

Project No: ZNB 5766/2024-H
Project: Thulasizwe Clinic - Tender
ELECTRICAL AND ELECTRONIC

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Item No.	Item	Quantity	Rate	Total
	BILL 01 - ELECTRICAL INSTALLATION POWER & LIGHTING <i>(Refer to Electrical Specification:)</i> DISTRIBUTION BOARDS <i>Refer to Site Schematic for layout and equipment requirements</i> Supply and Install Distribution boards complete with doors, frames, sub-frames, chassis fixtures, switchgear, terminations, bus-bars and wiring, labelling and line diagrams as specified. Minimum 30% spare space to be allowed in each DB. As per schematic. Refer to drawing: DNA-TC-ELE-SC-1009-00 Existing Main Incoming Supply: Modify Existing Main incoming Supply Panel to split New Feed to new works and existing feed to Thulasizwe Hospital, Per specifications and schematic. To Include: - New 300A C/B to new Thulasizwe Clinic - New 630A feed to Existing to Thulasizwe Hospital - Able to be Joined to DB-Main CHANGE-OVER PANEL: 300 Amp floor standing Change-Over Panel in DB Room. Per specifications and schematic. To Include: - Operation Selection Switch - By-pass switch - Able to be Joined to DB-Main DB-MAIN: Floor standing Main Switchboard in DB Room. Per specifications and schematic. Including: - 1 x Elster A1700 or Equivalent, 3 phase Polyphase meter with CT & VT connection up to 300Amp. Meters to include RS485 modules and 1 x GSM communication module for BMS Connection DB-CD/CD(U)/CD(S): Recessed Distribution Board. Per specifications and schematic. To include sections for Normal Power, UPS and Solar and necessary signage and warning labels DB-EF/EF(U)/EF(S): Recessed Distribution Board in Ground Floor. Per specifications and schematic. To include sections for Normal Power, UPS and Solar and necessary signage and warning labels DB-G/G(U)/G(S): Recessed Distribution Board. Per specifications and schematic. To include sections for Normal Power, UPS and Solar and necessary signage and warning labels DB-AM/AM(U)/AM(S): Recessed Distribution Board. Per specifications and schematic. To include sections for Normal Power, UPS and Solar and necessary signage and warning labels DB-A/A(U)/A(S): Recessed Distribution Board. Per specifications and schematic. To include sections for Normal Power, UPS and Solar and necessary signage and warning labels DB-H/H(U)/H(S): Recessed IP65 Distribution Board. Per specifications and schematic. To include sections for Normal Power, UPS and Solar and necessary signage and warning labels DB-PH: Floor standing Weather proof Distribution board on Roof. Per specifications and schematic	No	1	
		No	1	
		No	1	
		No	1	
		No	1	
		No	1	
		No	1	
		No	1	
		No	1	
		No	1	

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	DB-R1: Recessed Distribution Board. Per specifications and schematic.	No 1		
	DB-R2: Recessed Distribution Board. Per specifications and schematic.	No 1		
	DB-R3: Recessed Distribution Board. Per specifications and schematic.	No 1		
	DB-R4: Recessed Distribution Board. Per specifications and schematic.	No 1		
	DB-R5: Recessed Distribution Board. Per specifications and schematic.	No 1		
	DB-R6: Recessed Distribution Board. Per specifications and schematic.	No 1		
	DB-PH: Recessed IP65 Distribution Board. Per specifications and schematic.	No 1		
	CONDUITS & CONDUIT BOXES Supply and installation of conduit and boxes as specified for lighting, power and auxiliary outlets, including couplings, bushes, locknuts, bending, draw boxes and fixing, etc in accordance with metallic conduit and accessories as per SANS 60614 and non-metallic conduit and accessories as per SANS 950			
	PLAIN ENDED METALLIC GALVANISED BOSAL CONDUIT			
	25 mm on surface of brickwork or concrete	m 400		
	50mm Round boxes in roof space or surface mounted.	No 70		
	NON-METALLIC PVC CONDUIT Built into brickwork, laid in concrete or surface mounted on slab in ceiling void			
	20mm	m 3400		
	25mm	m 2050		
	32mm	m 550		
	50mm	m 350		
	32mm bends	No 50		
	50mm bends	No 120		
	50mm Diam x 20mm Round boxes	No 220		
	50mm Diam x 25mm Round boxes	No 510		
	PVC boxes			
	100 x 50 x 50mm PVC boxes built into brick or concrete	No 150		
	100 x 100 x 50mm deep PVC boxes built into brick or concrete	No 185		
	100 x 100 PVC blank covers for data/telephone outlets	No 120		
	Pressed galvanized steel boxes			
	100 x 50 x 50mm deep galvanized boxes built into brick or concrete	No 131		
	100 x 100 x 50mm deep galvanized boxes built into brick or concrete	No 213		

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	DUCTS & POWER SKIRTING Power skirting - Supply and installation of surface mounted power skirting and accessories as specified in the detail specification, complete with cover - plug assemblies not included.			
	2-Compartment power skirting complete with cover (Aluminium, black) m	250		
	End caps for 2-Compartment power skirting (Aluminium, black) No	63		
	TRUNKING Supply and installation of galvanized wiring duct to be installed in the positions as indicated on the drawings including splices etc. The rate shall include for the fixing of wiring duct in a horizontal/Vertical position against the wall by means of suitable cantilever support arms and raw bolts, or alternatively by means of suspended Hangers in a horizontal position from the soffit by means of M10 mm threaded metal rod hangers with anchor bolts at intervals not exceeding 1000mm. Including all splice sets, screws & nuts. Straight wiring duct (including off sets) for:			
	Supply and installation of surface mounted Trunking as specified in the detail specification. 40mm X 40mm Cable Trunking (PVC, WHITE) m	600		
	P8000, 76mm x 76mm x 1mm Galvanized trunking complete with covers, supports and accessories as per manufacturers specification. To include hangers m	750		
	P9000, 127 x 100mm x 1mm Galvanized trunking complete with covers, supports and accessories as per manufacturers specification. To include hangers m	750		
	P1000, 41mm x 41mm x 2.5mm Galvanized trunking complete with supports and accessories as per manufacturers specification. For Wire ways mounting. m	308		
	Elbows, bends, Tee and 4 way crossing			
	P8000, 76mm x 76mm x 1mm Galvanized trunking Elbows, Bends, Tee & 4way crossing No	50		
	P9000, 127 x 100mm x 1mm Galvanized trunking Elbows, Bends, Tee & 4way crossing No	50		
	CIRCUIT WIRING, CABLING & OUTLET POINTS			
	PVC CONDUCTORS Supply and drawn in of copper PVC insulated conductors in conduit or trunking system in floor or in roof space for lights, plugs and power points, including connection to switches and equipment. For Live, Neutral and Earth.			
	1,5 mm ² (Live) m	100		
	1,5 mm ² (Neutral) m	100		
	2,5 mm ² (Live) m	8380		
	2,5 mm ² (Neutral) m	8380		
	2,5 mm ² (Earth) m	11830		
	4 mm ² (Live) m	3350		

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	4 mm ² (Neutral)	m	3350	
	6 mm ² (Earth)	m	5850	
	6 mm ² (Live)	m	2100	
	6 mm ² (Neutral)	m	2100	
	LIGHT SWITCHES			
	Supply, installation and connection of 16 Amp light switches in flush 100 x 50 x 50 mm galvanised steel wall boxes, including white coloured cover plates.			
	1 lever	No	90	
	Two way 1 lever	No	8	
	2 lever	No	4	
	Weatherproof IP65, 1 lever	No	5	
	1 Lever Dimmer Unit	No	1	
	2 Lever Dimmer Unit	No	1	
	SWITCHED SOCKET OUTLETS			
	Supply, installation and connection of 16Amp switched socket outlets in 100 x 100 x 50mm galvanised steel wall boxes with white coloured cover plates			
	16Amp 3-Pin SSO with One Type M and two type N euro Sockets Mounted on Wall - Type A	No	130	
	16Amp 3-Pin SSO with one Type M and two type N Euro Sockets Mounted on Wall connected to UPS Circuits. Blue Cover - Type Au	No	13	
	16Amp3-Pin SSO one Type M and two type N Euro Sockets Mounted in ceiling Void - Type C	No	10	
	Floor Box, with 3x 16Amp 3-Pin SSO with One Type M and two type N euro Sockets, 2x RJ45 Points & 2x HDMI input/output	No	2	
	16 Amp Single 3-pin SSO with one type M, in Weatherproof, IP65 slide box. To include slide box - Type F	No	12	
	Supply, installation and connection of 16Amp switched socket outlets in single, two or three compartment power skirting or Power Pole.			
	16Amp 3-Pin SSO with one Type M and two type N Euro Sockets Mounted on power skirting connected to UPS Circuits. Blue Cover - Type Bu	No	85	
	16Amp 3-Pin SSO with one Type M and two type N Euro Sockets Mounted on power skirting connected to UPS Circuits. Blue Cover - Type B	No	50	
	UN-SWITCHED SOCKET OUTLETS			
	Supply and install 5amp plugs complete with round boxes in ceilings or roof spaces or on Slab/P9000 Trunking/Steel Structures as required	No	500	
	TELEPHONE AND DATA			

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	Supply, installation and termination of data and telephone points in 100 x 100 x 50mm boxes with white coloured cover plates			
	RJ45 Outlet Points for DATA Including Module inserts	No 30		
	RJ11 Outlet Points for Telephone Including Module inserts	No 30		
	Supply, installation and termination of data and telephone points in single, two or three compartment power skirting or Power Pole.			
	RJ45 Outlet Points for DATA Including Module inserts	No 55		
	RJ11 Outlet Points for Telephone Including Module inserts	No 55		
	ISOLATORS			
	Supply, installation and connection of isolator in Polypropylene extension box			
	20 Amp 2 pole 230V	No 81		
	20 Amp 2 pole 230V complete with weather proof slide box.	No 8		
	40 Amp 2 pole 230V	No 14		
	20 Amp 4 pole 400V	No 8		
	20 Amp 4 pole 400V complete with weather proof slide box.	No 7		
	63 Amp 4 pole 400V	No 6		
	63 Amp 4 pole 400V complete with weather proof slide box.	No 7		
	box.	No 2		

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	CABLE TRAYS, LADDERS & WIRE MESH Supply and installation of galvanized cable trays, Ladders & Wire mesh to be installed in the positions as indicated on the drawings including all supports, splices, bonding, etc. The rate shall include for the fixing of cable tray in a horizontal/Vertical position against the wall by means of suitable cantilever support arms and raw bolts, or alternatively by means of 41mm x 41mm trunking (P1000) suspended in a horizontal position from the soffit by means of M10mm threaded metal rod hangers with anchor bolts at intervals not exceeding 1000mm. Pricing to include all splice sets, screws & nuts, bonding and mounting. Straight cable ladder (including off sets) for:			
	150mm width x 76mm Height x 2.0mm thick cable Ladder (Heavy Duty) for Electrical Cables including supports	m	100	
	150mm cable Ladder Covers for Electrical Cables Covers only for exposed cable trays	m	70	
	300mm Width x 100mm Height x 5mm thick cable tray Perforated (Heavy Duty) for DATA and TELEPHONE Cables	m	650	
	300mm Width x 100mm Height thick perforated cable tray (Heavy Duty) for Electrical Cables	m	650	
	Elbows, bends, Tee and 4 way crossing			
	150mm cable Ladder (Heavy Duty) 90° Bends	No	4	
	150mm cable Ladder (Heavy Duty) Tee	No	2	
	150mm cable Ladder (Heavy Duty) 4 way Cross over	No	1	
	150mm cable Ladder (Heavy Duty) Elbow (Droppers & Risers)	No	4	
	150mm cable Tray (Heavy Duty) 90° Bends	No	6	
	150mm cable Tray (Heavy Duty) Tee	No	2	
	150mm cable Tray(Heavy Duty) 4 way Cross over	No	2	
	150mm cable Tray (Heavy Duty) Elbow (Droppers & Risers)	No	2	
	300mm cable Baskets Wire mesh (Heavy Duty) 90° Bends	No	20	
	300mm cable Baskets Wire mesh (Heavy Duty) Tee	No	15	
	300mm cable Baskets Wire mesh (Heavy Duty) 4 way Cross over	No	15	
	300mm cable Baskets Wire mesh (Heavy Duty) (Droppers & Risers)	No	25	
	LIGHTING Supply, Installation and Commissioning of Luminaires. Note that all luminaires are subject to approval by the Engineer prior to purchase. (Refer to Luminaire Schedule for Details) All luminaires specified below have been used for the design. The supplier to provide specified fittings subject to approval by the Engineer.			

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	Alternate fittings proposed will only be considered if cost saving, better quality and longer guarantee is provided and subject to approval by the engineer, architect and client.			
	Type A 60W, LED 1200mm X 600mm Panel, ceiling mount, recessed Luminaire complete with 3m lead with 5 amp plug top.	No 137		
	Type A (E) As per light type "A" with emergency back-up battery with 3m lead with 5 amp plug top.	No 29		
	Type B Round Recessed, 15W Adjustable up to 90°, 4000K LED Downlight interior luminaire with 3m lead with 5 amp plug top.	No 244		
	Type B (E) As per light type "B" with emergency back-up battery with 3m lead with 5 amp plug top.	No 28		R 0.00
	Type C 1200mm surface mount, 40W, 4000K, LED luminaire with 3m lead with 5 amp plug top. Vapour Proof.	No 35		
	Type C (E) As per light type "C" with emergency back-up battery with 3m lead with 5 amp plug top.	No 13		
	Type D Aluminium frame, IP65, 40W, LED Floodlight Luminaire. Complete with all necessary accessories.	No 46		R 0.00
	Type E Slim, 8W, surface mounted exit light, 4000K, cool white, Aluminium Frame LED luminaire with emergency back-up battery. To be supplied complete with 3.6V Ni-MH batteries and signage. Control Gear: 180 - 250 Volts, with surge protection. Supplied complete with 3m flex cable and 5 amp plug top. Construction to be polycarbonate with rear cable entries. Supplied complete with 3m flex cable and 5 amp plug top.	No 26		
	Type F Ceiling Mounted LED Medical Procedure Luminaire, Min 130000Lux. With 3m lead with 5 amp plug top.	No 2		
	Type G 25W Wall mounted, IP65, 4000K, LED Bulkhead, High-pressure die-cast aluminium Luminaire	No 28		
	Type H Including 12m Buried Pole, Die-cast, aluminium, IP66. high powered 300W LED mounted on 12m Stepped buried Pole. Minimum lumen output of 35000 Lumens. Protector: Glass. 12m MH, 0 to 60 degree mounting, 300W luminaire. To include access door MCB's, 12m pole. All fasteners to be stainless steel. Nominal voltage of 198-264V, 50Hz. Light output colour: 5700 Kelvin (Cool white).	No 23		
	Uninterruptable Power Supply Supply an install uninterrupted power supply (UPS). Refer to Specification Supply an install 25kVA Three Phase 400V IN, 400V OUT, Free Standing UPS unit. Minimum 60 minute backup on full load.	Item 1		

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	DB-UPS: Recessed Distribution Board. Per specifications and schematic. necessary signage and warning labels	No	1	
	Isolation Transformers Supply an install Isolation Transformer (ITX). Refer to Specification Supply an install 5kVA 230V IN, 230V OUT, Floor mounted Isolation transformer unit.	Item	24	
	COPPER PVC/SWA/PVC CABLES <i>Supply and installation of copper PVC/SWA/PVC/ECC cables laid in ducts, trenches, horizontal racks or vertical ducts. Rates shall include the supply and fixing of supports with regard to installation of cables. Rates shall include the PVC cable ties as required. All cables are Copper PVC/SWA/PVC/ECC cables per SANS 1507.</i>			
	240sq mm 4-C XLPE/SWA/PVC/ECC	m	552	
	150sq mm 4-C XLPE/SWA/PVC/ECC	m	5	
	95sq mm 4-C PVC/SWA/PVC/ECC	m	120	
	70sq mm 4-C PVC/SWA/PVC/ECC	m	10	
	50sq mm 4-C PVC/SWA/PVC/ECC	m	244	
	35sq mm 4-C PVC/SWA/PVC/ECC	m	521	
	25sq mm 4-C PVC/SWA/PVC/ECC	m	204	
	16sq mm 4-C PVC/SWA/PVC/ECC	m	1207	
	10sq mm 4-C PVC/SWA/PVC/ECC	m	1260	
	6sq mm 4-C PVC/SWA/PVC/ECC	m	120	
	Termination of copper PVC/SWA/PVC/ECC cables in DB's, Kiosks and metering panel. Rates shall include the supply and installation of glands, shrouds, lugs, nuts, bolts and washers as required.			
	240sq mm 4-C XLPE/SWA/PVC/ECC	No	4	
	150sq mm 4-C XLPE/SWA/PVC/ECC	No	1	
	95sq mm 4-C PVC/SWA/PVC/ECC	No	6	
	70sq mm 4-C PVC/SWA/PVC/ECC	No	1	
	50sq mm 4-C PVC/SWA/PVC/ECC	No	8	
	35sq mm 4-C PVC/SWA/PVC/ECC	No	18	
	25sq mm 4-C PVC/SWA/PVC/ECC	No	12	
	16sq mm 4-C PVC/SWA/PVC/ECC	No	42	
	10sq mm 4-C PVC/SWA/PVC/ECC	No	20	
	6sq mm 4-C PVC/SWA/PVC/ECC	No	20	
	SLEEVES			

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	Supply and installation of HDPE sleeves buried in ground as specified for ICT & data services, including couplings in accordance with non-metallic sleeves and accessories as per SANS 61386-24. Note that all sleeves under buildings and hardern surfaces will be encased in concrete (Refer to Electrical site plan) by the building contractor. Concrete is measured in Building BoQ.			
	50mm Flexible double walled black corrugated sleeves including 6mm pilot string as draw wire in each sleeve	m	840	
	110mm Flexible double walled black corrugated sleeves including 6mm pilot string as draw wire in each sleeve	m	3000	
	160mm Flexible double walled black corrugated sleeves including 6mm pilot string as draw wire in each sleeve	m	500	
	Warning Tape in Trenching	m	3500	
	MANHOLES			
	Construction of watertight manholes in ground as specified for electrical, ICT & data services, including, lockable cover, seals ,bushes, sleeve entries and end caps. Inclusive of cover and frame (Cover and frame - colour: GREY) including engraving on cover to read : "ICT" for ICT manholes and "ELECTRICAL" for electrical manholes Refer to drawing: DNA-TC-ELE-DE-1010-00 ELECTRICAL DETAILS To include: - 300 x 300mm bidem bag with 19mm stone for soak away. - Plinth, brickwork, frame cover, waterproofing, drainage, sleeve stubs and end caps for spare pipes. - All sleeves to be foam sealed after cable installation to prevent water ingress into manholes.			
	960mm x 960mm x 960mm deep (Internal dimensions) manhole - electrical / ICT with Heavy duty, 600mm cover.	No	24	
	EXCAVATIONS, BACKFILL AND COMPACTION			
	Excavate for sleeves and cabling including temporary support of sides, keeping excavation dry, bedding material, backfilling, compacting and testing as specified. All backfill material to be suitable as per SANS codes and engineers approval. Backfill material to be imported if necessary. The rate shall include backfilling, compaction to 93% MOD AASHTO density, and where necessary the supply and transportation of suitable ground as may be required to receive the desired compaction, except where cement is specified. The removal of Boulders from existing excavations will be rated as Soft rock..			
	In soft or pickable soil (60%)	m ³	450	
	In Soft rock (20%)	m ³	120	
	In hard rock (20%)	m ³	80	
	Compaction Test via Troxler testing by soils laboratory with test results.	No	10	
	ELECTRICAL KIOSKS Refer to Site Schematic for layout and equipment requirements			R 0.00

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	Supply and Install Distribution Kiosks complete with doors, frames, sub-frames, chassis fixtures, switchgear, terminations, bus-bars and wiring, labelling and line diagrams as specified. Including Plinth. Minimum 30% spare space to be allowed in each Kiosk. As per schematic: DNA-TC-ELE-SC-1009-00			
	LVK 1: Floor standing on Plinth, Low Voltage Kiosk. Per specifications and schematic.	No	1	
	EARTHING AND LIGHTNING PROTECTION (Refer to Electrical Specification) Supply and Installation of Earthing & Lightning Protection per SANS 10313, 62305 and 10142. To be undertaken by specialist earthing and lightning contractor. Provide Earth loop around buildings as per drawings complete with earth rods and bonding to rebar and building structural columns.			
	CONDUCTORS Copper earth conductors installed in trenches, sleeves and in earth trench. Terminations to include drilling, bolting, connections, sealing and testing. Only cadweld joints will be allowed.			
	70 mm ² bare Copper Earth Wire (BCEW)	m	1010	
	70 mm ² PVC covered Copper Earth Wire (CEW)	m	141	
	50 mm ² bare Copper Earth Wire (BCEW) for bonding of re-bar	m	230	
	50 mm ² covered Copper Earth Wire (CEW) for bond to columns and roof sheeting	m	240	
	Terminate Earth Wire in test joint box using lugs and brass bolt.	No	62	
	Terminate steel reinforcing using purpose made stainless steel terminals	No	55	
	Terminate steel roof structure to flush terminals at top of columns using 50mm ² PVC conductor, including lugs and fixings	No	53	
	Bond metal roof and down pipes down with 50mm ² insulated to earth loop in ground.	No	53	
	8mm Aerial conductor on roof for lightning protection. To include all holding down clamps, down conductors, bonding conductors and lightning Rods	m	570	
	EARTH BARS Provide Copper earth bars as per drawings and specifications. 6mm x 50mm x 550mm in buildings (DB-Earth Bar)	No	24	R 0.00
	SOIL RESISTIVITY TESTS Conduct a complete soil resistivity survey for the building area. Resistivity measurements shall be taken at, at least 5 locations and at the supply points. It shall include a certificate and recommendation regarding the soil conditions.	Item	2	
	ENCLOSURES Vandal Proof, 173(w)x130(h)x88mm(d) PVC surface extension test box.	No	36	

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	Labels for All test joint boxes	Item	1	
	EARTH ELECTRODES Supply and install copper earth electrodes driven in ground, including 'Cadweld' joints as required			
	1000 mm x 16 mm diameter long electrodes	No	190	
	Bond 70mm ² bare copper from Earth loop to earth rod	No	190	
	EARTHING OF EQUIPMENT Earth equipment as per drawings and specification to achieve earth resistivity values as per SANS and NRS requirements			
	Earthing of indoor equipment and panels	No	18	
	Earthing of Kiosks	No	2	R 0.00
	Earthing of Outdoor generator unit	No	1	
	OTHER Supply, install and connect an earth potential equaliser and suppressor unit ("Ponti choke") as per specification and drawings.	No	7	
	TRENCH EXCAVATIONS: Excavate for earthing including temporary support of sides, keeping excavation dry, bedding material, backfilling, compacting and testing as specified. All backfill material to be suitable as per SANS codes and engineers approval. Backfill material to be imported if necessary. The rate shall include backfilling, compaction to 93% MOD AASHTO density, and where necessary the supply and transportation of suitable ground as may be required to receive the desired compaction, except where cement is specified. The removal of Boulders from existing excavations will be rated as Soft rock..			
	In soft or pickable soil (60%)	m ³	185	
	In soft rock (40%)	m ³	72	
	STANDBY GENERATOR SYSTEM <i>Refer to Electrical Specification</i> Supply, Deliver, install and commissioning of standby generator complete in canopy as specified for the following sizes:			
	275 kVA Prime rated Outdoor standby diesel generator in sound proof enclosure, complete with DB, smart controller, stainless steel exhaust, 600L day fuel tank and accessories. (Including first fill of all lubrication, oils and diesel)	No	1	
	300 KW Load bank for generator, with 10 Steps	No	1	
	GENERAL Statutory safety signs complying with regulations. Set of warning notices as per SANS and OHS specifications.	Item	1	
	Supply and install audible alarm and red light outside generator enclosed at high level. Linked to generator alarm panel.	No	1	
	Supply and install A82 padlocks	No	2	
	Supply & Fill Diesel Fuel for full tank at time of handover	Ltrs	600	
	Rate of diesel fuel at time of closing of tender: _____			

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	Note: Based on fuel rate at the time that fuel is required, Liters will be adjusted to suite total cost amount tendered.			
	Surface mounted Remote generator control / alarm panel with alarm lights, siren, accept button and remote generator operation as per specifications.	No 1		
	OTHER			
	Labelling of all cables, switches, switchgear and equipment as specified.	Item 1		
	Generator Factory Acceptance Tests (FAT's). Factory test attendance to include for 1 x Engineer and 1 x client member (DOH)	Item 1		
	Generator Site acceptance tests (SAT's) of full system. Attendance by Contract, Client and Engineering team	Item 1		
	Generator load test be conducted over a 6 hour period on site using a 50% capacity load bank and results documented. All diesel and load bank costs to be included.	Item 1		
	Supply & Fill Diesel Fuel for maintenance period: Rate of diesel fuel at time of closing of tender: _____	Ltrs 5000		
	Note: Based on fuel rate at the time that fuel is required, Liters will be adjusted to suite total cost amount tendered.			
	Guarantee and full maintenance of the complete Generator system for 12 months after handover to the client. To include all spares and replacement items for generator. Based on running time of 20Hrs per month.	Mnts 12		
	12 Month maintenance as per the specification. Quarterly (4) service of the plant as per the manufacturer's requirements.			
	Full list of material and maintenance plan to be provided			

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	SOLAR PV SYSTEM			
	Roof Top 20 KWp Hybrid Solar PV System Supply and Install a Complete Roof top 20KWp Photovoltaic system. System to be Provided as a complete solution. System proposals to be submitted to Engineer for Approval prior to any procurement. Refer to Drawing NO DNA-TC-ELE-PL-1007-00: To Include:			
	Tier 1 - Monocrystalline Solar Panels with output of 500wp No	40		
	Mounting equipment on Roof (Including Kliplock Clamps, P2000, Bolts & Nuts, Splices, covers and any other equipment as required.) Item	1		
	P9000 Cable Ducting routing from Solar Panels to Inverter. Including all Mountings, Covers and accessories Item	1		
	DC Cabling from Solar Panels to Smart Inverter Unit in Ducting Item	1		
	Tier 1 30 kva Floor Standing Smart Hybrid Inverter unit: Including Smart Inverter, all wiring, Overcurrent and Surge protection, Communication modules. Item	1		
	Tier 1 40kWh Lithium Ion Battery Energy Storage system Item	1		
	DB - Solar: Wall mounted Weather proof enclosure, solar main panel. Including: Main /Solar Sensing , Surge protection, communication modules and accessories . Refer to schematic Item	1		
	300mm Heavy duty Cable Tray m	198		
	50sq mm 4-C XLPE/SWA/PVC/ECC Cable m	88		
	Termination of cabling, (AC & DC) Item	1		
	Earthing of Equipment and Structures Item	1		
	Control Equipment and Monitoring Equipment, Including Bi-Directional Meter in Panel MP2, Sensors, Phase failure Relays. To prevent back feeding to the municipality. Item	1		
	Communication Cabling m	200		
	Test and commission complete installation. Item	1		
	Site Acceptance Testing with Engineer and Client Item	1		
	Provide Training on complete Solar PV System. Allow for 2 days for 10 People Item	1		
	Submit As-built drawings to the Engineers satisfaction (Hard Copy and USB). Item	1		
	Issue Certificate of Compliance with test certificate (CoC) Item	1		
	Submit Handover file consisting of: Operation, Maintenance Manuals to the Engineers satisfaction. 3 x sets manufacturers and supplier schedules, operation and maintenance manuals and drawings (Hard copy + USB Item	1		
	Guarantee and full maintenance of the complete electrical system for 12 months after handover to the client. Full list of material and maintenance plan to be provided Item	1		

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ELECTRICAL AND ELECTRONIC

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Item No.	Item	Quantity	Rate	Total
	TESTING, COMMISSIONING AND HANDOVER			
	<i>(Refer to Electrical Specification)</i>			
	TESTING AND COMMISSIONING			
	Test and commission complete installation per SANS 10142-1 and as specified.	Item 1		
	DOCUMENTATION			
	Submit As-built drawings to the Engineers satisfaction. 1 x full set "red line" drawings (hard copy)	Item 1		
	Submit Handover file consisting of: Operation, Maintenance Manuals to the Engineers satisfaction	Item 1		
	3 x sets manufacturers and supplier schedules, operation and maintenance manuals and drawings (hard copy + CD)			
	Issue Certificate of Compliance with test certificate (CoC): - 1 for each Distribution Board - 1 overall CoC	No 14 Item 1		
	Issue Earth certificate for the complete earth installation	Item 1		
	TRAINING			
	Provide training to DOH Personnel on systems. Allow for 2 days for 10 people	Item 1		
	Provide Training Manuals for critical operation and maintenance of the complete system.	Item 1		
	GENERAL			
	Guarantee and full maintenance of the complete electrical system for 12 months after handover to the client. Full list of material and maintenance plan to be provided	Mnts 12		
	Seal all cable entries in buildings, substations and kiosks with foam seal to prevent ingress of water.	Item 1		
	Eskom 300A/400V Connection fee. Allow for R 1 500 000,00	P/Sum 1		
	Profit & attendance % for above Item	%		
	Carried to Summary			
	BILL 01 - ELECTRICAL INSTALLATION			
				R 0.00

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Item No.	Item	Quantity	Rate	Total
	BILL 02 - SECURITY INSTALLATION ACCESS CONTROL AND SECURITY <i>(Refer to Electrical Specification)</i>			
	ACCESS CONTROL SYSTEM Note that Access Control System to be to be provided as a solution including installation, operation manuals, System Architecture & system programming. Refer to Drawing: DNA-TC-ELE-PL-1005-00 Note that all Access control equipment/Solutions are subject to approval by the Engineer prior to purchase. Alternate equipment proposed will only be considered if cost saving, better quality and longer guarantee is provided and subject to approval by the engineer and client.			
	Access control Point Units Supply and Install Surface mount Access control keypad Including: Keypad, Resettable Call Point, Cabling, Power Supply, Battery Back up & Software licensing. IP65 Rated	No 19		
	Gooseneck stand Supply and Install 1000mm Gooseneck stands with weather proof cover	No 1		
	No Touch sensor installed at Exits Including: Resettable Call Point, Cabling, Power Supply, Battery Back up & Software	No 19		
	Maglock Complete with bracket 300kg rated With Power supply, Battery Back up, Mounting Bracket, Door Closer, Open/Close Sensors & Cabling	No 19		
	Manual Bypass for Maglock Surface mounted Green Resettable addressable manual call point. To include tamper resistant break glass Hinged Transparent MCP protection cover, Surface mounting box with connector and resettable element. To include LED indicator	No 19		R 0.00
	Door Open/Closes Siren With Power supply, Battery Back up, Mounting Bracket, Door Closer & Cabling	No 19		R 0.00
	Access Control System Cabling Cabling for Access control Point units, Manual bypass & open/close sensors	m 2500		
	Software for Access Control System Software to be included for Portal Access control for over 500 users and a once off licensing fee for this system with Redundancy	No 1		
	Access Control Server PC	No 1		

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Item No.	Item	Quantity	Rate	Total
	To include, Keyboard/Mouse, 19 Inch Desktop Screen, Cabling. Minimum ,Intel® Core™ i7 processor min, 16Gb RAM, 500Mb Video card, 10/100 Network card 3x 1TB HDD, DVD+/-RW. Lockable 3 x USB ports			
	Access Control Operator/Enrolment PC No	2		
	To include, Keyboard/Mouse, 19 Inch Desktop Screen, Cabling. Minimum ,Intel® Core™ i7 processor min, 16Gb RAM, 500Mb Video card, 10/100 Network card 1x 1TB HDD, DVD+/-RW. Lockable 3 x USB ports			
	Enrolment Reader: Biometric No	2		
	Supply and install Biometric enrolment reader including Software			
	Enrolment Reader: Tag/Card No	2		
	Including: Power Supply & Software			
	Access Tag/Card No	1000		
	Access Tag/Card Return station No	2		
	Access Control Training Sum	1		
	Provide training to DOH Personnel on Access control System, Allow for 2 Days for 5 People. Provide Training Manuals for operations and maintenance of the system.			
	Access Control Sundries No	1		
	Sundries and consumables, With Engineer's Approval only. Allow for R100 000,00			
	CCTV			
	Note that CCTV System to be to be provided as a solution including installation, operation manuals, System Architecture & system programming. Refer to Drawing: DNA-TC-ELE-PL-1005-00			
	Note that all CCTV equipment/Solutions are subject to approval by the Engineer prior to purchase. Alternate equipment proposed will only be considered if cost saving, better quality and longer guarantee is provided and subject to approval by the engineer and client.			
	Indoor Mounted Smoked Dome Camera (IDC) No	23		
	2MP, Mounted in Ceilings, Drywalls & Brick Walls. HD PTZ Cameras with advanced Analytics support, Low Illumination operation, auto focus, Redundancy recording support, motion detection including all Mounting brackets, Nuts & Plugs			
	Outdoor Mounted IP65 IR Camera (ODC) No	14		

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Item No.	Item	Quantity	Rate	Total
	2 MP, Mounted on Poles, Brick walls. HD IP65 Cameras with advanced Analytics support, Low Illumination operation, auto focus, Redundancy recording support, motion detection including all Mounting brackets, Nuts & Plugs			
	Camera Poles 6m Hot Dipped Galvanized Steel Mounted on Concrete Base. Including Camera & CCTVK Mounting Bracks and concrete base	1		
	CCTV Kiosks CCTVK: Stainless Steel, Lockable Vandal Proof, IP66, including 1KVA UPS for 30 minutes To be installed on Camera Poles. Per Schematic and Specifications Including: Fibre/Ethernet Converter, Cat 6a Inline surge protection, Fibre Patch Panel, Power supplies, Din Rails as per schematic	No 1		
	Category 6a cabling Cat 6a STP Ethernet Cabling for DATA Points. IEEE 802.3af Power over Ethernet (PoE) standard	m 3200		
	Fibre Optic Cable 8 Core Heavy Duty Single Mode Fiber optic Cable	m 700		
	Switches 24 Port layer 3, PoE Network switch with 10gb SFP Module	No 2		
	Network Video Recorder (NVR) Minimum 64 channel, Minimum storage period 30 days, Minimum Image quality of 1080P, advanced Analytics support, Digital Time lapse/Real time recording	No 2		
	Hard Drive 16TB External Hard Drive	No 4		
	Operator Work Station Including PC, Minimum: i7, 8gb Ram, 2GB Graphics card, 120GB SSD, Windows 11 professional 64 bit, Ethernet & Wireless, HDMI, VGA, USB inputs/outputs Keyboard, DVD Drive, Mouse & Joystick	No 1		
	Display Screen: 19 Inch Desktop Display Screen, Minimum Full HD Display, with HDMI, VGA, USB inputs	No 2		
	Display Screen: 40 Inch Wall mounted Display Screen, Minimum Full HD Display, with HDMI, VGA, USB inputs/outputs & mounting Brackets	No 2		
	Video Management Software (VMS) Video Management Software to be included and a once off licensing fee for this system with Redundancy.	No 1		

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Item No.	Item	Quantity	Rate	Total
	CCTV System Training Sum Provide training to DOH Personnel on CCTV System, Allow for 2 Days for 5 People. Provide Training Manuals for operations and maintenance of the system.	1		
	CCTV Sundries No Sundries and consumables, With Engineer's Approval only. Allow for R100 000,00	1		
	TESTING, COMMISSIONING AND HANDOVER <i>(Refer to Electrical Specification)</i> TESTING AND COMMISSIONING Test and commission complete installation as per SANS 10222 and as specified. Item	1		
	DOCUMENTATION Submit As-built drawings to the Engineers satisfaction. 1 x full set "red line" drawings (hard copy) Item	1		
	Submit Operation & Maintenance Manuals to the Engineers satisfaction 3 x sets manufacturers and supplier schedules, operation and maintenance manuals and drawings (hard copy + CD) Item	1		
	Issue Certificate of Compliance with test certificate for Access Control System in terms of SANS 10222-2. Item	1		
	Issue Certificate of Compliance with test certificate for CCTV System in terms of SANS 10222-5-1-4. Item	1		
	TRAINING Provide training to DOH Personnel on systems. Allow for 2 days for 10 people Item	1		
	Provide Training Manuals for critical operation and maintenance of the complete system. Item	1		
	GENERAL Guarantee and full maintenance of the complete Security system for 12 months after handover to the client. Mnts	12		
	Full list of material and maintenance plan to be provided			
	Carried to Summary			R 0.00
	BILL 02 - SECURITY INSTALLATION			

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Item No.	Item	Quantity	Rate	Total
	BILL 03 - ICT INSTALLATION ICT SYSTEM <i>(Refer to Electrical Specification:)</i> Supply and install complete installation including all equipment and materials as specified and as indicated on the drawings. DATA INFRASTRUCTURE Note that Data Infrastructure to be provided as a solution, To be based on site verification, including installation, System Architecture & system programming Note that all Data Infrastructure equipment are subject to approval by the Engineer prior to purchase. Alternate equipment proposed will only be considered if cost saving, better quality and longer guarantee is provided and subject to approval by the engineer and client.			
	Category 6a cabling m 3500 Cat 6a STP Ethernet Cabling for DATA Points. IEEE 802.3af Power over Ethernet (PoE) standard			
	Fibre Optic Cable m 1000 8 Core Heavy Duty Single Mode Fiber optic Cable			
	Cat6 STP RJ45 Patch Leads (1m) No 70			
	8 Core SFP Patch Leads (1m) No 70			
	Cat6 STP RJ45 Fly Leads(3m) No 50			
	8 Core SFP Fly Leads(3m) No 50			
	Network Switches No 2 24 Port layer 3, PoE Network switch with 10gb SFP Module			
	Distribution Switch No 2 16 Port, Fiber Distribution Switch with SFP Module			
	Patch panel No 3 24 Port Cat6 Managed Patch panel 24 Port LC Managed Fiber Optic Patch Panel No 3			
	Fiber Optic Splicing & OTDR Testing No 50			
	Wireless Router No 13 Indoor Ceiling Mounted Wireless Access Point Router, Dual Band AP 802.11ac. including programming & configuration			
	Programming & Configuration of Network Switches No 2			
	DATA Infrastructure Sundries No 1			

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Item No.	Item	Quantity	Rate	Total
	Sundries and consumables, With Engineer's Approval only. Allow for R100 000,00			
	TELEPHONE SYSTEM Note that Telephone System to be to be provided as a solution including installation, operation manuals, System Architecture & system programming. Including Software & Licensing Note that all Telephone equipment/Solutions are subject to approval by the Engineer prior to purchase. Alternate equipment proposed will only be considered if cost saving, better quality and longer guarantee is provided and subject to approval by the engineer and client.			
	Switchboard No 1 System controller & switchboard unit			
	Desktop VOIP Handset No 31 Voice over IP Handset units in offices and control rooms			
	Telephone System Training Sum 1 Provide training to DOH Personnel on telephone System, Allow for 2 Days for 5 People. Provide Training Manuals for operations and maintenance of the system.			
	Telephone System Programming Sum 1 Programme Entire Telephone system devices			
	Telephone system Sundries No 1 Sundries and consumables, With Engineer's Approval only. Allow for R100 000,00			
	PABX System No 1 10 Line in, 100 Line out. Based on Local supplier offering			
	Public Address system Note that PA System to be to be provided as a solution including installation, operation manuals, System Architecture & system programming. Including Software & Licensing Note that all PA equipment/Solutions are subject to approval by the Engineer prior to purchase. Alternate equipment proposed will only be considered if cost saving, better quality and longer guarantee is provided and subject to approval by the engineer and client.			
	Audio Equipment Audio equipment in accordance to room dimensions & acoustics as to ensure fit for purpose			
	Speaker System per room No 15 Wall Mounted Speakers on anti vandal mounting. acoustics as to ensure fit for purpose.			

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Item No.	Item	Quantity	Rate	Total
	Microphones Desktop Gooseneck Microphones. Mounted on desks with anti vandal bracket. Connected to Audio Management system.	No 4		
	Speaker cables Cabling for speakers	m 1000		
	Audio Management Unit Including Mixer, Processor, Speaker Management unit & Amplifier	No 2		
	Surface Mounted Conference room Connection box Mounted on Table. To include connection from smart board, 1x HDMI, 1x VGA, 1x USB, 2x SSO & Audio Jack.	No 2		
	HDMI Cables Supply & Install. High speed 4k Braided cables Between. 10m Lengths	No 3		
	VGA Cables Supply & Install 10m Lengths. With VGA Male Connectors	m 3		

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Item No.	Item	Quantity	Rate	Total
	NURSE CALL SYSTEM Nurse call system consisting of Nurse call indicator panel and Call points			
	Nurse call indication Panel Wall mounted 300x300 Nurse call indication Panel including Screen with representation of clinic rooms, Tone generator, Power supply	No 2		
	Nurse Call Communication Cables Cat 6a STP Ethernet Cabling. IEEE 802.3af Power over Ethernet (PoE) standard	m 1500		
	Nurse call cancel button Stainless steel push button over 50mm standard round box	No 13		
	Nurse call LED Indicator lamps Wall mounted 35mm Red LED indicator lamps	No 13		
	Patient pear push unit Bed Head mounted on 100x100 plate inline molded RCA socket for patient pear push unit. Pearpush unit on RCA Jack, 1.8m cord with call and reset an LED indicators. To Include latching circuits & power supply	No 10		
	BEDHEAD UNITS Supply & Install Medical Bedhead service system. All Bedhead units suppliers/Manufacturers to have SAHPRA License			
	Bedhead Service system (Consulting Room) 2000mm Two Compartment Aluminum Extrusion Trucking & Vertical Riser. Including: -1x Medical Gas Outlet (Oxygen) -1x Medical Gas Outlet (Vacuum) -1x Medical Gas Outlet (Low pressure air) -1x5w LED Night Light & Switch. Switched at Unit -1x18w LED Reading Light & Switch. Switched at Unit -1x30w LED Uplight Light & Switch. Switched at Unit -1x Nurse Call Provision -2x Normal 16A SSO -2x Emergency 16A SSO -2x RJ45 -DATA Point -1x 63A E/L ,6 ka -2x 20A C/B, 6KA -1x 10A C/B, 6KA -1x 300mm Medical Gabler Rail including all accessories -All Engravings -All Access Boxes, Spaces, Screws, Din Rails	No 7		
	Bedhead Service system (Emergency/ Procedure Room) 2000mm Two Compartment Aluminum Extrusion Horizontal Trucking & 1500mm Vertical Riser. Including: -3x Medical Gas Outlet (Oxygen) -2x Medical Gas Outlet (Vacuum)	No 2		

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Item No.	Item	Quantity	Rate	Total
	-3x Medical Gas Outlet (Low pressure air) -1x Nurse Call Provision -8x Normal 16A SSO -8x Emergency 16A SSO -2x RJ45 -DATA Point -1x 63A E/L ,6 KA -2x 20A C/B, 6 KA -1x 10A C/B, 6 KA -1x Single level, 2way Dimmable switch -1x 300mm Medical Gabler Rail including all accessories -All Engravings -All Access Boxes, Spaces, Screws, Din Rails			
	SERVER RACKS			
	Floor standing rack Supply and install 42U floor standing cabinet. 800mm deep x 600mm wide, Black, 2x230V Fans. PDU Included, Including switches and Modules. To include in-cabinet surge protector multi-adapter.	No 2		
	Wall Mounted rack Supply and install 20U wall mounted swing frame cabinet. 20u" Wall box, Swing Frame, 100mm collar, 650mm. Deep, Black, 2x230V Fans, 1 Shelf, Nuts, 6-Way C14. PDU Included. To include in-cabinet surge protector multi-adapter.	No 2		
	TESTING, COMMISSIONING AND HANDOVER			
	(Refer to Electrical Specification)			
	TESTING AND COMMISSIONING Test and commission complete installation per SANS 10139 and as specified.	Item 1		
	DOCUMENTATION			
	Submit As-built drawings to the Engineers satisfaction. 1 x full set "red line" drawings (hard copy)	Item 1		
	Submit Operation & Maintenance Manuals to the Engineers satisfaction 3 x sets manufacturers and supplier schedules, operation and maintenance manuals and drawings (hard copy + CD)	Item 1		
	TRAINING Provide training to DOH Personnel on systems. Allow for 2 days for 10 people	Item 1		
	Provide Training Manuals for critical operation and maintenance of the complete system.	Item 1		
	GENERAL			

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Item No.	Item	Quantity	Rate	Total
	Guarantee and full maintenance of the complete electrical system for 12 months after handover to the client. Mnts	1		
	Full list of material and maintenance plan to be provided			
	External ICT Connection fee. Allow for R 300 000,00 P/Sum	1		
	Profit & attendance % for above Item %			
	Carried to Summary			R 0.00
	BILL 03 - ICT INSTALLATION			

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Item No.	Item	Total
Bill 01	Electrical Bill	R 0.00
Bill 02	Security Bill	R 0.00
Bill 03	ICT Bill	R 0.00
	Electrical Summary	Total
		R 0.00
	Electrical Summary	