4	50mm ² x 4c + 25mm ² + streetlight	No	1				
E5.7.5	35mm ² x 4c + 25mm ² + streetlight	No	1				
E5.8	Connect one LV ABC to another using insulation piercing connectors:						
E5.8.1	120mm ² x 4c + 25mm ² + streetlight						
E5.8.2	95mm ² x 4c + 25mm ² + streetlight	No	5				
E5.8.3	70mm ² x 4c + 25mm ² + streetlight	No	5				
E5.8.4	50mm ² x 4c + 25mm ² + streetlight	No	5				
E5.8.5	35mm ² x 4c + 25mm ² + streetlight	No	5				
E5.9	O/H conductors strung between poles. Poles and clamps measured elsewhere:						
E5.9.1	HD copper - 16mm ² (3/2,65)	m	150				
E5.9.2	- 25mm ² (7/3,12)	m	150				
E5.9.3	- 40mm ² (7/2,65)	m	150				
E5.9.4	- 63mm ² (7/3,35)	m	150				
E5.9.5	- 80mm ² (7/3,75)	m	150				
E5.9.6	AAC - Centipede (37/3,78)	m	150				
E5.9.7	- Bull (61/4,25)	m	150				
E5.9.8	AAAC - 35 (7/2,77)	m	150				
E5.9.9	- Fir (7/2,95)	m	150				
E5.9.10	- Pine (7/3,61)	m	150				
E5.9.11	- Oak (7/4,65)	m	150				
E5.9.12	- Mulberry (19/3,18)	m	150				
E5.9.13	- Sycamore (37/3,23)	m	150				
E5.9.14	ACSR - Fox (6/1/2,79)	m	150				
E5.9.15	- Hare (6/1/4,72)	m	150				

BILL E - OVERHEAD RETICULATION (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
E5.10	One (1) full tension midspan through-joint in overhead conductor strung between poles:						
E5.10.1	HD copper - 16mm ² (3/2,65)	No	1				
E5.10.2	- 25mm ² (7/3,12)	No	1				
E5.10.3	- 40mm ² (7/2,65)	No	1				
E5.10.4	- 63mm ² (7/3,35)	No	1				
E5.10.5	- 80mm ² (7/3,75)	No	1				
E5.10.6	AAC - Centipede (37/3,78)	No	1				
E5.10.7	- Bull (61/4,25)	No	1				
E5.10.8	AAAC - 35 (7/2,77)	No	1				
E5.10.9	- Fir (7/2,95)	No	1				
E5.10.10	- Pine (7/3,61)	No	1				
E5.10.11	- Oak (7/4,65)	No	1				
E5.10.12	- Mulberry (19/3,18)	No	1				
E5.10.13	- Sycamore (37/3,23)	No	1				
E5.10.14	ACSR - Fox (61/2,79)	No	1				
E5.10.15	- Hare (61/4,72)	No	1				
E5.11	Terminate overhead conductor at strain insulators using "preformed" dead ends, etc:						
E5.11.1	HD copper - 16mm ² (3/2,65)	No	5				
E5.11.2	- 25mm ² (7/3,12)	No	5				
E5.11.3	- 40mm ² (7/2,65)	No	5				
E5.11.4	- 63mm ² (7/3,35)	No	5				
E5.11.5	- 80mm ² (7/3,75)	No	5				
E5.11.6	AAC - Centipede (37/3,78)	No	5				
E5.11.7	- Bull (61/4,25)	No	5				
E5.11.8	AAAC - 35 (7/2,77)	No	5				
E5.11.9	- Fir (7/2,95)	No	5				
E5.11.10	- Pine (7/3,61)	No	5				
E5.11.11	- Oak (7/4,65)	No	5				
E5.11.12	- Mulberry (19/3,18)	No	5				
E5.11.13	- Sycamore (37/3,23)	No	5				
E5.11.14	ACSR - Fox (61/2,79)	No	5				
E5.11.15	- Hare (61/4,72)	No	1				
E5.12	Bind-in overhead conductors at line post insulators using "preformed" twin-ties, armor rods, etc:						
E5.12.1	HD copper - 16mm ² (3/2,65)	No	15				
E5.12.2	- 25mm ² (7/3,12)	No	15				
E5.12.3	- 40mm ² (7/2,65)	No	15				
E5.12.4	- 63mm ² (7/3,35)	No	15				
E5.12.5	- 80mm ² (7/3,75)	No	15				
E5.12.6	AAC - Centipede (37/3,78)	No	15				
E5.12.7	- Bull (61/4,25)	No	15				
E5.12.8	AAAC - 35 (7/2,77)	No	15				
E5.12.9	- Fir (7/2,95)	No	15				
E5.12.10	- Pine (7/3,61)	No	15				
E5.12.11	- Oak (7/4,65)	No	15				
E5.12.12	- Mulberry (19/3,18)	No	15				
E5.12.13	- Sycamore (37/3,23)	No	15				
E5.12.14	ACSR - Fox (61/2,79)	No	15				
E5.12.15	- Hare (61/4,72)	No	15				
E5.13	Spiral bird flight diverters installed on overhead line conductors.	No.	6				
E5.14	Transmission line type vibration dampers installed on overhead line conductors:						
E5.14.1	Dog bone type, including armor grip, etc.	No.	6				
E5.14.2	Spiral type	No.	6				

BILL E - OVERHEAD RETICULATION (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
E5.15	± 3m long connections / jumpers between overhead conductors, circuits, equipment, etc. complete with torque shear type lugs and connectors. Item to include for insulation of full conductor length with heat shrink kit similar or equal to CIP type:						
E5.15.1	HD copper - 16mm ² (3/2,65)	No	15				
E5.15.2	- 25mm ² (7/3,12)	No	15				
E5.15.3	- 40mm ² (7/2,65)	No	15				
E5.15.4	- 63mm ² (7/3,35)	No	15				
E5.15.5	- 80mm ² (7/3,75)	No	15				
E5.15.6	AAC - Centipede (37/3,78)	No	15				
E5.15.7	- Bull (61/4,25)	No	15				
E5.15.8	AAAC - 35 (7/2,77)	No	15				
E5.15.9	- Fir (7/2,95)	No	15				
E5.15.10	- Pine (7/3,61)	No	15				
E5.15.11	- Oak (7/4,65)	No	15				
E5.15.12	- Mulberry (19/3,18)	No	15				
E5.15.13	- Sycamore (37/3,23)	No	15				
E5.15.14	ACSR - Fox (6/1/2,79)	No	15				
E5.15.15	- Hare (6/1/4,72)	No	15				
E5.16	Terminate insulated jumper conductors measured elsewhere at transformer, pole mounted switchgear, lightning arrestors, etc.	Sum	50				
E6.0	<u>Overhead Service Connections</u>						
E6.1	Pole mounted consumer service connection box (CSCB) strapped to pole similar or equal to the padlockable Polybox Polyethylene, GreenBro IP54 type fitted with neutral and earth bars and tails to connect to ABC line, but excl. MCB's and IPC connectors measured elsewhere.	No	50				
E6.2	IPC connectors to connect tails from consumer service connection box to ABC:						
E6.2.1	Single IPC connectors (Phases).	No.	150				
E6.2.2	Double IPC Connectors (Neutral & Earth).	No.	50				
E6.3	Pigtail screw for Airdac strain clamp measured elsewhere.	No.	50				
E6.4	Strain clamp for Airdac service cable at pole / house.	No.	100				
E6.5	10mm ² Cu SNE type Airdac service cable with pilot cores suspended between pole and house, excluding pole and fixtures measured elsewhere.	m	1000				
E6.6	Terminate and connect 10mm ² Cu Airdac service cable at CSCB measured elsewhere, including UV stable compression gland.	No.	50				
E6.7	Terminate and connect 10mm ² Airdac Cu service connection cable to pre-payment meter measured elsewhere, incl. compression gland.	No.	50				
E6.8	Small Power Distribution Unit (aka Ready Board), complete with bulkhead light fitting as specified, mounted with galvanised self tapping fixing screws.	No.	50				

BILL E - OVERHEAD RETICULATION (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
E7.0	<u>Earthing</u>						
E7.1	Hard drawn copper earth wire secured to pole or run inside kicker pipe, etc:						
E7.1.1	70mm ² Cu	m	50				
E7.1.2	50mm ² Cu	m	50				
E7.1.3	35mm ² Cu	m	50				
E7.1.4	25mm ² Cu	m	50				
E7.1.5	16mm ² Cu	m	50				
E7.2	Black PVC insulated copper earth wire secured to pole or run inside kicker pipe, etc:						
E7.2.1	70mm ² Cu	m	50				
E7.2.2	50mm ² Cu	m	50				
E7.2.3	35mm ² Cu	m	50				
E7.2.4	25mm ² Cu	m	50				
E7.2.5	16mm ² Cu	m	50				
E7.3	HD copper / black PVC insulated earth wire terminated at overhead steel structure, equipment, etc:						
E7.3.1	70mm ² Cu	No	50				
E7.3.2	50mm ² Cu	No	50				
E7.3.3	35mm ² Cu	No	50				
E7.3.4	25mm ² Cu	No	50				
E7.3.5	16mm ² Cu	No	50				
E7.4	16mm x 1,5m Copper bonded threaded earth spikes with clamp driven vertically into ground up to 4,5m deep.	No	10				
E8.0	<u>Miscellaneous</u>						
E8.1	Disconnect / uncover, make safe and remove redundant materials of existing overhead line and return same to Municipal stores (Item to include complete disassembly and stripping of redundant material into component parts for ease of storage):						
E8.1.1	± 9 to 14m Long tarred wooden pole	Sum	5				
E8.1.2	Stays	Sum	2				
E8.1.3	Props	Sum	2				
E8.1.4	Overhead MV / LV conductors.	m	150				
E8.1.5	Strain or suspension clamps, grips, etc.	Sum	15				
E8.1.6	Intermediate twin ties, binding wires, etc.	Sum	15				
E8.1.7	Strain / intermediate insulators.	Sum	15				
E8.1.8	Pole mounted A-frames, steel brackets, cradles or other mounting hardware.	Sum	1				
E8.1.9	MV item of equipment, i.e. transformer, recloser, sectionalizer, fuse, lighting arrestors, triswitch, etc.	No.	1				
E8.2	Polyethylene pole mounted enclosure of approximate dimensions indicated complete with wooden backplate, etc similar or equal to Golnix AP type.						
E8.2.1	920mm long x 520mm wide x 275mm deep	No.	5				
E8.2.2	605mm long x 450mm wide x 175mm deep	No.	5				
E8.2.3	450mm long x 400 mm wide x 190mm deep	No.	5				

BILL E - OVERHEAD RETICULATION (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
E8.3	Galvanised steel kicker pipe for cable secured to pole, measured elsewhere:						
E8.3.1	75mm Ø.	m	5				
E8.3.2	50mm Ø.	m	5				
E8.3.3	40mm Ø.	m	5				
E8.3.4	25mm Ø.	m	5				
E8.3.5	20mm Ø.	m	5				
E8.4	Reinforced concrete footpiece / slab (600mm x 600mm width / length x 200mm thick) installed inside pole hole measured elsewhere.	No.	1				
E8.5	Lump sum allowance for any items not included in this schedule necessary to complete the installation in accordance with the specification and drawings. Brief description of such items to be entered hereunder.						
		Sum	1				
TOTAL BILL E TO BE CARRIED FORWARD TO PRICE SUMMARY, ITEM 5							

BILL F - STREET AND HIGHMAST LIGHTING

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
	NOTES						
(i)	All items to include for the supply, delivery and installation unless specified otherwise.						
(ii)	Bidders to note that the Municipality reserves the right to supply any material / equipment as a free issue item during the course of the contract, in which case the labour rate shall govern.						
(iii)	All quantities are provisional and are for comparative purposes only, and do not describe the extent of the work.						
(iv)	All rates must be exclusive of VAT.						
(v)	R / O - Rate Only						
D1.0	<u>Highmast Lights</u>						
D1.1	Arrange for existing Municipal portable raising and lowering device held by Municipality including transport to and from high mast site and all other Municipal hiring charges as required.						
		Sum	1				
D1.2	Raising and lowering of mast / carriage to access existing lighting equipment, etc using portable raising and lowering device measured elsewhere.						
D1.2.1	30m Mast	Sum	1				
D1.2.2	18 Mast	Sum	1				
D1.3	Modify existing light carriage to accept new LED luminaire measured elsewhere, including touch-up of exposed steel areas with cold galv and paint, as well as all drilling, mounting hardware, bolts, nuts, etc.						
		Sum	9				
D1.4	Install and connect <u>free issue</u> LED type floodlight luminaires including all brackets, etc mounted on high mast carriage:						
D1.4.1	216W (max) / 27 980 lm (min)	Item	5		Nil		
D1.4.2	463W (max) / 54 501 lm (min)	Item	5		Nil		
D1.4.3	495W (max) / 59 320 lm (min)	Item	5		Nil		
D1.4.4	990W (max) / 118 640 lm (min)	Item	5		Nil		
D1.4.5	1 480W (max) / 177 960 lm (min)	Item	5		Nil		
D1.5	IP65 Rated supply terminal splitter boxes, terminations, connectors, etc for connection of supply cabling to lights, but excluding surfix wiring and cabling measured elsewhere.						
		No.	9				
D1.6	Set luminaire aiming positions (per mast) and test illumination levels and submit test result to engineer.						
		Sum	1				
D1.7	Disconnect, make safe and remove redundant materials of existing highmast installation and return same to Municipal stores:						
D1.7.1	± 18 to 30m high mast	No.	1				
D1.7.2	Existing light fittings	No.	9				

BILL F - STREET AND HIGHMAST LIGHTING (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
D2.0	<u>Streetlights</u>						
D2.1	Install and connect free issue LED type streetlight luminaires including all brackets, etc mounted on streetlight pole measured elsewhere:						
D2.1.1	Streetlight - 276W (max) / 33 265 lm (min)	No.	5		Nil		
D2.1.2	- 148W (max) / 19 195 lm (min)	No.	5		Nil		
D2.1.3	- 108W (max) / 11 612 lm (min)	No.	5		Nil		
D2.1.4	- 38W (max) / 4 831 lm (min)	No.	5		Nil		
D2.1.5	Post Top - 55W (max) / 6 490 lm (min)	No.	5		Nil		
D2.2	Paint bottom of new streetlight pole to \pm 500mm above ground level using black bitumen type paint.	No.	10				
D2.3	Disconnect, make safe and remove redundant streetlight materials and return same to Municipal stores:						
D2.3.1	\pm 5 to 13m long streetlight pole, with \pm 2m outreach arm	No.	10				
D2.3.2	Existing streetlight luminaires	No.	15				
D3.0	<u>Miscellaneous</u>						
D3.1	Lump sum allowance for any items not included in this schedule necessary to complete the installation in accordance with the specification and drawings. Brief description of such items to be entered hereunder.	Sum	1				
TOTAL BILL F TO BE CARRIED FORWARD TO PRICE SUMMARY, ITEM 6							

BILL G - BUSH CLEARANCE

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
	NOTES						
(i)	All items to include for the supply, delivery and installation unless specified otherwise.						
(ii)	Bidders to note that the Municipality reserves the right to supply any material / equipment as a free issue item during the course of the contract, in which case the labour rate shall govern.						
(iii)	All quantities are provisional and are for comparative purposes only, and do not describe the extent of the work.						
(iv)	All rates must be exclusive of VAT.						
(v)	R / O - Rate Only						
G1.0	<u>Bush Clearance</u>						
G1.1	Bush clearance and vegetation management, including removal and disposal of waste / cut material at an approved off-site facility and treatment of stumps, etc with an approved herbicide to prevent regrowth:						
G1.1.1	Medium Density (Combination of grasses and shrubs from 50–150mm stump diameter).	m ²	5 000				
G1.1.2	High Density (Combination of dense infestations of woody shrubs and trees greater than 150mm stump diameter)	m ²	5 000				
G1.2	Extra-over cost on Item indicated for excessively steep slopes or difficult to access terrain:						
G1.2.1	Item G1.1.1	m ²	1 000				
G1.2.2	Item G1.1.2	m ²	1 000				
G1.3	Tree felling, including removal and disposal of waste / cut material at an approved off-site facility and treatment of stumps with an approved herbicide to prevent regrowth:						
G1.3.1	300 – 500mm Stump diameter	Sum	10				
G1.3.2	500 – 750mm Stump diameter	Sum	5				
G1.3.3	Greater than 750mm stump diameter	Sum	2				
G1.4	Extra-over cost on Item indicated for excessively steep slopes or difficult to access terrain:						
G1.4.1	Item G1.3.1	Sum	1				
G1.4.2	Item G1.3.2	Sum	1				
G1.4.3	Item G1.3.3	Sum	1				
G1.5	Cutting of grassed areas	m ²	1 000				
G1.6	Spraying / application of herbicide to prevent future growth.	m ²	1 000				
G2.0	<u>Miscellaneous</u>						
G2.1	Lump sum allowance for any items not included in this schedule necessary to complete the installation in accordance with the specification and drawings. Brief description of such items to be entered hereunder.						
		Sum	1				
TOTAL BILL G TO BE CARRIED FORWARD TO PRICE SUMMARY, ITEM 7							

BILL H - FIBRE INSTALLATION

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
	NOTES						
(i)	All items to include for the supply, delivery and installation unless specified otherwise.						
(ii)	Bidders to note that the Municipality reserves the right to supply any material / equipment as a free issue item during the course of the contract, in which case the labour rate shall govern.						
(iii)	All quantities are provisional and are for comparative purposes only, and do not describe the extent of the work.						
(iv)	All rates must be exclusive of VAT.						
(v)	R / O - Rate Only						
H1.0	<u>Underground Fibre Installation</u> (Trenching / reinstatement work measured under Bill D hereof)						
H1.1	Excavation, backfilling and compaction of 1m x 1m x 1m hole for PVC type manhole measured elsewhere. Item to include for re-instatement of tar / paving around manhole following installation thereof.						
H1.1.1	Soft	m ³	2				
H1.1.2	Intermediate	m ³	2				
H1.1.3	Rock	m ³	1				
H1.2	Install 810mm high x 600 mm Ø prefabricated PVC type manhole as specified complete with road way frame installed inside excavated hole measured elsewhere.	No.	5				
H1.3	Install heavy duty polymer type manhole cover with galvanised steel locking mechanism similar or equal to Maverick 2A type for PVC manhole mentioned in Item F1.2 above.	No.	5				
H1.4	Install 7 way (12 / 10mm), high density polyethylene mini-duct inside trench / sleeve / pipe measured elsewhere.	m	2000				
H1.7	Install 7 Way, high density polyethylene mini-duct joining kit / couplers.	No.	1				
H2.0	<u>Aerial Fibre Installation</u>						
H2.1	Long span non-metallic self support aerial ADSS single mode fibre optic cable suspended between poles measured elsewhere:						
H2.1.1	24 Fibre count	m	1000				
H2.1.2	72 Fibre count	m	1000				
H2.2	Terminate ADSS aerial fibre optic cable at pole using "Preformed" dead end including bolts, nuts, eye nuts, washers, thimble clevis, etc:						
H2.2.1	24 Fibre count	No.	10				
H2.2.2	72 Fibre count	No.	10				
H2.3	Terminate ADSS aerial fibre optic cable at suspension pole using armor-grip suspension unit complete with AGS bolt, locknut, washer, clevis tongue, etc.						
H2.3.1	24 Fibre count	No.	10				
H2.3.2	72 Fibre count	No.	10				
H2.4	Spiral vibration damper for ADSS fibre optic aerial cable.	No.	6				

BILL H - FIBRE INSTALLATION (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
H2.5	Download cushion clamp complete for ADSS fibre optic aerial cable, incling bolts, nuts, etc:						
H2.5.1	24 Fibre count	No.	5				
H2.5.2	72 Fibre count	No.	5				
H3.0	<u>Specialist Fibre Services</u>						
H3.1	High pressure duct integrity testing by Specialist Sub-Contractor including capping and sealing of internal cores with appropriate duct end caps:						
H3.1.1	Labour	Hour	40				
H3.1.2	Travel	km	1000				
H3.2	Single mode blown fibre cable as specified run inside mini-ducts / sleeves / manholes / cable tray measured elsewhere using the blowing / floating method:						
H3.2.1	72 Core	m	750				
H3.2.2	48 Core	m	15				
H3.2.3	12 Core	m	15				
H3.3	Install splice through joint for single mode optic fibre cable complete with waterproof dome enclosure inside manhole measured elsewhere:						
H3.3.1	72 Core	No.	5				
H3.3.2	48 Core	No.	5				
H3.3.4	12 Core	No.	5				
H3.4	Through-joint for ADSS aerial fibre optic cable complete with splice dome enclosure at pole:						
H3.4.1	24 Fibre count	No.	5				
H3.4.2	72 Fibre count	No.	5				
H3.4.3	12 Core	No.	5				
H3.5	Install splice tray and patch panel of capacity indicated inside rack type enclosure inside building:						
H3.5.1	72 Core	No.	1				
H3.5.2	48 Core	No.	1				
H3.5.3	12 Core	No.	1				
H3.6	Cost per point for termination and splicing of fibre optic cable inside patch / splice enclosures and termination boxes measured elsewhere, including all ferrules, connectors, boots, etc required.	No.	40				
H3.7	OTDR testing and report of fibre installation.	Sum	6				
H3.8	Preliminary and General expenses per person per day over and above those allowed elsewhere for Specialist Fibre Sub-Contractor.	Day	5				

BILL F - FIBRE INSTALLATION (Contd.)

ITEM	DESCRIPTION	UNIT	QTY	MATERIAL		LABOUR	
				RATE	TOTAL	RATE	TOTAL
H4.0	<u>Miscellaneous</u>						
H4.1	Lump sum allowance for any items not included in this schedule necessary to complete the installation in accordance with the specification and drawings. Brief description of such items to be entered hereunder.	Sum	1				
TOTAL BILL H TO BE CARRIED FORWARD TO PRICE SUMMARY, ITEM 8							

PRICE SUMMARY

ITEM	DESCRIPTION	MATERIAL	LABOUR
1.0	Bill A: Preliminary And General Items		
2.0	Bill B: Civil Work		
3.0	Bill C: MV Substation		
4.0	Bill D: Underground Reticulation		
5.0	Bill E: Overhead Reticulation		
6.0	Bill F: Street and Highmast Lighting		
7.0	Bill G: Bush Clearance		
8.0	Bill H: Fibre Installation		
9.0	Sub-Totals from Priced BOQ		
10.0	TOTAL MATERIAL AND LABOUR		
11.0	ADD 15 % VAT		
12.0	GROSS TENDER AMOUNT TO BE CARRIED FORWARD TO FORM OF OFFER AND ACCEPTANCE IN PART C1.1 HEREOF (See Important Note Below)		
<p>Important Note: All quantities are provisional only with the intention in this regard to obtain a schedule of rates for tender and comparative purposes, and do not describe the extent of the work. The total value as per this Price Summary shall therefore be in no way construed as to describing the final project value of the works.</p>			
<p>Name of Tenderer:</p>			
<p>Signature of Tenderer: Date:</p>			
<p>Address: Tel No.</p> <p>..... Fax No.</p> <p>.....</p>			
<p>Email Address:</p>			