



public works
& infrastructure

Department:
Public Works and Infrastructure
REPUBLIC OF SOUTH AFRICA

SUNDUMBILI MAGISTRATE OFFICE: ADDITIONAL ACCOMMODATION

PART C: ELECTRICAL AND ELECTRONIC WORKS



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REPUBLIC OF SOUTH AFRICA

SUNDUMBILI MAGISTRATE OFFICE: ADDITIONAL ACCOMMODATION

BILLS OF QUANTITIES: ELECTRICAL AND ELECTRONIC WORKS

SECTION BILL NO.1 GENERAL ELECTRICAL INSTALLATION (WORK GROUP NO.160)					
Item	Description	Unit	Qty	Rate	Amount
	<p>Tenderers are referred to the project specification for full descriptions of materials, etc. to be used. All work shall be done strictly in accordance with the specification and manufacturers instructions and to be left in perfect working order after completion.</p> <p>Tenderers are to refer to the Department of Public Works Specifications : PW371-B Edition 2.1 July 2014 and PW371-A Edition 2.0 July 2013 for further description and amplification of work in this section.</p> <p>General Electrical Installation</p> <p>Sub-contact Agreement and Preliminaries <u>Allow to comply with the specifications and contract requirements providing the following:</u></p>				
1	Definitions and Interpretation	Item			
2	Subcontractors Site Representative	Item			
3	Indemnities	Item			
4	Works and N/S Works insurances	Item			
5	Liability insurances	Item			
6	Security	Item			
7	Preparation for and execution of the works	Item			
8	Setting out of the works	Item			
9	Subcontractor's Plant and services	Item			
10	Management of the works	Item			
11	Plant, Equipment, Sheds and Offices	Item			
12	Telecommunication facilities	Item			
13	Responsibility for Prime Cost amounts	Item			
14	General Attendance	Item			
15	Special Attendance	Item			
	Carried Forward				

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
16	Works cleaning and clearing		Item			
17	Overhand work		Item			
	Personal Protective Equipment					
	<u>Provide, supply and maintain for each worker the following SANS approved personal protective equipment & clothing as per the site specific risk assessment:</u>					
18	Hard Hat (High Density polyethylene with 6 point lining)		Item			
19	Overall / Work suit (100% Cotton)		Item			
20	High Visibility reflecting vest and / or bibs		Item			
21	Safety boot / shoes (Steel toe caps)		Item			
22	Safety Gumboot (Steel toe caps)		Item			
23	Ear Plugs and Muffs		Item			
24	Dust Musks (at least FF2 type)		Item			
25	Respirators		Item			
26	Safety goggles		Item			
27	Temporary handrails, toe banks etc other than for access scaffoldings		Item			
28	Personal fall arrest and rescue equipment with and including life lines and associated equipments		Item			
29	Allow for provision of telecommunication facilities for the appointed construction Health and Safety Officer		Item			
	Medical Examinations					
30	Allow for pre employment Medicals		Item			
31	Allow for baseline psychological examination		Item			
32	Allow for exit Medicals		Item			
	Health and Safety Education					
33	Allow for all compulsory health and safety awareness programmes (e.g Inductions, Toolbox talk, safety Promotions, H&S training etc)		Item			
		Carried Forward				

Item	Description	Brought Forward	Unit	Rate	Amount
Earthing and bonding					
<u>Main Sub-Station Earthing</u>					
34	Supply and install main earth bar on L.V. switch boards and also earth mat in the vicinity of the main substation and to provide an earthing system less than 1.0 Ohm for the entire building/installation i.e all floors and DB	Sum	1		
35	Connect lightning protection for all the buildings back to the main earth bar behind the L.V switchboards	Sum	1		
<u>General Earthing and Bonding</u>					
36	Earthing and Bonding of Distribution Boards.	Sum	1		
37	Earthing and Bonding of Geysers and Other metal Appliances.	Sum	1		
38	Earthing and Bonding of all metal Water Pipes.	Sum	1		
39	Earthing and Bonding of metal Gutters and metal Roof.	Sum	1		
Labelling and Marking					
40	Allow for marking and labelling of all equipment, cables, plugs, light switches etc.	Sum	1		
As-built information and Operating and Maintenance Manuals					
41	Obtaining of all available information, compiling and finalizing of three (3) sets of Hard Copies and five (5) copies of "As-built" information / drawings, Operating and Maintenance manuals as specified, and handing over to the Engineer.	Sum	1		
Training of Maintenance Staff					
42	Provide staff training on the entire Electrical Installation.	Sum	1		
43	Development of a syllabus for training of maintenance staff.	Sum	1		
44	Presentating a training course for Maintenance Staff.	No	1		
Commissioning and testing					
45	Allow for the Commissioning, Testing and issuing of certificates for the entire General Electrical Installation.	Sum	1		
46	Provisional Sum for the Testing of hot spots by Infrared Thermal Imaging Camera on the entire Electrical Installation by Specialist.	Item			60 000.00
47	Profit and Attendance on above item.	%	60 000.00		
Carried Forward					

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
Certificate of Compliance						
48	Provide a Certificate of Compliance in accordance with the latest SANS 10412-1 Wiring of premises Part 1 for the entire Electrical and Electronic Services Installation.		Sum	1		
Guarantee and Warranty						
49	Allow for Guarantee and warranties for the complete Electrical Installation, including all fittings, materials and workmanship for a period of 12 months after the date of works completion and handover.		Sum	1		
Maintenance & Service Contract						
50	Maintenance & Servicing of the complete Electrical Installation during the 12 months defects liability period.		Sum	1		
Covid-19 Regulations						
51	Allow for an amount to provide staff the necessary masks, sanitizer and other PPE to comply with the latest Government COVID-19 Regulations and Directions.		Sum	1		
Carried Forward to collection page						

SECTION					
BILL NO.2					
CABLE RETICULATION INSTALLATION (WORK GROUP NO.160)					
Item	Description	Unit	Qty	Rate	Amount
	Tenderers are referred to the project specification for full descriptions of materials, etc. to be used. All work shall be done strictly in accordance with the specification and manufacturers instructions and to be left in perfect working order after completion.				
	Tenderers are to refer to the Department of Public Works Specifications : PW371-B Edition 2.1 July 2014 and PW371-A Edition 2.0 July 2013 for further description and amplification of work in this section.				
	<u>Existing Electrical Services</u>				
	Location, Isolation and Protection of Existing Services				
1	Removal and Isolation of the existing Electrical supply	Item	1		
2	Provision of a Cable Detecting device for detecting the existing Electrical cables and other services.	Sum	1		
3	Hand excavation necessary for locating and exposing existing services in roadways.	m ³	35		
4	Hand excavation necessary for locating and exposing existing services in all other areas.	m ³	50		
	<u>Cable Reticulation Installation</u>				
	Low Voltage Cables				
5	Supply and Install 150mm ² x 4 core PVC/SWA/ECC/PVC Cu into Sleeves or onto cable ladders.	m	200		
6	Supply and Install 120mm ² x 4 core PVC/SWA/ECC/PVC Cu into Sleeves or onto cable ladders.	m	250		
7	Supply and Install 95mm ² x 4 core PVC/SWA/ECC/PVC Cu into Sleeves or onto cable ladders.	m	300		
8	Supply and Install 70mm ² x 4 core PVC/SWA/ECC/PVC Cu into Sleeves or onto cable ladders/trays.	m	30		
9	Supply and Install 50mm ² x 4 core PVC/SWA/ECC/PVC Cu into Sleeves or onto cable ladders/trays.	m	25		
	Carried Forward				

Item	Description	Brought Forward		Rate	Amount
		Unit	Qty		
10	Supply and Install 35mm ² x 4 core PVC/SWA/ECC/PVC Cu into Sleeves or onto cable ladders/trays.	m	15		
11	Supply and Install 25mm ² x 4 core PVC/SWA/ECC/PVC Cu into Sleeves or onto cable ladders/trays.	m	165		
12	Supply and Install 16mm ² x 4 core PVC/SWA/ECC/PVC Cu into Sleeves or onto cable ladders/trays.	m	200		
13	Supply and Install 10mm ² x 4 core PVC/SWA/ECC/PVC Cu into Sleeves or onto cable ladders/trays.	m	1500		
14	Supply and Install 6mm ² x 4 core PVC/SWA/ECC/PVC Cu into Sleeves or onto cable ladders/trays.	m	15		
15	Supply and Install 25mm ² x 2 core PVC/SWA/ECC/PVC Cu into Sleeves or onto cable ladders/trays.	m	10		
16	Supply and Install 16mm ² x 2 core PVC/SWA/ECC/PVC Cu into Sleeves or onto cable ladders/trays.	m	15		
17	Supply and Install 10mm ² x 2 core PVC/SWA/ECC/PVC Cu into Sleeves or onto cable ladders/trays.	m	10		
18	Supply and Install 6mm ² x 2 core PVC/SWA/ECC/PVC Cu into Sleeves or onto cable ladders/trays.	m	550		
19	Supply and Install 4mm ² x 2 core PVC/SWA/ECC/PVC Cu into Sleeves or onto cable ladders/trays.	m	250		
	Low Voltage Cable Terminations				
20	Supply and Install 150mm ² x 4 core PVC/SWA/ECC/PVC Cu Terminations into Distribution Board Gland plates.	No	6		
21	Supply and Install 120mm ² x 4 core PVC/SWA/ECC/PVC Cu Terminations into Distribution Board Gland plates.	No	8		
22	Supply and Install 95mm ² x 4 core PVC/SWA/ECC/PVC Cu Terminations into Distribution Board Gland plates.	No	10		
23	Supply and Install 70mm ² x 4 core PVC/SWA/ECC/PVC Cu Terminations into Distribution Board Gland plates.	No	4		
24	Supply and Install 50mm ² x 4 core PVC/SWA/ECC/PVC Cu Terminations into Distribution Board Gland plates.	No	2		
	Carried Forward				

Item	Description	Brought Forward	Unit	Rate	Amount
25	Supply and Install 35mm ² x 4 core PVC/SWA/ECC/PVC Cu Terminations into Distribution Board Gland plates.		No	2	
26	Supply and Install 25mm ² x 4 core PVC/SWA/ECC/PVC Cu Terminations into Distribution Board Gland plates.		No	4	
27	Supply and Install 16mm ² x 4 core PVC/SWA/ECC/PVC Cu Terminations into Distribution Board Gland plates.		No	4	
28	Supply and Install 10mm ² x 4 core PVC/SWA/ECC/PVC Cu Terminations into Distribution Board Gland plates.		No	44	
29	Supply and Install 6mm ² x 4 core PVC/SWA/ECC/PVC Cu Terminations into Distribution Board Gland plates.		No	2	
30	Supply and Install 25mm ² x 2 core PVC/SWA/ECC/PVC Cu Terminations into Distribution Board Gland plates.		No	2	
31	Supply and Install 16mm ² x 2 core PVC/SWA/ECC/PVC Cu Terminations into Distribution Board Gland plates.		No	2	
32	Supply and Install 10mm ² x 2 core PVC/SWA/ECC/PVC Cu Terminations into Distribution Board Gland plates.		No	2	
33	Supply and Install 6mm ² x 2 core PVC/SWA/ECC/PVC Cu Terminations into Distribution Board Gland plates.		No	18	
34	Supply and Install 4mm ² x 2 core PVC/SWA/ECC/PVC Cu Terminations into Distribution Board Gland plates.		No	20	
	Earth Continuity Conductors				
35	Supply and Install 70mm ² x Cu Insulated Earth Continuity Conductors.		m	550	
36	Supply and Install 50mm ² x Cu Insulated Earth Continuity Conductors.		m	30	
37	Supply and Install 35mm ² x Cu Insulated Earth Continuity Conductors.		m	25	
38	Supply and Install 25mm ² x Cu Insulated Earth Continuity Conductors.		m	15	
39	Supply and Install 16mm ² x Cu Insulated Earth Continuity Conductors.		m	165	
40	Supply and Install 10mm ² x Cu Insulated Earth Continuity Conductors.		m	200	
41	Supply and Install 6mm ² x Cu Insulated Earth Continuity Conductors.		m	1500	
		Carried Forward			

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
42	Supply and Install 4mm ² x Cu Insulated Earth Continuity Conductors.		m	550		
	Cable Supports and Wiring Channels					
	<u>Wiring Channels</u>					
43	Supply and install P8000 Galvanized Wiring Channel supplied complete with galvanized covers.		m	750		
44	Supply and Install P8000 Galvanized Wiring Channel 90° Bends or T-Piece.		No	65		
45	Supply and Install P2000 Galvanized Wiring Channel supplied complete with galvanized covers.		m	600		
46	Supply and Install Galvanized Wiring Channel hangers and threaded rods.		No	900		
	<u>Cable Ladder</u>					
47	Supply and Install 300mm Wide Galvanized Heavy Duty Cable Ladder.		m	100		
48	Supply and Install 300mm Wide Galvanized Heavy Duty 90° Cable Ladder Bend.		No	4		
49	Supply and Install 300mm Wide Galvanized Heavy Duty Cable Ladder T-Piece.		No	1		
50	Supply and Install Galvanized Support Brackets, hangers and threaded rods.		No	70		
	<u>Cable Tray</u>					
51	Supply and Install 300mm Wide Galvanized Medium Duty Cable Tray.		m	135		
52	Supply and Install 300mm Wide Galvanized Medium Duty 90° Cable Tray Bend.		No	3		
53	Supply and Install 300mm Wide Galvanized Medium Duty Cable Tray T-Piece.		No	1		
54	Supply and Install 150mm Wide Galvanized Medium Duty Cable Tray.		m	200		
55	Supply and Install 150mm Wide Galvanized Medium Duty 90° Cable Tray Bend.		No	9		
56	Supply and Install 150mm Wide Galvanized Medium Duty Cable Tray T-Piece.		No	1		
57	Supply and Install Galvanized Support Brackets, hangers and threaded rods.		No	140		
		Carried Forward				

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
	<u>Wire Cable Baskets</u>					
58	Supply and Install 300mm Wide Galvanized Wire Baskets.		m	425		
59	Supply and Install 300mm Wide Galvanized 90° Wire Basket bend. Tray Bend.		m	9		
60	Supply and Install 300mm Wide Galvanized Wire Basket T-Piece. T-Piece.		m	10		
61	Supply and Install 150mm Wide Galvanized Wire Baskets.		m	100		
62	Supply and Install 150mm Wide Galvanized 90° Wire Basket bend. Tray Bend.		m	6		
63	Supply and Install 150mm Wide Galvanized Wire Basket T-Piece. T-Piece.		m	1		
64	Supply and Install Galvanized Support Brackets, hangers and threaded rods.		No	70		
	Trenches and Excavations					
	<u>Excavate for Trenches, Backfill, Compact and Dispose of Surplus Material:</u>					
65	Trenching in hand pickable soil.		m ³	100		
66	Trenching in soft rock.		m ³	50		
67	Trenching in hard rock		m ³	10		
68	Back fill river sand		m ³	80		
69	Backfill Trenches/ Compaction		m ³	160		
70	Concrete Cable Markers		No	25		
	Cable Sleeves					
	<u>Unplasticised polyvinyl chloride (uPVC) sleeve piping including short lengths and joining, laid in trench (trench and backfilling measured elsewhere)</u>					
71	Supply and Install 160mm Diameter PVC Cable Sleeve with draw wire.		m	100		
72	Supply and Install 110mm Diameter PVC Cable Sleeve with draw wire.		m	100		
73	Supply and Install 75mm Diameter PVC Cable Sleeve with draw wire.		m	50		
74	Supply and Install 160mm bends.		No	5		
		Carried Forward				

Item	Description	Brought Forward		Rate	Amount
		Unit	Qty		
75	Supply and Install 110mm bends.	No	5		
76	Supply and Install 75mm bends.	No	5		
Plastic Warning Tape					
77	Supply and Install Cable Marker Tape.	m	250		
78	Supply and Install Danger Tape.	m	250		
Manholes					
79	Building of Main Supply manholes 800mm x 800mm x 600mm deep complete with cast iron covers.	No	5		
80	Building of Main Supply manholes 600mm x 600mm x 600mm deep complete with cast iron covers.	No	5		
Commissioning and testing					
81	Allow for the Commissioning, Testing and issuing of certificates for the entire Cable Reticulation Installation.	Sum	1		
Carried Forward to collection page					

SECTION BILL NO.3 DISTRIBUTION BOARDS (WORK GROUP NO.160)					
Item	Description	Unit	Qty	Rate	Amount
	<p>Tenderers are referred to the project specification for full descriptions of materials, etc. to be used. All work shall be done strictly in accordance with the specification and manufacturers instructions and to be left in perfect working order after completion</p> <p>Tenderers are to refer to the Department of Public Works Specifications : PW371-B Edition 2.1 July 2014 and PW371-A Edition 2.0 July 2013 for further description and amplification of work in this section.</p> <p>Distribution Boards <u>Supply and install the following distribution boards.</u> <u>Distribution boards fitted complete with equipment, wired as per Schematic Diagram. Install as shown on drawings.</u> <u>The contractor must take into account all the breakers and fault levels and pricing per DB and also the Main LV panel.</u> <u>Use three CR 12 mild steel and allow 30% spare capacity.</u></p> <p>Distribution Board enclosures (Equipment measured elsewhere)</p>				
1	Supply and Install the Floor mounted Meter Board and Change Over Panel in the Meter Room on the Lower ground floor.	No	1		
2	Supply and Install the Floor Mounted Main LV Distribution Board in the Main LV Room on the Lower Ground floor including 150kVAr PFC.	No	1		
3	Supply and Install the Surface Wall mounted DB-A1/A1E into the DB Cupboard on the Lower ground floor.	No	1		
4	Supply and Install the Surface Wall mounted DB-B1 into the DB Cupboard on the Ground floor.	No	1		
5	Supply and Install the Surface Wall mounted DB-B2/B2E into the DB Cupboard on the Ground floor.	No	1		
6	Supply and Install the Surface Wall mounted DB-C1/C1E into the DB Cupboard on the First floor.	No	1		
7	Supply and Install the Surface Wall mounted DB-C2/C2E into the DB Cupboard on the First floor.	No	1		
8	Supply and Install the Surface Wall mounted DB-D1/D1E into the DB Cupboard on the Second floor.	No	1		
Carried Forward					

Brought Forward						
Item	Description	Unit	Qty	Rate	Amount	
9	Supply and Install the Surface Wall mounted DB-D2/D2E into the DB Cupboard on the Second floor.	No	1			
10	Supply and Install the Surface Wall mounted DB-E1/E1E into the DB Cupboard on the Third floor.	No	1			
11	Supply and Install the Surface Wall mounted DB-E2/E2E into the DB Cupboard on the Third floor.	No	1			
12	Supply and Install the Surface Wall mounted DB-F into the DB Cupboard in the Basement.	No	1			
13	Supply and Install the Surface Wall mounted DB-P into the Pump Room in the Basement.	No	1			
Circuit Breakers						
14	Supply and Install 10 - 30A SP MCB 5kA into Distribution Boards.	No	414			
15	Supply and Install 32 - 63A SP MCB 5kA into Distribution Boards.	No	50			
16	Supply and Install 10 - 30A DP MCB 5kA into Distribution Boards.	No	64			
17	Supply and Install 10 - 30A TP MCB 5kA into Distribution Boards.	No	10			
18	Supply and Install 32 - 63A TP MCB 5kA into Distribution Boards.	No	11			
19	Supply and Install 80 - 100A TP MCB 5kA into Distribution Boards.	No	2			
20	Supply and Install 100 - 150A TP MCB 10kA into Distribution Boards.	No	4			
21	Supply and Install 160 - 200A TP MCB 10kA into Distribution Boards.	No	1			
22	Supply and Install 200 - 250A TP MCB 10kA into Distribution Boards.	No	1			
23	Supply and Install 400A TP MCB 15kA into Distribution Boards.	No	1			
24	Supply and Install 600A TP MCB 15kA into Distribution Boards.	No	2			
25	Supply and Install 800A TP MCB 15kA into Distribution Boards.	No	1			
26	Supply and Install 800A TP Motorized MCB 15kA for Change Over Units into Distribution Boards.	No	2			
Carried Forward						

Brought Forward						
Item	Description	Unit	Qty	Rate	Amount	
Earth Leakage Units						
27	Supply and Install 63A DP 30mA Earth Leakage Unit 6kA into Distribution Boards.	No	47			
28	Supply and Install 63A TP 30mA Earth Leakage Unit 6kA into Distribution Boards.	No	1			
Isolators						
29	Supply and Install 32 - 63A DP Isolator 5kA into Distribution Boards.	No	9			
30	Supply and Install 32 - 63A TP Isolator 5kA into Distribution Boards.	No	7			
31	Supply and Install 100A TP Isolator 10kA into Distribution Boards.	No	5			
32	Supply and Install 150A TP Isolator 10kA into Distribution Boards.	No	4			
33	Supply and Install 800A TP Isolator 15kA into Distribution Boards.	No	1			
Contactors						
34	Supply and Install 32A TP Contactor with 230V Coil into Distribution Boards.	No	5			
35	Supply and Install 63A TP Contactor with 230V Coil into Distribution Boards.	No	5			
Timers						
36	Supply and Install 250V, 16 Amp, 24-hour + 7 Day Digital Time Switch into Distribution Boards.	No	2			
Surge Arrestors						
37	Dehnguard 100kA three phase + neutral with incapsulated spark gap with indicator light or flag	No	17			
38	Dehnguard 60kA single phase + neutral with incapsulated spark gap with indicator light or flag	No	5			
Commissioning and testing						
39	Allow for the Commissioning, Testing and issuing of Compliance certificates for the Distribution Board Installation.	Sum	1			
Carried Forward to collection page						

Item	Description	Unit	Qty	Rate	Amount
<p>SECTION BILL NO.4 LIGHTING INSTALLATION (WORK GROUP NO.160)</p>					
<p>Tenderers are referred to the project specification for full descriptions of materials, etc. to be used. All work shall be done strictly in accordance with the specification and manufacturers instructions and to be left in perfect working order after completion</p>					
<p>Tenderers are to refer to the Department of Public Works Specifications : PW371-B Edition 2.1 July 2014 and PW371-A Edition 2.0 July 2013 for further description and amplification of work in this section.</p>					
<p><u>Lighting Installation by Electrical Contractor as per the Specification</u></p>					
<p>Conduits</p>					
1	Supply and Install 20mm Diameter PVC Conduit cast in concrete, or chased into, or built into brickwork.	m	4800		
2	Supply and Install 20mm Diameter Galvanized Conduit fixed onto surface, including saddles and screws etc.	m	50		
<p>Conduit boxes</p>					
3	Supply and Install 60mm Diameter Round PVC conduit boxes cast in concrete, or chased into, or built into brickwork.	No	1200		
4	Supply and Install Deep Type 60mm Diameter Round PVC conduit boxes cast in concrete, or chased into, or built into brickwork.	No	120		
5	Supply and Install 60mm Diameter Round Galvanized conduit boxes cast in concrete, or chased into, or built into brickwork.	No	10		
6	Supply and Install 50mm x 100mm x 50mm Galvanized flush boxes cast in concrete, or chased into, or built into brickwork.	No	300		
<p>Conductors</p>					
7	Supply and Install 2,5mm ² Cu PVC insulated conductor.	m	28000		
<p>Carried Forward</p>					

Item	Description	Unit	Qty	Rate	Amount
Brought Forward					
Light Switches					
8	Supply and Install 16A single lever one-way switch c/w cover.	No	180		
9	Supply and Install 16A Two-lever one-way switch c/w cover.	No	10		
10	Supply and Install 16A Three-lever one-way switch c/w cover.	No	10		
11	Supply and Install 16A Single lever two-way switch c/w cover.	No	70		
12	20A Flush Ceiling mounted Motion Sensors.	No	202		
13	20A Photo-electric daylight-sensitive switch complete as specified with contractor and override switch.	No	5		
14	Supply and Install 16A Single lever vandalproof light switch specially manufactured.	No	10		
15	Supply and Install 16A Single lever two-way vandalproof light switch specially manufactured.	No	10		
16	Supply and Install 5A Un-switched Socket Outlet.	No	700		
Luminaires					
<u>Luminaires complete as specified and indicated in schedule of luminaires supplied and fitted as described to structure or ceilings, including cut-outs for Luminaires in plasterboard ceilings and drop-in ceiling tiles, supplied complete with lamps, tubes, connections ,brackets & 3m captyre and 5A plug tops as specified.</u>					
17	Supply and Install Light Fitting Type A1 - 1200 x 600mm 65W LED recessed panel fitting with metal trim supplied complete with 3m Captyre and 5A plugtop as approved by the engineer.	No	405		
18	Supply and Install Light Fitting Type B1 - 600 x 600mm 40W LED recessed panel fitting with metal trim supplied complete with 3m Captyre and 5A plugtop as approved by the engineer.	No	25		
19	Supply and Install Light Fitting Type B2 - 600 x 600mm 40W LED recessed decorative panel fitting supplied complete with 3m Captyre and 5A plugtop as approved by the engineer.	No	125		
Carried Forward					

		Brought Forward			
Item	Description	Unit		Rate	Amount
20	Supply and Install Light Fitting Type C1 - 1200mm 37W LED Linear IP65 Vapour Proof surface mounted fitting as approved by the engineer.	No	260		
21	Supply and Install Light Fitting Type C2 - 1200mm 40W LED Linear IP65 Vandal Proof surface mounted fitting as approved by the engineer.	No	80		
22	Supply and Install Light Fitting Type D1 - Round 16W LED Recessed Downlight fitting supplied complete with 3m captyre and 5A plugtop as approved by the engineer.	No	150		
23	Supply and Install Light Fitting Type E1 - Round 15W LED Interior Bulkhead surface mounted fitting with white trim, as approved by the engineer.	No	20		
24	Supply and Install Light Fitting Type E2 - Round 24W LED Exterior IP65 Bulkhead surface mounted fitting with black trim, as approved by the engineer.	No	86		
25	Supply and Install Light Fitting Type E3 -Round 10W LED Red Pilot Light surface mounted fitting as approved by the engineer.	No	6		
26	Supply and Install Light Fitting Type E4 - Square 15W LED Floor Light/ Brick light flush mounted fitting, as approved by the engineer.	No	8		
27	Supply and Install Light Fitting Type F1 - 40W LED spot light surface mounted fitting, as approved by the engineer.	No	6		
28	Supply and Install Light Fitting Type J1 - 55W LED Post Top fitting mounted on 4,5m Galvanized pole installed at a depth of 1000mm below NGL, as approved by the engineer.	No	10		
	Commissioning and testing				
29	Allow for the Commissioning and Testing of the entire Lighting Installation.	Sum	1		
Carried Forward to collection page					

SECTION BILL NO.5 SMALL POWER INSTALLATION (WORK GROUP NO.160)					
Item	Description	Unit	Qty	Rate	Amount
Tenderers are to refer to the Department of Public Works Specifications : PW371-B Edition 2.1 July 2014 and PW371-A Edition 2.0 July 2013 for further description and amplification of work in this section.					
<u>Small Power Installation by Electrical Contractor as per the Specification</u>					
Conduits					
1	Supply and Install 20mm Diameter PVC Conduit cast in concrete, or chased into, or built into brickwork.	m	11500		
2	Supply and Install 25mm Diameter PVC Conduit cast in concrete, or chased into, or built into brickwork.	m	650		
3	Supply and Install 32mm Diameter PVC Conduit cast in concrete, or chased into, or built into brickwork.	m	1200		
4	Supply and Install 25mm Diameter Galvanized flexible sprage.	m	15		
Conduit boxes					
5	Supply and Install 60mm Diameter Round PVC conduit boxes cast in concrete, or chased into, or built into brickwork.	No	300		
6	Supply and Install Deep Type 60mm Diameter Round PVC conduit boxes cast in concrete, or chased into, or built into brickwork.	No	220		
7	Supply and Install 100mm x 100mm x 50mm Galvanized flush boxes cast in concrete, or chased into, or built into brickwork.	No	310		
Conductors					
8	Supply and Install 2,5mm ² Cu PVC insulated conductor.	m	13500		
9	Supply and Install 4mm ² Cu PVC insulated conductor.	m	28000		
10	Supply and Install 6mm ² Cu PVC insulated conductor.	m	3500		
11	Supply and Install 10mm ² Cu PVC insulated conductor.	m	70		
Carried Forward					

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
Socket Outlets and Isolators						
12	Supply and Install 16A 3-pin Single Socket Outlet (SANS 164-1) complete with a hexagonal 2-pin Socket Outlet (SANS 164-2).		No	190		
13	Supply and Install 16A 3-pin Double Socket Outlet.		No	30		
14	Supply and Install 16A 3-pin Single Socket Outlet in IP65 Weather proof enclosure.		No	25		
15	Supply and Install 16A 3-pin Single Socket Outlet in flush mounted floor box with stainless steel pop-up coverplate.		No	10		
16	Supply and Install 16A 3-pin Dedicated Single Socket Outlet with shaved earth pin.		No	10		
17	Supply and Install 5A Un-switched Socket Outlet.		No	90		
18	Supply and Install 20A DP Flush mounted Isolator.		No	15		
19	Supply and Install 20A DP Flush mounted Isolator with cord grip.		No	40		
20	Supply and Install 20A DP Surface mounted Isolator in IP65 weather proof enclosure.		No	5		
21	Supply and Install 20A TP Surface mounted Isolator in IP65 weather proof enclosure.		No	5		
22	Supply and Install 30A TP Surface mounted Isolator in IP65 weather proof enclosure.		No	5		
23	Supply and Install 60A DP Flush mounted Isolator.		No	5		
24	Supply and Install 60A TP Surface mounted Isolator in IP65 weather proof enclosure.		No	20		
Power Skirting						
25	Supply and Install three compartment, two cover Aluminium powder-coated power skirting complete with covers.		m	1200		
26	Supply and Install three compartment, two cover Aluminium powder-coated power skirting internal and external elbows.		No	120		
27	Supply and Install three compartment, two cover Aluminium powder-coated power skirting end caps.		No	120		
Carried Forward						

Item	Description	Brought Forward	Unit	Rate	Amount
28	Supply and Install three compartment, two cover Aluminium powder-coated power skirting joint covers.		No	120	
29	Supply and Install 16A 3-pin Socket Outlet mounted on power skirting complete with coverplate.		No	300	
30	Supply and Install 16A 3-pin Dedicated Socket Outlet with shaved earth-pin mounted on power skirting complete with coverplate.		No	360	
31	Supply and Install RJ45 Data Outlet on power skirting complete with cradle and coverplate.		No	185	
Power Poles					
32	Supply and Install 4,5m four compartment, four cover Aluminium Power Poles, complete with floor and ceiling mounting plates.		No	3	
33	Supply and Install 16A 3-pin Socket Outlet mounted on power pole complete with mounting compartment and coverplate.		No	3	
34	Supply and Install 16A 3-pin Dedicated Socket Outlet with shaved earth-pin mounted on power pole complete with mounting compartment and coverplate.		No	6	
35	Supply and Install RJ45 Data Outlet on power pole complete with mounting compartments, cradle and coverplate.		No	6	
Hand Dryers					
36	Supply and install Stainless Steel hand dryers.		No	20	
Connections to fixed appliances					
37	Single Phase equipment connected via 2,5mm ² 3 core captyre.		No	85	
38	Single Phase equipment connected via galvanized sprage and 3 x 6mm ² PVC conductor.		No	10	
39	Three Phase equipment connected via galvanised sprague and 4 x 16mm ² PVC conductor wiring and 10mm ² Earth Wire.		No	25	
Commissioning and testing					
40	Allow for the Commissioning and Testing of the entire Small Power Installation.		Sum	1	
Carried Forward to collection page					

Item	Description	Unit	Qty	Rate	Amount
<p>SECTION BILL NO.6 BUSBAR TRUNKING AND DISTRIBUTION BOARDS (WORK GROUP NO.160)</p>					
<p>Tenderers are referred to the project specification for full descriptions of materials, etc. to be used. All work shall be done strictly in accordance with the specification and manufactures instructions and to be left in perfect working order after completion</p>					
<p>Tenderers are to refer to the Department of Public Works Specifications : PW371-B Edition 2.1 July 2014 and PW371-A Edition 2.0 July 2013 for further description and amplification of work in this section.</p>					
<p>Busbar System Supply and Installion of a busbar system by a Specialist Contractor as per the specification</p>					
<p>Sub-contact Agreement and Preliminaries <u>Allow to comply with the specifications and contract requirements providing the following:</u></p>					
1	Definitions and Interpretation	Item			
2	Subcontractors Site Representative	Item			
3	Indemnities	Item			
4	Works and N/S Works insurances	Item			
5	Liability insurances	Item			
6	Security	Item			
7	Preparation for and execution of the works	Item			
8	Setting out of the works	Item			
9	Subcontractor's Plant and services	Item			
10	Management of the works	Item			
11	Plant, Equipment, Sheds and Offices	Item			
12	Telecommunication facilities	Item			
13	Responsibility for Prime Cost amounts	Item			
Carried Forward					

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
14	General Attendance		Item			
15	Special Attendance		Item			
16	Works cleaning and clearing		Item			
17	Overhand work		Item			
	Personal Protective Equipment					
	<u>Provide, supply and maintain for each worker the following SANS approved personal protective equipment & clothing as per the site specific risk assessment:</u>					
18	Hard Hat (High Density polyethylene with 6 point lining)		Item			
19	Overall / Work suit (100% Cotton)		Item			
20	High Visibility reflecting vest and / or bibs		Item			
21	Safety boot / shoes (Steel toe caps)		Item			
22	Safety Gumboot (Steel toe caps)		Item			
23	Ear Plugs and Muffs		Item			
24	Dust Musks (at least FF2 type)		Item			
25	Respirators		Item			
26	Safety goggles		Item			
27	Temporary handrails, toe banks etc other than for access scaffoldings		Item			
28	Personal fall arrest and rescue equipment with and including life lines and associated equipments		Item			
29	Allow for provision of telecommunication facilities for the appointed construction Health and Safety Officer		Item			
	Medical Examinations					
30	Allow for pre employment Medicals		Item			
31	Allow for baseline psychological examination		Item			
32	Allow for exit Medicals		Item			
		Carried Forward				

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
33	Allow for all compulsory health and safety awareness programmes (e.g Inductions, Toolbox talk, safety Promotions, H&S training etc)		Item			
	Busbar System Installation					
	<u>From Main metering panel to Main LV Distribution Board:</u>					
	<u>1250Amp 3P+N+Integral Earth Cu IP55</u>					
34	Supply and Install 1250A Busbar Straights (Unit Rate p/m)		m	45		
35	Supply and Install Panel Flanges.		No	2		
36	Supply and Install Bends (Extra over labour charge).		No	4		
37	Supply and Install Hanger brackets (Every1.5m).		No	30		
	<u>From Generator to Main LV Distribution Board: 1250Amp</u>					
	<u>3P+N+Integral Earth Cu IP55.</u>					
38	Supply and Install 1250A Busbar Straights (Unit Rate p/m)		m	20		
39	Supply and Install Generator Flange.		No	1		
40	Supply and Install Panel Flanges.		No	1		
41	Supply and Install Bends (Extra over labour charge).		No	3		
42	Supply and Install Flange End Box + Flange Bellow.		No	2		
43	Supply and Install Hanger brackets (Every1.5m).		No	14		
	<u>Floor Risers from Main LV Distribution Board: 800Amp</u>					
	<u>3P+N+Integral Earth Cu IP55.</u>					
44	Supply and Install Horizontal 800A Busbar Straights (Unit Rate p/m).		m	55		
45	Supply and Install Vertical 800A Busbar Straights (Unit Rate p/m).		m	48		
46	Supply and Install Panel Flanges.		No	2		
47	Supply and Install Bends (Extra over labour charge).		No	6		
48	Supply and Install End Caps.		No	4		
49	Supply and Install Plug in Provision.		No	12		
50	Supply and Install Plug in Box (150Amp MCCB/Siemens or Equivalent).		No	12		
51	Supply and Install Vertical Supports.		No	48		
		Carried Forward				

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
52	Supply and Install Vertical rigid hanger.		No	48		
53	Supply and Install Vertical spring hanger.		No	48		
54	Supply and Install Hanger brackets (Horizontal Every 1.5m)		No	37		
Labelling and Marking						
55	Allow for marking and labelling of all Barsbar equipment etc.		Sum	1		
As-built information and Operating and Maintenance Manuals						
56	Obtaining of all available information, compiling and finalizing of three (3) sets of Hard Copies and five (5) copies of "As-built" information / drawings, Operating and Maintenance manuals as specified, and handing over to the Engineer.		Sum	1		
Training of Maintenance Staff						
57	Development of a syllabus for training of maintenance staff.		Sum	1		
58	Presentating a training course for Maintenance Staff.		No	1		
Commissioning and testing						
59	Allow for the Commissioning, Testing and issuing of certificates for the entire Busbar Installation.		Sum	1		
60	Provisional Sum for the Testing of hot spots by Infrared Thermal Imaging Camera on the entire Electrical Installation by Specialist.		Item			15 000.00
61	Profit and Attendance on above item.		%	15 000.00		
Guarantee and Warranty						
62	Allow for Guarantee and warranties for the complete Busbar Installation, including all fittings, materials and workmanship for a period of 12 months after the date of works completion and handover.		Sum	1		
Maintenance & Service Contract						
63	Maintenance & Servicing of the complete Busbar Installation during the 12 months defects liability period.		Sum	1		
Covid-19 Regulations						
64	Allow for an amount to provide staff the necessary masks, sanitizer and other PPE to comply with the latest Government COVID-19 Regulations and Directions.		Sum	1		
Carried Forward to collection page						

Item	Description	Unit	Qty	Rate	Amount
	<p>SECTION BILL NO.7 STANDBY GENERATOR (WORK GROUP NO.160)</p> <p>Tenderers are referred to the project specification for full descriptions of materials, etc. to be used. All work shall be done strictly in accordance with the specification and manufactures instructions and to be left in perfect working order after completion</p> <p>Tenderers are to refer to the Department of Public Works Specifications : PW371-B Edition 2.1 July 2014 and PW371-A Edition 2.0 July 2013 for further description and amplification of work in this section.</p> <p><u>Standby Generator Installed by Specialist Contractor as per the Specification</u></p> <p><u>Sub-contact Agreement and Preliminaries</u> <u>Allow to comply with the specifications and contract requirements providing the following:</u></p>				
1	Definitions and Interpretation	Item			
2	Subcontractors Site Representative	Item			
3	Indemnities	Item			
4	Works and N/S Works insurances	Item			
5	Liability insurances	Item			
6	Security	Item			
7	Preparation for and execution of the works	Item			
8	Setting out of the works	Item			
9	Subcontractor's Plant and services	Item			
10	Management of the works	Item			
11	Plant, Equipment, Sheds and Offices	Item			
12	Telecommunication facilities	Item			
	Carried Forward				

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
13	Responsibility for Prime Cost amounts		Item			
14	General Attendance		Item			
15	Special Attendance		Item			
16	Works cleaning and clearing		Item			
17	Overhand work		Item			
	Personal Protective Equipment					
	<u>Provide, supply and maintain for each worker the following SANS approved personal protective equipment & clothing as per the site specific risk assessment:</u>					
18	Hard Hat (High Density polyethylene with 6 point lining)		Item			
19	Overall / Work suit (100% Cotton)		Item			
20	High Visibility reflecting vest and / or bibs		Item			
21	Safety boot / shoes (Steel toe caps)		Item			
22	Safety Gumboot (Steel toe caps)		Item			
23	Ear Plugs and Muffs		Item			
24	Dust Musks (at least FF2 type)		Item			
25	Respirators		Item			
26	Safety goggles		Item			
27	Temporary handrails, toe banks etc other than for access scaffoldings		Item			
28	Personal fall arrest and rescue equipment with and including life lines and associated equipments		Item			
29	Allow for provision of telecommunication facilities for the appointed construction Health and Safety Officer		Item			
		Carried Forward				

Item	Description	Brought Forward	Unit	Rate	Amount
Medical Examinations					
30	Allow for pre employment Medicals		Item		
31	Allow for baseline psychological examination		Item		
32	Allow for exit Medicals		Item		
Health and Safety Education					
33	Allow for all compulsory health and safety awareness programmes (e.g Inductions, Toolbox talk, safety Promotions, H&S training etc)		Item		
As-built information and Operating and Maintenance Manuals					
34	Obtaining of all available information, compiling and finalizing of three (3) sets of Hard Copies and five (5) copies of "As-built" information / drawings, Operating and Maintenance manuals as specified, and handing over to the Engineer.		Sum	1	
Training of Maintenance Staff					
35	Provide staff training on the Standby Generator.		Sum	1	
36	Development of a syllabus for training of maintenance staff.		Sum	1	
37	Presentating a training course for Maintenance Staff.		No	1	
Standby Generator and Control Panel					
38	Supply and Install a 500kVA Diesel Standby Generator on skid frame including Battery Charger, Maintenance free Battery, Heater, terminal box for all controls, 12Hr day tank. Alternator terminal box to accomidate a BusBar termination.		No	1	
39	Supply and Install an Intelligent genset controller for 500kVA Standby Generator into a floor mounted metal Control Panel, including Oil Pressure gauge, Fuel gauge Battery Voltage Meter, Amp Meter, Volt Meter, Frequency meter, Maximum Demand meter, Motorized MCB dual Change Over Units, Generator controller to interface with the control system via CAN BUS and conform with the programmedmanagement criteria. Connection to generator via 800Amp BusBar system. This panel to be incorporated into the main LV panel. Panel requirements to be located in PHB		No	1	
Carried Forward					

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
40	Supply and install super residential 3CR12 exhaust including lagging and cladded in Stainless Steel. External Exhaust to be 8m long.		No	1		
	Diesel Tank					
41	Supply and Install a 5000 Litre free-standing bulk diesel tank incorporating 2 additional in line fuel filters, to be installed within a bund wall (fiberglass lined). Fuel tanks to have mechanical fuel gauges fitted and circulation pump.		No	1		
42	Provisional Sum for the Supply of the first 5000L diesel fill.		Item			100 000.00
	Attendance on ditto		%	100 000.00		
	Profit on above item		%	100 000.00		
	BMS SCADA System for Standby Generator					
43	Supply and Install Internet/ethernet bridge and dongal.		No	1		
44	Supply and Install a 6 port switch		No	1		
45	Supply and Install Optic to CAT5 converter		No	1		
46	Supply and Install a BMS SCADA 32" LED Full HD Monitor.		No	1		
47	Supply and Install a BMS SCADA Operators workstation as a Intel i7-8700 (6 core, 12Mb, 3.2Ghz, 16GB DDR4 2666MHz RAM, 1Gbps (RJ45) LAN connection, Windows 10 Proffessional Edirion, Nvida Quadro P2000 graphics card, 1TB 5400rpm hard Drive including keyboard, mouse, OS software and licences, with 3 year (Next Business Day) on-site warranty replacement.		No	1		
48	Supply and Install BMS SCADA software and licence.		No	1		
49	Provide an Electronic Schematic Layout.		No	1		
50	Supply and Install 4-20mA capaitive level sensors to be installed onto the Bulk Diesel Fuel Tank. Cabled and feedback to Standby Generator control panel for the control system (High, Low & Shut down).		No	3		
		Carried Forward				

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
Sound attenuation (inlet and outlet)						
<u>Doors</u>						
51	Supply and Install a Double acoustic galvanized door and frame, epoxy coated brown, size 1960(W) x 2500(H), complete with lockable latches. XT Type or equal approved by Engineer.		No	1		
52	Supply and Install a Single acoustic galvanized door and frame, epoxy coated brown, size 1960(W) x 2500(H), complete with lockable latches. XT Type or equal approved by Engineer.		No	1		
<u>Sound Attenuators</u>						
53	Supply and Install 1800(W) x 2400(H) x 1500(D) Sounds. Attenuator.		No	2		
<u>External Louvres</u>						
54	Supply and install 1800(W) x 2400(H) AWG + WMS galvanized and epoxy coated brown.		No	2		
Electrical Connections						
55	Electrical Connections to the Standby Generator as per SANS 10412-1 Code of Practice for Wiring of Premises.		Sum	1		
Commissioning and testing						
56	Allow for the Commissioning, Testing and issuing of certificates for the entire Standby Generator Installation.		Sum	1		
57	Allow for the Commissioning, Testing and issuing of certificates for the entire BMS SCADA Installation.		Sum	1		
58	Supply of tool and spares as per FH11 including lockable steel cabinet.		No	1		
59	Supply 25mm shank padlocks keyed alike		No	5		
60	Provisional Sum for the Testing of hot spots by Infrared Thermal Imaging Camera on the Standby Gen Installation by Specialist.		Item			10 000.00
61	Profit and Attendance on above item.		%	10 000.00		
Carried Forward						

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
62	Provide a Certificate of Compliance in accordance with the latest SANS 10412-1 Wiring of premises Part 1 for the entire Standby Generator Installation.		Sum	1		
Guarantee and Warranty						
63	Allow for Guarantee and warranties on the Standby Generator for a period of 12 months after works contract completion.		Sum	1		
64	Allow for Guarantee and warranties on the BMS SCADA system for a period of 12 months after works contract completion.		Sum	1		
Maintenance & Service Contract						
65	Maintenance & Servicing of the Standby Generator during the 12 months defects liability period.		Sum	1		
66	Maintenance & Servicing of the BMS SCADA System during the 12 months defects liability period.		Sum	1		
Covid-19 Regulations						
67	Allow for an amount to provide staff the necessary masks, sanitizer and other PPE to comply with the latest Government COVID-19 Regulations and Directions.		Sum	1		
Carried Forward to collection page						

#REF!	SECTION	Unit	Qty	Rate	Amount
	BILL NO.8				
	UPS INSTALLATION (WORK GROUP NO.160)				
Item	Description				
	Tenderers are referred to the project specification for full descriptions of materials, etc. to be used. All work shall be done strictly in accordance with the specification and manufactures instructions and to be left in perfect working order after completion				
	Tenderers are to refer to the Department of Public Works Specifications : PW371-B Edition 2.1 July 2014 and PW371-A Edition 2.0 July 2013 for further description and amplification of work in this section.				
	UPS Installed by Specialist				
	Contractor as per the Specification				
	Sub-contact Agreement and Preliminaries				
	<u>Allow to comply with the specifications and contract requirements providing the following:</u>				
1	Definitions and Interpretation	Item			
2	Subcontractors Site Representative	Item			
3	Indemnities	Item			
4	Works and N/S Works insurances	Item			
5	Liability insurances	Item			
6	Security	Item			
7	Preparation for and execution of the works	Item			
8	Setting out of the works	Item			
9	Subcontractor's Plant and services	Item			
10	Management of the works	Item			
11	Plant, Equipment, Sheds and Offices	Item			
12	Telecommunication facilities	Item			
	Carried Forward				

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
13	Responsibility for Prime Cost amounts		Item			
14	General Attendance		Item			
15	Special Attendance		Item			
16	Works cleaning and clearing		Item			
17	Overhand work		Item			
	Personal Protective Equipment					
	<u>Provide, supply and maintain for each worker the following SANS approved personal protective equipment & clothing as per the site specific risk assessment:</u>					
18	Hard Hat (High Density polyethylene with 6 point lining)		Item			
19	Overall / Work suit (100% Cotton)		Item			
20	High Visibility reflecting vest and / or bibs		Item			
21	Safety boot / shoes (Steel toe caps)		Item			
22	Safety Gumboot (Steel toe caps)		Item			
23	Ear Plugs and Muffs		Item			
24	Dust Musks (at least FF2 type)		Item			
25	Respirators		Item			
26	Safety goggles		Item			
27	Temporary handrails, toe banks etc other than for access scaffoldings		Item			
28	Personal fall arrest and rescue equipment with and including life lines and associated equipments		Item			
29	Allow for provision of telecommunication facilities for the appointed construction Health and Safety Officer		Item			
		Carried Forward				

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
	Medical Examinations					
30	Allow for pre employment Medicals		Item			
31	Allow for baseline psychological examination		Item			
32	Allow for exit Medicals		Item			
	Health and Safety Education					
33	Allow for all compulsory health and safety awareness programmes (e.g Inductions, Toolbox talk, safety Promotions, H&S training etc)		Item			
	As-built information and Operating and Maintenance Manuals					
34	Obtaining of all available information, compiling and finalizing of three (3) sets of Hard Copies and five (5) copies of "As-built" information / drawings, Operating and Maintenance manuals as specified, and handing over to the Engineer.		Sum	1		
	Training of Maintenance Staff					
35	Provide staff training on the UPS Unit.		Sum	1		
36	Development of a syllabus for training of maintenance staff.		Sum	1		
37	Presentating a training course for Maintenance Staff.		No	1		
	40kVA UPS					
38	Supply and install a 40kVA 3-ph on line UPS in 2+1 parallel operation, with internal battery for 15 minutes at full load in unitary operation, and each supplied with SNMP interface card and UPS monitoring/ alarm management software. Must include 2x6 monthly services within warranty year.		No	4		
	Access Flooring					
39	Supply and Install Access Flooring at 300mm above floor level.		m ²	50		
40	Supply a Floor Access tool.		No	2		
41	Supply and Install 600 x 600mm Aluminium Floor Frame.		No	6		
42	Supply and Install Access ramp.		No	2		
	Carried Forward					

Item	Description	Unit	Qty	Rate	Amount
Brought Forward					
Electrical Connections					
43	Electrical Connections to UPS as per SANS 10412-1 Code of Practice for Wiring of Premises.	Sum	1		
Commissioning and testing					
44	Allow for the Commissioning, Testing and issuing of certificates for the entire UPS Installation.	Sum	1		
45	Supply of tool and spares as per FH11 including lockable steel cabinet.	No	1		
46	Provisional Sum for the Testing of hot spots by Infrared Thermal Imaging Camera on the UPS Installation by Specialist.	Item			10 000.00
47	Profit and Attendance on above item.	%	10 000.00		
48	Provide a Certificate of Compliance in accordance with the latest SANS 10412-1 Wiring of premises Part 1 for the entire Electrical and Electronic Services Installation.	Sum	1		
Guarantee and Warranty					
49	Allow for Guarantee and warranties for the complete UPS Installation, including all fittings, materials and workmanship for a period of 12 months after the date of works completion and handover.	Sum	1		
Maintenance & Service Contract					
50	Maintenance & Servicing of the complete UPS Installation during the 12 months defects liability period.	Sum	1		
Covid-19 Regulations					
51	Allow for an amount to provide staff the necessary masks, sanitizer and other PPE to comply with the latest Government COVID-19 Regulations and Directions.	Sum	1		
Carried Forward to collection page					

Item	Description	Unit	Qty	Rate	Amount
	<p>SECTION BILL NO.9 LIGHTNING PROTECTION (WORK GROUP NO.160)</p> <p>Tenderers are referred to the project specification for full descriptions of materials, etc. to be used. All work shall be done strictly in accordance with the specification and manufactures instructions and to be left in perfect working order after completion</p> <p>Tenderers are to refer to the Department of Public Works Specifications : PW371-B Edition 2.1 July 2014 and PW371-A Edition 2.0 July 2013 for further description and amplification of work in this section.</p> <p><u>Lightning Protection System Installed by Specialist Contractor as per the Specification</u></p> <p>Sub-contact Agreement and Preliminaries <u>Allow to comply with the specifications and contract requirements providing the following:</u></p>				
1	Definitions and Interpretation	Item			
2	Subcontractors Site Representative	Item			
3	Indemnities	Item			
4	Works and N/S Works insurances	Item			
5	Liability insurances	Item			
6	Security	Item			
7	Preparation for and execution of the works	Item			
8	Setting out of the works	Item			
9	Subcontractor's Plant and services	Item			
10	Management of the works	Item			
11	Plant, Equipment, Sheds and Offices	Item			
12	Telecommunication facilities	Item			
	Carried Forward				

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
13	Responsibility for Prime Cost amounts		Item			
14	General Attendance		Item			
15	Special Attendance		Item			
16	Works cleaning and clearing		Item			
17	Overhand work		Item			
	Personal Protective Equipment					
	<u>Provide, supply and maintain for each worker the following SANS approved personal protective equipment & clothing as per the site specific risk assessment:</u>					
18	Hard Hat (High Density polyethylene with 6 point lining)		Item			
19	Overall / Work suit (100% Cotton)		Item			
20	High Visibility reflecting vest and / or bibs		Item			
21	Safety boot / shoes (Steel toe caps)		Item			
22	Safety Gumboot (Steel toe caps)		Item			
23	Ear Plugs and Muffs		Item			
24	Dust Musks (at least FF2 type)		Item			
25	Respirators		Item			
26	Safety goggles		Item			
27	Temporary handrails, toe banks etc other than for access scaffoldings		Item			
28	Personal fall arrest and rescue equipment with and including life lines and associated equipments		Item			
29	Allow for provision of telecommunication facilities for the appointed construction Health and Safety Officer		Item			
		Carried Forward				

Item	Description	Brought Forward	Unit	Rate	Amount
Medical Examinations					
30	Allow for pre employment Medicals		Item		
31	Allow for baseline psychological examination		Item		
32	Allow for exit Medicals		Item		
Health and Safety Education					
33	Allow for all compulsory health and safety awareness programmes (e.g Inductions, Toolbox talk, safety Promotions, H&S training etc)		Item		
As-built information and Operating and Maintenance Manuals					
34	Obtaining of all available information, compiling and finalizing of three (3) sets of Hard Copies and five (5) copies of "As-built" information / drawings, Operating and Maintenance manuals as specified, and handing over to the Engineer.		Sum	1	
Training of Maintenance Staff					
35	Provide staff training on the Lightning Protection System.		Sum	1	
36	Development of a syllabus for training of maintenance staff.		Sum	1	
37	Presentating a training course for Maintenance Staff.		No	2	
Risk Analysis and Soil Resistivity Testing					
38	Risk Analysis by specialist in terms of SANS 62035-2 Tolerable Risk Levels (RT) Report showing the required mitigation methods in order to reduce the calculated risk below the tolerable risk.		Sum	1	
39	Soil resistivity survey and classification into 2 layer model. Report of results to be presented for approval by Engineer.		Sum	1	
Seperation Distance					
40	Calculate Seperation distance for each building in accordance with SANS 62035-3 and present result in report for approval.		Sum	1	
Air Termination System					
41	Conduct rolling sphere analysis of the Main Building.		Sum	1	
Carried Forward					

Item	Description	Unit	Qty	Rate	Amount
	<u>Main Building</u>				
42	Supply and install connection between downconductor and metal roof sheeting.	No	200		
43	Supply and install STAINLESS STEEL conductor holders to parapit walls. Conductor holders are not to be secured by drilling through waterproofing. Conductor holders are to be certified in terms of EN 50164.	No	400		
44	Supply and install 50mm ² aluminium conductor for air termination system. Conductor to be certified in terms of EN 50164.	m	400		
45	Supply and install 3,5m air termination mast secured to satellite dish / radio antenna. Mast must be design to withstand 140 km/hr wind loading. Mast to be seperated from mast by calculated seperation distance. Mast to be secured with stainless steel fittings and fibreglass ISO spacers. All fittings to be certified in terms of EN 50164.	No	20		
46	Connection of air termination masts to air termination system with 50mm ² aluminium conductor and conductor holders	No	20		
47	Supply and install 5m free standing air termination mast. . Mast must be design to withstand 140 km/hr wind loading. Mast to be seperated from mast by calculated seperation distance. Mast to be secured with stainless steel fittings and fibreglass ISO spacers. All fittings to be certified in terms of EN 50164.	No	3		
48	Supply and install DEHN HVI Mast with stainless steel fittings to radio mast.	No	1		
49	Supply and instal DEHN HVI conductor with stainless steel conductor holders.	m	30		
	Down Conductor System				
50	Supply and install stainless steel conductor holders to vertical walls. Conductor holders are to be certified in terms of EN 50164.	No	2 000		
	Carried Forward				

		Brought Forward			
Item	Description	Unit		Rate	Amount
51	Supply and install 50mm ² aluminium conductor for downconductor system. Conductor to be certified in terms of EN 50164.	m	2 000		
52	Supply and install flush mounted inspection box. Inspection box to be complete with termination of the downconductor to the earth termination system. Front cover of inspection box shall be fitted with aluminium plate indicating downconductor no, date of installation and test reading.	No	200		
53	Supply and install 50mm ² PVC insulated copper for connection from test point to earth spike. Including all fixings against wall, chasing into concrete and making good there of.	m	1 000		
Earth Termination System					
54	Supply and install SABS A grade earth spike, 16mm x 1,5m. Earth spike to be installed 1m away from building and buried to a depth of min 500mm.	No	200		
55	Supply and install 50mm ² BCEW - TYPE B earth termination system. Including excavations. Earth termination system to be buried a minimum of 500mm and connected to downconductor by CAD weld.	m	1 000		
56	Conduct resistance test of each building with C2 probe at 100m and resolution at 5m. Results to be presented in report.	Sum	1		
57	Issue Safety Report for each building in terms of SANS 10313 Annex A.				
Commissioning and testing of the Lightning Protection installation					
58	Allow for the Commissioning and testing of the entire Lightning Protection Installation.	Sum	1		
59	Supply of tool and spares as per FH11 including lockable steel cabinet.	No	1		
60	Allow to issue a certificate of compliance for the Lightning Protection Installation.	Sum	1		
Carried Forward					

Item	Description	Brought Forward	Unit	Rate	Amount
61	Provide a Certificate of Compliance in accordance with the latest SANS 10412-1 Wiring of premises Part 1 for the entire Lightning Protection Installation.	Sum	1		
Guarantee and Warranty					
62	Allow for Guarantee and warranties for the complete Lightning Protection Installation, including all fittings, materials and workmanship for a period of 12 months after the date of works completion and handover.	Sum	1		
Maintenance & Service Contract					
63	Maintenance & Servicing of the complete Lightning Protection Installation during the 12 months defects liability period.	Sum	1		
Covid-19 Regulations					
64	Allow for an amount to provide staff the necessary masks, sanitizer and other PPE to comply with the latest Government COVID-19 Regulations and Directions.	Sum	1		
Carried Forward to collection page					

Item	Description	Unit	Qty	Rate	Amount
	<p>SECTION BILL NO.10 ACCESS CONTROL (WORK GROUP NO.160)</p> <p>Tenderers are referred to the project specification for full descriptions of materials, etc. to be used. All work shall be done strictly in accordance with the specification and manufactures instructions and to be left in perfect working order after completion</p> <p>Tenderers are to refer to the Department of Public Works Specifications : PW371-B Edition 2.1 July 2014 and PW371-A Edition 2.0 July 2013 for further description and amplification of work in this section.</p> <p><u>Access Control System Installed by Specialist Contractor as specified in PIJ 04</u></p> <p>Sub-contact Agreement and Preliminaries <u>Allow to comply with the specifications and contract requirements providing the following:</u></p>				
1	Definitions and Interpretation	Item			
2	Subcontractors Site Representative	Item			
3	Indemnities	Item			
4	Works and N/S Works insurances	Item			
5	Liability insurances	Item			
6	Security	Item			
7	Preparation for and execution of the works	Item			
8	Setting out of the works	Item			
9	Subcontractor's Plant and services	Item			
10	Management of the works	Item			
11	Plant, Equipment, Sheds and Offices	Item			
12	Telecommunication facilities	Item			
	Carried Forward				

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
13	Responsibility for Prime Cost amounts		Item			
14	General Attendance		Item			
15	Special Attendance		Item			
16	Works cleaning and clearing		Item			
17	Overhand work		Item			
	Personal Protective Equipment					
	<u>Provide, supply and maintain for each worker the following SANS approved personal protective equipment & clothing as per the site specific risk assessment:</u>					
18	Hard Hat (High Density polyethylene with 6 point lining)		Item			
19	Overall / Work suit (100% Cotton)		Item			
20	High Visibility reflecting vest and / or bibs		Item			
21	Safety boot / shoes (Steel toe caps)		Item			
22	Safety Gumboot (Steel toe caps)		Item			
23	Ear Plugs and Muffs		Item			
24	Dust Musks (at least FF2 type)		Item			
25	Respirators		Item			
26	Safety goggles		Item			
27	Temporary handrails, toe banks etc other than for access scaffoldings		Item			
28	Personal fall arrest and rescue equipment with and including life lines and associated equipments		Item			
29	Allow for provision of telecommunication facilities for the appointed construction Health and Safety Officer		Item			
		Carried Forward				

Item	Description	Brought Forward	Unit	Rate	Amount
Medical Examinations					
30	Allow for pre employment Medicals		Item		
31	Allow for baseline psychological examination		Item		
32	Allow for exit Medicals		Item		
Health and Safety Education					
33	Allow for all compulsory health and safety awareness programmes (e.g Inductions, Toolbox talk, safety Promotions, H&S training etc)		Item		
As-built information and Operating and Maintenance Manuals					
34	Obtaining of all available information, compiling and finalizing of three (3) sets of Hard Copies and five (5) copies of "As-built" information / drawings, Operating and Maintenance manuals as specified, and handing over to the Engineer.		Sum	1	
Training of Maintenance Staff					
35	Provide staff training on the Access Control System.		Sum	1	
36	Development of a syllabus for training of maintenance staff.		Sum	1	
37	Presentating a training course for Maintenance Staff.		No	2	
Headend Access Control Equipment					
38	Supply and Install a desktop PC with Intel Core i7 2600 3.4Ghz 8GB 1333Mhz DDR3 RAM, 1 TB Serial HD installed with Windows 10 Professional, Running Graphical UI and Operator Interface.		No	1	
39	Supply and Install a 23" LCD Flat Screen.		No	1	
40	Supply and Install a Wired Keyboard.		No	1	
41	Supply and Install a Wired Mouse.		No	1	
42	Supply and Install Access Control Software inclusive of enrollment station.		No	1	
Carried Forward					

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
43	Supply and Install Access Control System Controller with integrated power supply in dedicated housing in the main Control Room.		No	1		
44	Programming and commissioning of the Access Control System.		Sum	1		
	Field Access Control Equipment					
45	Supply, installation, testing and commissioning of industrial slide gate motor inclusive of battery and control card and sensor beam.		No	3		
46	Supply and Install UH Receivers for remotes at gates.		No	3		
47	Supply and install stainless steel 316 Gooseneck and housing for intercom and tag reader at gate entrances and exit.		No	6		
48	Supply and Install Centurion Sector 3.5m Boom Gates, complete with Safety Loop and IR Detectors.		No	6		
49	Supply and Install UH Receivers for remotes for Boom gates.		No	6		
50	Supply and programme UHF Remote with built-in RF Tag.		No	10		
51	Supply and Install Fingerprint Reader with Key Pad.		No	100		
52	Supply and Install Tag Readers.		No	100		
53	Supply and Install Mag Locks 2000N.		No	50		
54	Supply and Install Auto Door Closers.		No	50		
55	Supply and Programme Access RF Tags.		No	100		
	Turnstiles					
56	Supply and Install TURNSTAR Tribune full height, 4-Arm single card reader turnstile, with a 1200mm wide GMS swing gate with overhead self-closer. Refer to Door schedules for details on construction and finish.		No	2		
	Wireways for the Access Control System					
57	Supply and Install 25mm PVC Conduit.		m	2000		
		Carried Forward				

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
58	Supply and Install 25mm PVC 60mm round, 1-, 2-, 3- or 4-way entry.		No	150		
59	Supply and Install 25mm Galvanized Conduit.		m	100		
Access Control Cabling						
60	Supply and Install Cat6 Data cable.		m	1000		
61	6 pair screened twisted pair mylar 0.2mm cable.		m	1000		
62	Supply and install 16 core 0.2mm multicore cable.		m	100		
Electrical Connections						
63	Electrical Connections to all Access Control Equipment as per SABS 0142 Code of Practice for the Wiring of Premises.		Sum	1		
Commissioning and testing						
64	Allow for the Commissioning, Testing and issuing of certificates for the entire Access Control System Installation.		Sum	1		
65	Provisional Sum for the Testing of hot spots by Infrared Thermal Imaging Camera on the Access Control Installation by Specialist.		Item			10 000.00
66	Profit and Attendance on above item.		%	10 000.00		
67	Provide a Certificate of Compliance in accordance with the latest SANS 10412-1 Wiring of premises Part 1 for the Access Control Installation.		Sum	1		
Guarantee and Warranty						
68	Allow for Guarantee and warranties for the complete Access Control Installation, including all fittings, materials and workmanship for a period of 12 months after the date of works completion and handover.		Sum	1		
Maintenance & Service Contract						
69	Maintenance & Servicing of the complete Access Control Installation during the 12 months defects liability period.		Sum	1		
Covid-19 Regulations						
70	Allow for an amount to provide staff the necessary masks, sanitizer and other PPE to comply with the latest Government COVID-19 Regulations and Directions.		Sum	1		
Carried Forward to collection page						

Item	Description	Unit	Qty	Rate	Amount
<p>SECTION BILL NO.11 CCTV INSTALLATION (WORK GROUP NO.160)</p>					
<p>Tenderers are referred to the project specification for full descriptions of materials, etc. to be used. All work shall be done strictly in accordance with the specification and manufactures instructions and to be left in perfect working order after completion</p>					
<p>Tenderers are to refer to the Department of Public Works Specifications : PW371-B Edition 2.1 July 2014 and PW371-A Edition 2.0 July 2013 for further description and amplification of work in this section.</p>					
<p><u>CCTV System Installed by Specialist Contractor as per the Specification</u></p>					
<p>Sub-contact Agreement and Preliminaries <u>Allow to comply with the specifications and contract requirements providing the following:</u></p>					
1	Definitions and Interpretation	Item			
2	Subcontractors Site Representative	Item			
3	Indemnities	Item			
4	Works and N/S Works insurances	Item			
5	Liability insurances	Item			
6	Security	Item			
7	Preparation for and execution of the works	Item			
8	Setting out of the works	Item			
9	Subcontractor's Plant and services	Item			
10	Management of the works	Item			
11	Plant, Equipment, Sheds and Offices	Item			
12	Telecommunication facilities	Item			
Carried Forward					

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
13	Responsibility for Prime Cost amounts		Item			
14	General Attendance		Item			
15	Special Attendance		Item			
16	Works cleaning and clearing		Item			
17	Overhand work		Item			
	Personal Protective Equipment					
	<u>Provide, supply and maintain for each worker the following SANS approved personal protective equipment & clothing as per the site specific risk assessment:</u>					
18	Hard Hat (High Density polyethylene with 6 point lining)		Item			
19	Overall / Work suit (100% Cotton)		Item			
20	High Visibility reflecting vest and / or bibs		Item			
21	Safety boot / shoes (Steel toe caps)		Item			
22	Safety Gumboot (Steel toe caps)		Item			
23	Ear Plugs and Muffs		Item			
24	Dust Musks (at least FF2 type)		Item			
25	Respirators		Item			
26	Safety goggles		Item			
27	Temporary handrails, toe banks etc other than for access scaffoldings		Item			
28	Personal fall arrest and rescue equipment with and including life lines and associated equipments		Item			
29	Allow for provision of telecommunication facilities for the appointed construction Health and Safety Officer		Item			
		Carried Forward				

Item	Description	Brought Forward	Unit	Rate	Amount
Medical Examinations					
30	Allow for pre employment Medicals		Item		
31	Allow for baseline psychological examination		Item		
32	Allow for exit Medicals		Item		
Health and Safety Education					
33	Allow for all compulsory health and safety awareness programmes (e.g Inductions, Toolbox talk, safety Promotions, H&S training etc)		Item		
As-built information and Operating and Maintenance Manuals					
34	Obtaining of all available information, compiling and finalizing of three (3) sets of Hard Copies and five (5) copies of "As-built" information / drawings, Operating and Maintenance manuals as specified, and handing over to the Engineer.		Sum	1	
Training of Maintenance Staff					
35	Provide staff training on the CCTV System.		Sum	1	
36	Development of a syllabus for training of maintenance staff.		Sum	1	
37	Presentating a training course for Maintenance Staff.		No	2	
Headend Access Control Equipment					
<u>Video Management Servers</u>					
38	Intel Xeon processor E3-1275 V3 (3.5 GHz, 8Mb cache), 8 GB DDR3 Ram, Raid-1, 2 x 1TB SSD, DVD-WR Dual 1Gbs LAN ports, Dual redundant hot swappable Power Supplies, OS and Licenses to be included.		No	2	
<u>Video Management Software and Licensing</u>					
39	Digital Media Control Video Management/Storage Software and Licensing for 150 Cameras or better.		No	2	
Carried Forward					

Item	Description	Unit	Qty	Rate	Amount
	<u>iSCSI Recording Devices</u>				
40	19" Rack Mount, 2U or 3U, 2Gbs throughput via Port Teaming. Up to 192TB RAW Storage Capacity. RAID 5 with WIZARD based configuration and built-in Health Monitoring and Fault Notification via the VMS Operator Interface. Record 128 video streams per iSCSI recording device. Supplied with 25 x 8TB HDD, Total of 192TB Usable Storage - Incl. Dual Power Supplies, Software, Network Management Port, etc.	No	2		
41	Supply and Install Additional User License for operator or Web Client Applications.	No	2		
42	Supply and Install Camera Management Software to integrate with Security Management System - GUI, Alarm, etc. Integration.	No	2		
	Control Room Equipment				
	<u>Video Wall Workstation: 4-Monitor</u>				
43	Supply, Install and Commission Video Wall Workstations, Intel i7-8700 (6 core, 12Mb, 3.2Ghz, 16GB DDR4 2666MHz RAM, 1Gbps (RJ45) LAN connection, Windows 10 Professional Edirion, Nvidia Quadro P2000 graphics card, 1TB 5400rpm hard Drive including keyboard, mouse, OS software and licences, with 3 year (Next Business Day) on-site warranty replacement.	No	2		
	<u>Operator Workstation: 2-Monitor</u>				
44	Supply, Install and Commission Operator Workstation, Intel i7-8700 (6 core, 12Mb, 3.2Ghz, 16GB DDR4 2666MHz RAM, 1Gbps (RJ45) LAN connection, Windows 10 Professional Edirion, Nvidia Quadro P2000 graphics card, 1TB 5400rpm hard Drive including keyboard, mouse, OS software and licences, with 3 year (Next Business Day) on-site warranty replacement.	No	4		
	<u>Video Surveillance Wall Monitors 42"</u>				
45	Supply, Install and Commission 42" LED Flat Screen Full HD Video Surveillance Wall Monitors in compliance with the specification, and with all additional accessories to make the installation complete.	No	8		
	Carried Forward				

Item	Description	Unit	Rate	Amount
	<u>Operator Video Surveillance Monitor 23"</u>			
46	Supply, Install and Commission 23" LED Flat Screen Full HD Video Surveillance Operator Monitors in compliance with the specification, and with all additional accessories to make the installation complete.	No	4	
	Network Equipment			
	<u>Network Switches</u>			
47	Supply and Install Fibre optic switch with 24 x 10Gbe ports as per Dell N4032F or equal and approved.	No	1	
48	Supply and Install Copper ethernet switch with 48 x 10/100/1000 POE+ ports and 4 x 10Gbe SFP uplink ports as per Dell N1548P with additional MPS1000 external power supply or equal and approved.	No	6	
49	Supply and Install 10Gbe SFP transceivers matched to the Core fibre and Network POE+ switches as per above.	No	12	
50	Supply and Install 2m St - LC OM3 10Gbe Fibre patch leads.	No	12	
	<u>Network Cabinets</u>			
51	Supply and Install 19" 13U Floor mounted, Equipment Rack Cabinet, Black Powder Coated, complete with all power and cable articulation, Power Distribution Unit, Patch panels, blanking panels, cooling system, etc.	No	1	
52	Supply and Install 19" 9U Wall mounted, Equipment Rack Cabinet, Black Powder Coated, complete with all power and cable articulation, Power Distribution Unit, Patch panels, blanking panels, cooling system, etc.	No	6	
	Cameras			
53	Supply and Install High Resolution Full HD (1080P), POE, H.265 Vandal Proof Indoor/Outdoor, Fixed Dome Colour Camera, 10-23mm Auto Iris Lens.	No	132	
54	Supply and Install High Resolution Full HD (1080P), POE, H.265 Vandal Proof (ANPR) Automatic Number Plate Recognition, Fixed Colour Camera.	No	4	
	Carried Forward			

		Brought Forward			
Item	Description	Unit		Rate	Amount
55	Supply and Install High Resolution Full HD (1080P), POE, H.265 Vandal Proof Indoor, Mini Dome Colour Camera, 3-9mm Auto Iris Lens.	No	3		
Wireways for the Access Control System					
56	Supply and Install 25mm Galvanized Conduit.	m	2500		
57	Supply and Install 25mm Galvanized 60mm round, 1-, 2-, 3- or 4-way entry.	No	625		
58	Supply and Install P2000 Galvanized Wiring Channel.	m	1500		
59	Supply and Install P2000 Galvanized Wiring Channel hangers etc.	No	1000		
CCTV Cabling					
60	Supply and Install 4 core Multimode OM3 10Gig, duct cable with reinforcement.	m	1000		
61	Supply and Installation of Splicing, inclusive of pigtail and OTDR test results.	No	50		
62	Supply and Install CAT6e UTP Data cable.	m	12500		
Electrical Connections					
63	Electrical Connections to all CCTV Equipment as per SABS 0142 Code of Practice for Wiring of Premises.	Sum	1		
Commissioning and testing					
64	Allow for the Programming, Commissioning, Testing and issuing of certificates for the entire CCTV System Installation.	Sum	1		
65	Provisional Sum for the Testing of hot spots by Infrared Thermal Imaging Camera on the CCTV System Installation by Specialist.	Item			10 000.00
66	Profit and Attendance on above item.	%	10 000.00		
67	Provide a Certificate of Compliance in accordance with the latest SANS 10412-1 Wiring of premises Part 1 for the CCTV Installation.	Sum	1		
Carried Forward					

Item	Description	Brought Forward	Unit	Rate	Amount
Guarantee and Warranty					
68	Allow for Guarantee and warranties for the complete CCTV System Installation, including all fittings, materials and workmanship for a period of 12 months after the date of works completion and handover.		Sum	1	
Maintenance & Service Contract					
69	Maintenance & Servicing of the complete CCTV System Installation during the 12 months defects liability period.		Sum	1	
Covid-19 Regulations					
70	Allow for an amount to provide staff the necessary masks, sanitizer and other PPE to comply with the latest Government COVID-19 Regulations and Directions.		Sum	1	
Carried Forward to collection page					

Item	Description	Unit	Qty	Rate	Amount
	<p>SECTION BILL NO.12 FIRE DETECTION AND CO2 DETECTION (WORK GROUP NO.160)</p> <p>Tenderers are referred to the project specification for full descriptions of materials, etc. to be used. All work shall be done strictly in accordance with the specification and manufactures instructions and to be left in perfect working order after completion</p> <p>Tenderers are to refer to the Department of Public Works Specifications : PW371-B Edition 2.1 July 2014 and PW371-A Edition 2.0 July 2013 for further description and amplification of work in this section.</p> <p>Fire Detection System Installed by Specialist Contractor as per the Specification <u>Note: Installer to be registered with FDIA</u> <u>Each employee to be registered with SAQCC</u></p> <p>Sub-contact Agreement and Preliminaries <u>Allow to comply with the specifications and contract requirements providing the following:</u></p>				
1	Definitions and Interpretation	Item			
2	Subcontractors Site Representative	Item			
3	Indemnities	Item			
4	Works and N/S Works insurances	Item			
5	Liability insurances	Item			
6	Security	Item			
7	Preparation for and execution of the works	Item			
8	Setting out of the works	Item			
9	Subcontractor's Plant and services	Item			
10	Management of the works	Item			
11	Plant, Equipment, Sheds and Offices	Item			
	Carried Forward				

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
12	Telecommunication facilities		Item			
13	Responsibility for Prime Cost amounts		Item			
14	General Attendance		Item			
15	Special Attendance		Item			
16	Works cleaning and clearing		Item			
17	Overhand work		Item			
	Personal Protective Equipment					
	<u>Provide, supply and maintain for each worker the following SANS approved personal protective equipment & clothing as per the site specific risk assessment:</u>					
18	Hard Hat (High Density polyethylene with 6 point lining)		Item			
19	Overall / Work suit (100% Cotton)		Item			
20	High Visibility reflecting vest and / or bibs		Item			
21	Safety boot / shoes (Steel toe caps)		Item			
22	Safety Gumboot (Steel toe caps)		Item			
23	Ear Plugs and Muffs		Item			
24	Dust Musks (at least FF2 type)		Item			
25	Respirators		Item			
26	Safety goggles		Item			
27	Temporary handrails, toe banks etc other than for access scaffoldings		Item			
28	Personal fall arrest and rescue equipment with and including life lines and associated equipments		Item			
29	Allow for provision of telecommunication facilities for the appointed construction Health and Safety Officer		Item			
		Carried Forward				

Item	Description	Brought Forward	Unit	Rate	Amount
Medical Examinations					
30	Allow for pre employment Medicals		Item		
31	Allow for baseline psychological examination		Item		
32	Allow for exit Medicals		Item		
Health and Safety Education					
33	Allow for all compulsory health and safety awareness programmes (e.g Inductions, Toolbox talk, safety Promotions, H&S training etc)		Item		
As-built information and Operating and Maintenance Manuals					
34	Obtaining of all available information, compiling and finalizing of three (3) sets of Hard Copies and five (5) copies of "As-built" information / drawings, Operating and Maintenance manuals as specified, and handing over to the Engineer.		Sum	1	
Training of Maintenance Staff					
35	Provide staff training on the Fire Detection Equipment.		Sum	1	
36	Development of a syllabus for training of maintenance staff.		Sum	1	
37	Presentating a training course for Maintenance Staff.		No	2	
Central Fire Detection Equipment					
38	Supply and Install a Master addressable 10 zone Fire Control panel, complete with battery backup power, charging unit & printer to meet with specifications and requirements in accordance with items listed below:		No	1	
39	Supply and Install Remote Slave panels installed in Security Control offices		No	4	
40	Supply and Install Additional Proprietary Comms Network cards for above panels		No	4	
41	Supply and Install Additional Internet Protocol (RJ45) communication cards for above panels		No	4	
42	Programming of fire panels to include all devices, zoning, loops and fire condition sequencing		Sum	1	
Carried Forward					

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
43	Supply and Install 8/8 I/O panel for intergrating fire alarm into HVAC, door release, extraction and lifts		No	10		
44	Program and commission fire system to have zoned and double knock alarm system that is linked to HVAC, extraction system, door release and lift system as well as alarms		Sum	1		
45	Supply GMS fire brigade signalling system, set up and licence for 12 months		Sum	1		
46	Install Fire Brigade Signalling System		No	1		
	Field Fire Detection Equipment					
47	Supply and Install Addressable optical detector complete with base on ceiling		No	233		
48	Supply and Install Addressable optical detector and base in the ceiling void complete with ceiling mounted LED alarm indicator		No	50		
49	Supply and Install Addressable heat detector complete with base on ceiling		No	11		
50	Supply and Install Addressable surface mounted Manual Call Point with resettable element (red)		No	25		
51	Supply and Install Addressable sounder with visual indicator complete with base on ceiling (white/red)		No	29		
52	Supply and Install Addressable line isolator		No	15		
53	Supply and Install Addressable line I/O relay complete in junction box		No	18		
54	Connect I/O to HVAC, extraction system, door release and lift system. Inclusive of all panels, wiring and terminals		Sum	1		
55	Supply and Install a Door hold-open surface mount magnet complete with stainless steel wall mount universable adjustable brackets and emergency release button and door anchor plate (400 N).		No	18		
56	Supply and Install a 24V AC/DC 250 mA power supply unit in the ceiling void, connected to mains supply and door magnet.		No	6		
		Carried Forward				

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
Wireways for the Fire Detection System						
57	Supply and Install 25mm PVC Conduit.		No	6500		
58	Supply and Install 25mm PVC 60mm round, 1-, 2-, 3- or 4-way entry.		No	1900		
Fire Detection Cabling						
59	Supply and Install 1.5 mm ² 2 core fire resistant (red) cable (PH 30).		m	6000		
60	Supply and Install Networking cable (PH 30) from Master Control Fire Panel to sub controllers and remote display panels.		m	500		
Electrical Connections						
61	Electrical Connections to all Fire Detection Equipment as per SABS 0142 Code of Practice for Wiring of Premises.		Sum	1		
Commissioning and testing						
62	Allow for the Commissioning, Testing and issuing of certificates for the entire Fire Detection Installation.		Sum	1		
63	Provisional Sum for the Testing of hot spots by Infrared Thermal Imaging Camera on the Fire Detection Installation by Specialist.		Item			5 000.00
64	Profit and Attendance on above item.		%	5 000.00		
65	Provide a Certificate of Compliance in accordance with the latest SANS 10412-1 Wiring of premises Part 1 for the Fire Detection Installation.		Sum	1		
Guarantee and Warranty						
66	Allow for Guarantee and warranties for the complete Fire Detection Installation, including all fittings, materials and workmanship for a period of 12 months after the date of works completion and handover.		Sum	1		
Maintenance & Service Contract						
67	Maintenance & Servicing of the complete Fire Detection Installation during the 12 months defects liability period.		Sum	1		
Covid-19 Regulations						
68	Allow for an amount to provide staff the necessary masks, sanitizer and other PPE to comply with the latest Government COVID-19 Regulations and Directions.		Sum	1		
Carried Forward						

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
<u>Carbon Dioxide (CO2) Detection System Installed by Specialist Contractor as per the Specification</u>						
<u>Note: Installer to be registered with FDIA</u>						
<u>Each employee to be registered with SAQCC</u>						
As-built information and Operating and Maintenance Manuals						
69	Obtaining of all available information, compiling and finalizing of three (3) sets of Hard Copies and five (5) copies of "As-built" information / drawings, Operating and Maintenance manuals as specified, and handing over to the Engineer.		Sum	1		
Training of Maintenance Staff						
70	Provide staff training on the CO2 Detection Equipment.		Sum	1		
71	Development of a syllabus for training of maintenance staff.		Sum	1		
72	Presenting a training course for Maintenance Staff.		No	2		
CO2 Detection Equipment						
73	Supply and Install a Canline 32+ Controller - (24VDC) .		No	3		
74	Supply and Install a KSEC504 Gas Detector (CO 0-250PPM) .		No	15		
75	Supply and Install a Canline power supply 5Amp.		No	3		
76	Supply a Wall Mounted 400mm (w) x 300mm (h) x 200mm (d) Metal Box with glass panel door and orange in colour.		No	3		
Wireways for the CO2 Detection System						
77	Supply and Install 25mm PVC Conduit		No	900		
CO2 Detection Cabling						
78	Supply and Install 1mm ² Screened Mylar 4 core Cable		m	900		
Electrical Connections						
79	Electrical Connections to all CO2 Detection Equipment as per SABS 0142 Code of Practice for Wiring of Premises.		Sum	1		
Commissioning and testing						
80	Allow for the Commissioning, Testing and issuing of certificates for the entire CO2 Detection Installation.		Sum	1		
Carried Forward						

		Brought Forward				
Item	Description	Unit	Qty	Rate	Amount	
81	Provisional Sum for the Testing of hot spots by Infrared Thermal Imaging Camera on the CO2 Detection Installation by Specialist.	Item				5 000.00
82	Profit and Attendance on above item.	%	5 000.00			
83	Provide a Certificate of Compliance in accordance with the latest SANS 10412-1 Wiring of premises Part 1 for the CO2 Detection Installation.	Sum	1			
Guarantee and Warranty						
84	Allow for Guarantee and warranties for the complete Co2 Detection Installation, including all fittings, materials and workmanship for a period of 12 months after the date of works completion and handover.	Sum	1			
Maintenance & Service Contract						
85	Maintenance & Servicing of the complete Co2 Detection Installation during the 12 months defects liability period.	Sum	1			
Covid-19 Regulations						
86	Allow for an amount to provide staff the necessary masks, sanitizer and other PPE to comply with the latest Government COVID-19 Regulations and Directions.	Sum	1			
Carried Forward to collection page						

Item	Description	Unit	Qty	Rate	Amount
	<p>SECTION BILL NO.13 INTERCOM AND PUBLIC ADDRESS (WORK GROUP NO.160)</p> <p>Tenderers are referred to the project specification for full descriptions of materials, etc. to be used. All work shall be done strictly in accordance with the specification and manufactures instructions and to be left in perfect working order after completion</p> <p>Tenderers are to refer to the Department of Public Works Specifications : PW371-B Edition 2.1 July 2014 and PW371-A Edition 2.0 July 2013 for further description and amplification of work in this section.</p> <p><u>Intercom and Public Address System Installed by Specialist Contractor as specified in PIJ 04</u></p> <p>Sub-contact Agreement and Preliminaries <u>Allow to comply with the specifications and contract requirements providing the following:</u></p>				
1	Definitions and Interpretation	Item			
2	Subcontractors Site Representative	Item			
3	Indemnities	Item			
4	Works and N/S Works insurances	Item			
5	Liability insurances	Item			
6	Security	Item			
7	Preparation for and execution of the works	Item			
8	Setting out of the works	Item			
9	Subcontractor's Plant and services	Item			
10	Management of the works	Item			
11	Plant, Equipment, Sheds and Offices	Item			
12	Telecommunication facilities	Item			
	Carried Forward				

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
13	Responsibility for Prime Cost amounts		Item			
14	General Attendance		Item			
15	Special Attendance		Item			
16	Works cleaning and clearing		Item			
17	Overhand work		Item			
	Personal Protective Equipment					
	<u>Provide, supply and maintain for each worker the following SANS approved personal protective equipment & clothing as per the site specific risk assessment:</u>					
18	Hard Hat (High Density polyethylene with 6 point lining)		Item			
19	Overall / Work suit (100% Cotton)		Item			
20	High Visibility reflecting vest and / or bibs		Item			
21	Safety boot / shoes (Steel toe caps)		Item			
22	Safety Gumboot (Steel toe caps)		Item			
23	Ear Plugs and Muffs		Item			
24	Dust Musks (at least FF2 type)		Item			
25	Respirators		Item			
26	Safety goggles		Item			
27	Temporary handrails, toe banks etc other than for access scaffoldings		Item			
28	Personal fall arrest and rescue equipment with and including life lines and associated equipments		Item			
29	Allow for provision of telecommunication facilities for the appointed construction Health and Safety Officer		Item			
		Carried Forward				

Item	Description	Brought Forward	Unit	Rate	Amount
Medical Examinations					
30	Allow for pre employment Medicals		Item		
31	Allow for baseline psychological examination		Item		
32	Allow for exit Medicals		Item		
Health and Safety Education					
33	Allow for all compulsory health and safety awareness programmes (e.g Inductions, Toolbox talk, safety Promotions, H&S training etc)		Item		
As-built information and Operating and Maintenance Manuals					
34	Obtaining of all available information, compiling and finalizing of three (3) sets of Hard Copies and five (5) copies of "As-built" information / drawings, Operating and Maintenance manuals as specified, and handing over to the Engineer.		Sum	1	
Training of Maintenance Staff					
35	Provide staff training on the Intercom and Public Address System.		Sum	1	
36	Development of a syllabus for training of maintenance staff.		Sum	1	
37	Presentating a training course for Maintenance Staff.		No	2	
Headend Intercom and Public Address Equipment					
38	Supply and Install a Primary Intercom Main Server with VoIP Software & System DB.		No	1	
39	Supply and Install a Voice Annunciator Module to Play Pre-Recorded Messages.		No	1	
40	Supply and Install a Report Module.		No	1	
41	Supply and Install a Managed PoE + 24 Port 1GB Switch.		No	5	
42	Supply and Install a desktop PC with Intel Core i7 2600 3.4Ghz 8GB 1333Mhz DDR3 RAM, 1 TB Serial HD installed with Windows 10 Professional, Running Graphical UI and Operator Interface.		No	1	
43	Supply and Install a 23" LCD Flat Screen.		No	1	
Carried Forward					

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
44	Supply and Install a Wired Keyboard.		No	1		
45	Supply and Install a Wired Mouse.		No	1		
46	Supply and Install an IP-based Telescopic Microphone Console with Volume controls.		No	1		
47	Supply and Install a VGA Cable (2m).		No	1		
48	Supply and Install a Moulded Network Cable (10m).		No	10		
Field Intercom and Public Address Equipment						
49	Supply and Install SIP Intercom Core PCB with PoE.		No	15		
50	Supply and Install Intercom Face Plate with Pizo Button and Speaker.		No	15		
51	Supply and Install PA system interface with PoE for connectivity of third-party amplifier.		No	80		
52	Supply and Install PA Amplifier.		No	80		
53	Supply and Install PA Speaker (Flush Ceiling Mount).		No	65		
54	Supply and Install PA Outdoor Speaker.		No	15		
55	Allow to Configure the Intercom and PA System.		Sum	1		
Wireways for the Intercom and PA System						
56	Supply and Install 25mm Galvanized Conduit.		No	3050		
57	Supply and Install 25mm Galvanized 60mm round, 1-, 2-, 3- or 4-way entry.		No	765		
58	Supply and Install 60mm Diameter Round Galvanized covers.		No	765		
Intercom and PA Cabling						
59	Supply and Install Cat6 Data cable.		m	2800		
60	Supply and Install 4 core multimode fibre cable.		m	250		
61	Supply and Install SFP fibre converter.		m	8		
Carried Forward						

Item	Description	Brought Forward	Unit	Qty	Rate	Amount	
62	Supply and Install Splicing and Pigtails.		No	16			
	Electrical Connections						
63	Electrical Connections to all Intercom and PA Equipment as per SABS 0142 Code of Practice for Wiring of Premises.		Sum	1			
	Commissioning and testing						
64	Allow for the Commissioning, Testing and issuing of certificates for the entire Intercom and PA System Installation.		Sum	1			
65	Supply of tool and spares as per FH11 including lockable steel cabinet.		No	1			
66	Provisional Sum for the Testing of hot spots by Infrared Thermal Imaging Camera on the Fire Detection Installation by Specialist.		Item			5 000.00	
67	Profit and Attendance on above item.		%	5 000.00			
68	Provide a Certificate of Compliance in accordance with the latest SANS 10412-1 Wiring of premises Part 1 for the Intercom and Public Address System Installation.		Sum	1			
	Guarantee and Warranty						
69	Allow for Guarantee and warranties for the complete Intercom & Public Address Installation, including all fittings, materials and workmanship for a period of 12 months after the date of works completion and handover.		Sum	1			
	Maintenance & Service Contract						
70	Maintenance & Servicing of the complete Intercom & Public Address Installation during the 12 months defects liability period.		Sum	1			
	Covid-19 Regulations						
71	Allow for an amount to provide staff the necessary masks, sanitizer and other PPE to comply with the latest Government COVID-19 Regulations and Directions.		Sum	1			
	Carried Forward to collection page						

Item	Description	Unit	Qty	Rate	Amount
<p>SECTION BILL NO.14 SECURITY EQUIPMENT INSTALLATION (WORK GROUP NO.160)</p>					
<p>Tenderers are referred to the project specification for full descriptions of materials, etc. to be used. All work shall be done strictly in accordance with the specification and manufactures instructions and to be left in perfect working order after completion</p>					
<p>Tenderers are to refer to the Department of Public Works Specifications : PW371-B Edition 2.1 July 2014 and PW371-A Edition 2.0 July 2013 for further description and amplification of work in this section.</p>					
<p><u>Security Equipment Installed by Specialist Contractor as per the Specification</u></p>					
<p><u>Sub-contact Agreement and Preliminaries</u> <u>Allow to comply with the specifications and contract requirements providing the following:</u></p>					
1	Definitions and Interpretation	Item			
2	Subcontractors Site Representative	Item			
3	Indemnities	Item			
4	Works and N/S Works insurances	Item			
5	Liability insurances	Item			
6	Security	Item			
7	Preparation for and execution of the works	Item			
8	Setting out of the works	Item			
9	Subcontractor's Plant and services	Item			
10	Management of the works	Item			
11	Plant, Equipment, Sheds and Offices	Item			
12	Telecommunication facilities	Item			
Carried Forward					

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
13	Responsibility for Prime Cost amounts		Item			
14	General Attendance		Item			
15	Special Attendance		Item			
16	Works cleaning and clearing		Item			
17	Overhand work		Item			
	Personal Protective Equipment					
	<u>Provide, supply and maintain for each worker the following SANS approved personal protective equipment & clothing as per the site specific risk assessment:</u>					
18	Hard Hat (High Density polyethylene with 6 point lining)		Item			
19	Overall / Work suit (100% Cotton)		Item			
20	High Visibility reflecting vest and / or bibs		Item			
21	Safety boot / shoes (Steel toe caps)		Item			
22	Safety Gumboot (Steel toe caps)		Item			
23	Ear Plugs and Muffs		Item			
24	Dust Musks (at least FF2 type)		Item			
25	Respirators		Item			
26	Safety goggles		Item			
27	Temporary handrails, toe banks etc other than for access scaffoldings		Item			
28	Personal fall arrest and rescue equipment with and including life lines and associated equipments		Item			
29	Allow for provision of telecommunication facilities for the appointed construction Health and Safety Officer		Item			
		Carried Forward				

Item	Description	Brought Forward	Unit	Rate	Amount
Medical Examinations					
30	Allow for pre employment Medicals		Item		
31	Allow for baseline psychological examination		Item		
32	Allow for exit Medicals		Item		
Health and Safety Education					
33	Allow for all compulsory health and safety awareness programmes (e.g Inductions, Toolbox talk, safety Promotions, H&S training etc)		Item		
As-built information and Operating and Maintenance Manuals					
34	Obtaining of all available information, compiling and finalizing of three (3) sets of Hard Copies and five (5) copies of "As-built" information / drawings, Operating and Maintenance manuals as specified, and handing over to the Engineer.		Sum	1	
Training of Security Staff					
35	Provide staff training on the Security Equipment.		Sum	1	
36	Development of a syllabus for training of Security staff.		Sum	1	
37	Presentating a training course for Security Staff.		No	2	
Turnstiles and bypass doors					
38	Supply and install a walk through turnstyle with lock/ free wheel connected through to security control room and fire panel.		No	2	
39	Supply and connect Mag lock (2000N) to bypass door and connected through to security control room and fire panel.		No	2	
X-Ray Machine					
40	Supply and install a Dton DT5030 X-ray screening machine with a tunnel size of 503mm wide x 303mm high inclusive of all associated monitoring equipment and alarms etc. Thickness of steel plate to be penetrated must be no less than 32mm and wire resolution of AWG40 (or Equally approved by engineer).		No	1	
41	Stainless steel infeed and outfeed 500mm (w) x 1000mm (l) roller tables to match X-Ray machine conveyor height.		No	2	
42	X-Ray / Aviation compliant divestment trays (large).		No	4	
Carried Forward					

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
	Walk through metal detector					
43	Supply and install a Dton DT-5B unit with 18 independent detection zones. Gate post LED illumination to indicate area that triggered the alarm. 255 adjustable sensitivity levels. (or Equally approved by engineer).		No	2		
	Electrical Connections					
44	Electrical Connections to all Security Equipment as per the SANS 10142-1 Code of Practice for the Wiring of Premises.		Sum	1		
	Commissioning and testing					
45	Allow for the Commissioning and Testing of the entire Security Equipment Installation.		Sum	1		
46	Supply of tool and spares as per FH11 including lockable steel cabinet.		No	1		
47	Provisional Sum for the Testing of hot spots by Infrared Thermal Imaging Camera on Security Equipment Installation by Specialist.		Item			5 000.00
48	Profit and Attendance on above item.		%	5 000.00		
49	Provide a Certificate of Compliance in accordance with the latest SANS 10412-1 Wiring of premises Part 1 for the Security System Installation.		Sum	1		
	Guarantee and Warranty					
50	Allow for Guarantee and warranties for the complete Security Equipment Installation, including all fittings, materials and workmanship for a period of 12 months after the date of works completion and handover.		Sum	1		
	Maintenance & Service Contract					
51	Maintenance & Servicing of the complete Security Equipment Installation during the 12 months defects liability period.		Sum	1		
	Covid-19 Regulations					
52	Allow for an amount to provide staff the necessary masks, sanitizer and other PPE to comply with the latest Government COVID-19 Regulations and Directions.		Sum	1		
	Carried Forward to collection page					

Item	Description	Unit	Qty	Rate	Amount
	<p>SECTION BILL NO.15 SOLAR PV SYSTEM INSTALLATION (WORK GROUP NO.160)</p> <p>Tenderers are referred to the project specification for full descriptions of materials, etc. to be used. All work shall be done strictly in accordance with the specification and manufactures instructions and to be left in perfect working order after completion</p> <p>Tenderers are to refer to the Department of Public Works Specifications : PW371-B Edition 2.1 July 2014 and PW371-A Edition 2.0 July 2013 for further description and amplification of work in this section.</p> <p><u>Solar Photovoltaic Installation by a Specialist Contractor as per the Specification</u></p> <p>Sub-contact Agreement and Preliminaries <u>Allow to comply with the specifications and contract requirements providing the following:</u></p>				
1	Definitions and Interpretation	Item			
2	Subcontractors Site Representative	Item			
3	Indemnities	Item			
4	Works and N/S Works insurances	Item			
5	Liability insurances	Item			
6	Security	Item			
7	Preparation for and execution of the works	Item			
8	Setting out of the works	Item			
9	Subcontractor's Plant and services	Item			
10	Management of the works	Item			
11	Plant, Equipment, Sheds and Offices	Item			
12	Telecommunication facilities	Item			
	Carried Forward				

Brought Forward

Item	Description	Unit	Qty	Rate	Amount
13	Responsibility for Prime Cost amounts	Item			
14	General Attendance	Item			
15	Special Attendance	Item			
16	Works cleaning and clearing	Item			
17	Overhand work	Item			
	Personal Protective Equipment				
	<u>Provide, supply and maintain for each worker the following SANS approved personal protective equipment & clothing as per the site specific risk assessment:</u>				
18	Hard Hat (High Density polyethylene with 6 point lining)	Item			
19	Overall / Work suit (100% Cotton)	Item			
20	High Visibility reflecting vest and / or bibs	Item			
21	Safety boot / shoes (Steel toe caps)	Item			
22	Safety Gumboot (Steel toe caps)	Item			
23	Ear Plugs and Muffs	Item			
24	Dust Musks (at least FF2 type)	Item			
25	Respirators	Item			
26	Safety goggles	Item			
27	Temporary handrails, toe banks etc other than for access scaffoldings	Item			
28	Personal fall arrest and rescue equipment with and including life lines and associated equipments	Item			
29	Allow for provision of telecommunication facilities for the appointed construction Health and Safety Officer	Item			
	Medical Examinations				
30	Allow for pre employment Medicals	Item			
31	Allow for baseline psychological examination	Item			
	Carried Forward				

Item	Description	Brought Forward	Unit	Rate	Amount
32	Allow for exit Medicals		Item		
	Health and Safety Education				
33	Allow for all compulsory health and safety awareness programmes (e.g Inductions, Toolbox talk, safety Promotions, H&S training etc)		Item		
	As-built information and Operating and Maintenance Manuals				
34	Obtaining of all available information, compiling and finalizing of three (3) sets of Hard Copies and five (5) copies of "As-built" information / drawings, Operating and Maintenance manuals as specified, and handing over to the Engineer.		Sum	1	
	Training of Maintenance Staff				
35	Provide staff training on the Solar Photovoltaic Installation.		Sum	1	
36	Development of a syllabus for training of maintenance staff.		Sum	1	
37	Presentating a training course for Maintenance Staff.		No	1	
	Solar PV Panel Installation				
38	Supply and Install 450w Tier 1 Mono-crystalline CS3W 450MS solar panels, equal or similar as approved by the engineer.		No	238	
39	Supply and Install a Valsa certified Mounting structure for the above solar panels, equal or similar as approved by the engineer.		No.	1	
	Heavy duty galvanized walkways				
40	Supply and Install heavy duty galvanized walkways manufactured from Mantis Grating complete with a folding down handrail.		No.	150	
	Solar Inverter Installation				
41	Supply and install a 3-Phase 27,6kW Solar Grid-tied Solaredge TP Inverter, equal or similar as approved by the engineer.		No.	4	
42	Supply and Install a 3-Phase 400V Solaredge KWhr Meter, equal or similar as approved by the engineer.		No.	1	
43	Supply and Install Solaredge 250/1A CT's and ACT-0750-250 fuse protection, equal or similar as approved by the engineer.		No.	3	
44	Supply and Install an Anti-islanding CM-IFD-M33M relay with Modbus RTU, equal or similar as approved by the engineer.		No.	1	
	Carried Forward				

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
45	Supply and Install a 950W P950 Optimizer for the above specified Inverter, equal or similar as approved by the engineer.		No.	119		
Circuit Breakers (SANS Approved)						
46	Supply and Install a 63A TP 20kA circuit breakers		No.	4		
47	Supply and Install a 500A TP 40kA (Input) circuit breaker complete with 40kA 4P surge protection in an IP54 3CR12 Metal enclosure.		No.	1		
48	Supply and Install a 500A 4P 40kA (Output) circuit breaker complete with Earth Leakage Unit and 40kA 4P surge protection in an IP54 3CR12 Metal enclosure.		No.	1		
Isolators (SANS Approved)						
49	Supply and Install a 63A TP Isolator complete with Earth Leakage Unit and 20kA 4P surge protection.		No.	4		
50	Supply and Install a 63A DP Isolator complete with 20kA DP surge protection.		No.	18		
51	Supply and Install a 63A SP with Earth Leakage Unit and 40kA DP surge protection.		No.	18		
52	Supply and Install a 1000V 63A DP Isolator (Solar Inverters) complete with 40kA surge protection.		No.	4		
53	Supply and Install a 250V 50A DP Isolator (Charge Controllers) complete with 40kA surge protection.		No.	6		
Inverter Battery Installation						
54	Supply and Install 15kVA Quattro 48/15000/200-100/100 230V VE Bus Inverter chargers, equal or similar as approved by the engineer.		No.	18		
55	Supply and Install Cerbo GX Control Device, equal or similar as approved by the engineer.		No.	1		
56	Supply and Install 250V 100A Smart Solar MPPT 250/100-Tr VE Can, equal or similar as approved by the engineer.		No.	6		
57	Supply and Install 48V, 400kWhr Freedom Lite Commercial 400/280 Lithium Iron Phosphate batteries, equal or similar as approved by the engineer.		No.	5		
Carried Forward						

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
58	Supply and Install (+&-) DF Battery Fuses, equal or similar as approved by the battery manufacturers requirements.		No.	10		
	By-Pass System					
59	Supply and Install a 500A TP By-pass system as USS-TP-500A -BP complete with an IP54 3CR12 Metal enclosure, equal or similar as approved by the engineer.		No.	1		
	AC Combiner System					
60	Supply and Install a 200A TP AC Combiner system as USS-200A-Com-SP in an IP54 3CR12 Metal enclosure complete with 40kA TP surge protection, equal or similar as approved by the engineer.		No.	1		
	Busbar System					
61	Supply and Install a 3200A DP DC Busbar system as USS-BB-3200A-DC (2 x 100mm x 10mm Cu Busbar) in an IP54 3CR12 Metal enclosure, equal or similar as approved by the engineer.		No.	1		
	Cable Installation					
62	Supply and Install 25mm ² 4 core Cu cable PVC/SWA ECC/PVC cables from Solar Inverters to system.		m	250		
63	Supply and Install 2 x 120mm ² 4 core Cu cable PVC/SWA ECC/PVC cables from Main DB to system.		m	40		
64	Supply and Install 2 x 120mm ² 4 core Cu cable PVC/SWA ECC/PVC cables from system to Load DB.		m	40		
65	Supply and Install 0,75mm ² 2 core twisted LAPP Modbus cable.		m	350		
66	Supply and Install 6mm ² Solar DC 1 core Cu (UV & PV Rated) cable.		m	1000		
67	Supply and Install 35mm ² 1 core Cu SANS 1507 DC cable from Charge Controllers to busbars.		m	40		
68	Supply and Install 95mm ² 1 core Cu SANS 1507 DC cable from Inverter Chargers to busbars.		m	80		
	Cable Terminations					
69	Supply and Install 25mm ² 4 core Cu cable PVC/SWA ECC/PVC cable terminations.		No.	4		
	Carried Forward					

Brought Forward

Item	Description	Unit	Qty	Rate	Amount
70	Supply and Install 2 x 120mm ² 4 core Cu cable PVC/SWA ECC/ PVC cable terminations.	No.	4		
71	Supply and Install 2 x 120mm ² 4 core Cu cable PVC/SWA ECC/ PVC cable terminations.	No.	4		
72	Supply and Install 0,75mm ² 2 core twisted LAPP Modbus cable terminations.	No.	4		
73	Supply and Install 6mm ² Solar DC 1 core Cu (UV & PV Rated) cable terminations (T4 Connectors).	No.	200		
74	Supply and Install 35mm ² 1 core Cu SANS 1507 DC cable terminations	No.	72		
75	Supply and Install 95mm ² 1 core Cu SANS 1507 DC cable terminations.	No.	24		
	Wireways				
76	Supply and Install 200mm Heavy Duty Galvanized Cable trays	m	350		
77	Supply and Install Heavy Duty galvanized Mounting brackets every 1m on IBR roofing.	No.	350		
	Remote Monitoring Installation				
78	Supply and install a 32inch Colour LCD Monitor	No.	1		
79	Supply and Install a Desktop PC Intel Celetron, 2GB RAM, 250GB hard drive .	No.	1		
80	Supply and Install Power Usage SPEC-ES-SE-12 software with energy server as specified, equal or similar as approved by the engineer.	No.	1		
81	Supply and Install Load Management system SPEC-LM-12 as specified, equal or similar as approved by the engineer.	No.	1		
82	Supply and Install a SPEC-LMR-TRR-230 Load Switching Relay Units for Load Control system as specified, equal or similar as approved by the engineer.	No.	32		
83	Supply and Install a PCI Transducer for the Load Management System (230V Supply, 5A input, 4-20mA Output), equal or similar as approved by the engineer.	No.	30		
	Carried Forward				

Brought Forward

Item	Description	Unit	Qty	Rate	Amount
84	Supply and Install PCI 250/5A CT's for Load Management System, equal or similar as approved by the engineer.	No.	30		
85	Supply and install a SPEC-3255 kWhr Meter for Power Usage System, equal or similar approved by the engineer.	No.	10		
86	Supply and Install Solaredge 250/1A CT's and ACT-0750-250 fuse protection, equal or similar as approved by the engineer.	No.	30		
Surge Arrestors					
87	Supply and Install Dengaurd 100ka with encapsulated spark gap 3 phase plusneutral surge arrestors, equal or similar approved by the engineer.	No.	2		
Electrical Connections					
88	Electrical Connections to all Solar PV System as per SANS 10142-1 Code of Practice for the Wiring of Premises.	Sum	1		
Commissioning and testing					
89	Allow for the Commissioning and Testing of the entire Solar PV System Installation.	Sum	1		
90	Provisional Sum for the Testing of hot spots by Infrared Thermal Imaging Camera on Solar PV Installation by Specialist.	Item			5 000.00
91	Profit and Attendance on above item.	%	5 000.00		
92	Provide a Certificate of Compliance in accordance with the latest SANS 10412-1 Wiring of premises Part 1 for the Solar PV System Installation.	Sum	1		
Guarantee and Warranty					
93	Allow for Guarantee and warranties for the complete Solar PV System Installation, including all fittings, materials and workmanship for a period of 12 months after the date of works completion and handover.	Sum	1		
Maintenance & Service Contract					
94	Maintenance & Servicing of the complete Solar PV System Installation during the 12 months defects liability period.	Sum	1		
Covid-19 Regulations					
95	Allow for an amount to provide staff the necessary masks, sanitizer and other PPE to comply with the latest Government COVID-19 Regulations and Directions.	Sum	1		
Carried Forward to collection page					

SECTION						
BILL NO.16						
PROVISIONAL SUMS						
Item	Description	Unit	Qty	Rate	Amount	
1	Provision for the Municipal Connection Fees for a 500kVA Supply.	Item			1 344 000.00	
2	Attendance on above item.	%	1 344 000.00			
3	Profit on above item.	%	1 344 000.00			
4	Provision for Liaising with the Municipality for connections.	Item			67 200.00	
5	Attendance on above item.	%	67 200.00			
6	Profit on above item.	%	67 200.00			
7	Provision for the Electrical Deposit with the Municipality.	Item			504 000.00	
8	Attendance on above item.	%	504 000.00			
9	Profit on above item.	%	504 000.00			
10	Provision for Control Room Video Wall and Equipment.	Item			336 000.00	
11	Attendance on above item.	%	336 000.00			
12	Profit on above item.	%	336 000.00			
Carried Forward						

Item	Description	Brought Forward	Unit	Qty	Rate	Amount
13	Provision for Decorative lighting as required by Architect.		Item			504 000.00
14	Attendance on above item.		%	504 000.00		
15	Profit on above item.		%	504 000.00		
16	Provisional Sum amount for Additional tests required by the Electrical Engineer.		Item			67 200.00
17	Attendance on above item.		%	67 200.00		
18	Profit on above item.		%	67 200.00		
<u>SELECTED SUBCONTRACTORS:</u>						
19	Provision for Data/ IT/ Telephone VoIP System Equipment by Department of Justice Preferred Supplier whom the Contractor shall over see and make payments to.		Item			2 688 000.00
20	Attendance on above item.		%	2 688 000.00		
21	Profit on above item.		%	2 688 000.00		
22	Provision for a Court Room Voice Recording System by Department of Justice Preferred Supplier whom the Contractor shall over see and make payments to.		Item			3 360 000.00
23	Attendance on above item.		%	3 360 000.00		
24	Profit on above item.		%	3 360 000.00		
Carried Forward to collection page						

SECTION SUMMARY - ELECTRICAL WORKS			Tendered Amount R
Item	Description	Page No	
Bill No.1	General Electrical Installation	4	
Bill No.2	Cable Reticulation Installation	10	
Bill No.3	Distribution Board Installation	13	
Bill No.4	Lighting Installation	16	
Bill No.5	Small Power Installation	19	
Bill No.6	Busbar Installation	23	
Bill No.7	Standby Generator Installation	29	
Bill No.8	UPS Installation	33	
Bill No.9	Lightning Protection Installation	39	
Bill No.10	Access Control Installation	44	
Bill No.11	CCTV Installation	51	
Bill No.12	Fire and CO2 Detection System Installation	58	
Bill No.13	Intercom and Public Address Installation	63	
Bill No.14	Security Equipment Installation	67	
Bill No.15	Solar PV System Installation	74	
Bill No.16	Provisional Sums	76	
Total Carried forward to Final Summary			