

Item No		Unit	Quantity	Rate	Amount
	<p><u>SECTION NO 01A</u></p> <p><u>BILL NO 1</u></p> <p><u>EARTHWORKS</u></p> <p><u>(CPAP WORK GROUP NO 104 UNLESS OTHERWISE STATED)</u></p> <p><u>PREAMBLES</u></p> <p>For Preambles see "Model Preambles for Trades"</p> <p>-----</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Nature of ground</u></p> <p>The nature of the ground is assumed to be gravel, therefore "earth", but possibly interspersed with "soft rock" or "hard rock"</p> <p><u>Working space</u></p> <p>No formwork or working space has been measured to the sides of concrete wall footings and no formwork or additional backfilling necessary due to over excavations will be measured to wall footings. Backfilling to such over excavations areas must be compacted to the same degree and in the same manner as the backfilling to the remainder of such excavation</p> <p><u>Excavation for working space in rock</u></p> <p>Notwithstanding clause 11 page 8 of the Standard System of Measuring Building Work, excavation for working space in rock will be measured in cubic metres to the extent executed and given as "extra over" bulk excavation or trench and hole excavation as the case may be</p> <p><u>Carting away of excavated material</u></p> <p>Descriptions of carting away of excavated material shall be deemed to include loading excavated material onto trucks directly from the excavations or, alternatively, from stock piles situated on the building site</p>				
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Filling

Notwithstanding the reference to prescribed multiple handling in clause 1 page 6 of the Standard System of Measuring Building Work, prices for filling and backfilling shall include for all selection and any multiple handling of material

Testing

Prices for filling are to include for all necessary density tests in accordance with SABS 1200D

EXCAVATION, FILLING, ETC

EXCAVATIONS, ETC

Excavation in earth not exceeding 2m deep

A	Trenches	m ³	223
B	Holes	m ³	407

Extra over trench and hole excavations in earth for excavation in

C	Soft rock	m ³	28
D	Hard rock	m ³	14

Extra over all excavations for carting away

E	Surplus material from excavations and/or stock piles on site to a dumping site to be located by the contractor	m ³	579
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Risk of collapse of excavations

F	Sides of trench and hole excavations not exceeding 1,5m deep	m ²	615
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Keeping excavations free of water

G	Keeping excavations free of all water other than subterranean water	Item	
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Formwork to soffits of slabs, beams, etc shall be deemed to be propped up exceeding 1,5m and not exceeding 3,5m high unless otherwise described

Formwork to sides of bases, pile caps, ground beams, etc will only be measured where it is prescribed by the engineer for design reasons. Formwork necessitated by irregularity or collapse of excavated faces will not be measured and the cost thereof shall be deemed to be included in the allowance for taking the risk of collapse of the sides of the excavations, provision for which is made in "Earthworks"

UNREINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES

15MPa/13mm concrete

A	Surface blinding under footings and bases	m ³	13	
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25MPa/19mm concrete

B	Strip footings	m ³	56	
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REINFORCED CONCRETE

15MPa/19mm concrete

C	Filling to cavities of hollow walls	m ³	16	
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REINFORCED CONCRETE CAST AGAINST EXCAVATED SURFACES

30MPa/19mm concrete

D	Bases	m ³	14	
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E	Surface beds cast in panels on waterproofing	m ³	353	
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F	Ramped surface beds cast in panels on waterproofing	m ³	29	
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REINFORCED CONCRETE CAST ON/IN FORMWORK

30MPa/19mm concrete

G	Slabs including beams and inverted beams	m ³	110	
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ROUGH FORMWORK (DEGREE OF ACCURACY II)

Rough formwork to sides

A	Beams	m ²	240
B	Beams above concrete	m ²	113
C	Isolated beams	m ²	234
D	Isolated beams above concrete	m ²	4
E	Rectangular columns in foundations	m ²	91
F	Rectangular columns	m ²	129
G	Edges, risers, ends and reveals not exceeding 300mm high or wide	m	534

Rough formwork to soffits

H	Beams	m ²	87
J	Isolated beams	m ²	68

MOVEMENT JOINTS ETC

Expansion joints with 10mm "Sondor Jointex" expanded polyethylene between vertical concrete and brick surfaces

K	Not exceeding 300mm high to edges of surface beds	m	227
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Expansion joints with 10mm "Sondor Jointex" closed cell expanded polyethelene between vertical concrete and brick surfaces

L	Not exceeding 300mm wide	m	227
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Expansion joints with 10mm "Sondor Jointex" closed cell expanded polyethelene between horizontal concrete and brick surfaces

M	Not exceeding 300mm wide	m	237
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Pointing

Descriptions of recessed pointing to fair face brickwork and face brickwork shall be deemed to include square recessed, hollow recessed, weathered pointing, etc

Samples

Samples of all masonry building units, shall consist of a minimum of 6 units

FOUNDATIONS

Brickwork of NFX bricks in class II mortar

A	One brick walls	m ²	173
B	340mm Hollow walls of two half brick skins and 110mm cavity filled with reinforced concrete (concrete measured elsewhere) including wire ties	m ²	147

SUPERSTRUCTURE

Brickwork of NFP bricks in class II mortar

C	Half brick walls	m ²	207
D	Half brick linings to concrete	m ²	86
E	Half brick walls in beamfilling	m ²	47
F	One brick walls	m ²	379
G	One brick walls in hollow columns	m ²	22
H	270 mm Hollow walls of two half brick skins and 50mm cavity including wire ties	m ²	1,087
J	390mm Hollow walls of one one brick skin and one halfbrick skin and 50mm cavity including wire ties	m ²	47

BRICKWORK SUNDRIES

K	Splayed mortar fillet one course high in 60mm cavity	m	131
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A	Closing 50mm cavity of hollow wall vertically with brickwork half brick wide	m	247	
B	Closing 50mm cavity of hollow wall horizontally with one course of brickwork	m	22	
	<u>2.5mm Galvanised brick reinforcement</u>			
C	75mm Wide reinforcement built in horizontally	m	8,540	
D	150mm Wide reinforcement built in horizontally	m	3,217	
	<u>Prestressed fabricated lintels including necessary temporary supports</u>			
E	110 x 75mm Lintels in lengths not exceeding 3m	m	166	
F	150 x 75mm Lintels in lengths not exceeding 3m	m	131	
	<u>Galvanised hoop iron cramps, ties, etc</u>			
G	30 x 1,6mm Wall tie 400mm girth once bent, shot pinned to concrete and other end built into brickwork	No	889	
H	"Ceramic" door frame anchor 270 mm long with one end fixed to wood and other end built into brickwork	No	138	
	<u>1.6mm Galvanised sheet metal cavity closer three times bent along entire length to form a drip groove and built into position</u>			
J	Closing 80mm cavity of hollow wall horizontally	m	251	
	<u>FACE BRICKWORK</u>			
	<u>"Corobrik Ruby Light Satin " FBS or similar approved clay face bricks in class II mortar flush pointed with hollow key horizontal and vertical joints</u>			
K	Extra over brickwork for face brickwork in horizontal stretcher bond in foundations (Provisional)	m ²	198	
L	Extra over brickwork for face brickwork in horizontal stretcher bond	m ²	738	
M	Extra over brickwork for face brickwork in horizontal stretcher bond in beamfilling	m ²	47	
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WATERPROOFING

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PROFILED METAL SHEETING AND ACCESSORIES

0.53mm "Saflok 700" profile corrugated zincalume AZ150 coated steel G550 (heavy industrial) roof sheeting or similar approved in single lengths with "Clean COLORBOND Winter Matt" finish to one side and "Shadow Grey" backing coat to the other side including accessories, fixed to steel purlins (purlins elsewhere):

A	Roof covering with pitch not exceeding 25 degrees	m ²	1,162
B	Head wall flashings 375mm girth, two times bent and notched on site to suit roof profile	m	17
C	Counter flashings 185mm girth, two times bent	m	17
D	Apex flashings 750mm girth three times bend	m	155
E	Barge flashing 300mm girth, three times bent	m	117

ROOF AND WALL INSULATION

4mm Thick "Alucushion" white coated single sided aluminium foil insulation (Code: 2906)

F	Insulation laid taut over purlins and fixed concurrent with the roof covering (purlins and roof covering elsewhere) including galvanised steel straining wires as recommended by the manufacturer	m ²	1,162
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ROOF COVERINGS

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Fixing

Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete

Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as "bolted", the bolts have been given elsewhere.

Fixing of floor planks to battens to be secret nailed and remove tongues every 1,5m to allow for expansion

EAVES, VERGES, ETC

Wrought softwood:

A 50 x 228 mm Fascias and barge boards

m 154

DOORS ETC

"Swartland" MDF Elegance hardwood doors in colour white or similar approved timber doors hung to timber frames (frames elsewhere measured)

B 40mm Door 930 x 1 900mm high as per drawings 1609/01/101/4 (Type 100-D02)

No 12

C 40mm Door 930 x 2 100mm high as per drawings 1609/01/101/4 (Type 100-D01, D03, D04)

No 7

D 40mm Door size 880 x 2 100mm high overall as per drawing 1609/01/101/4 (Type 100 ADW01, ADW02)

No 4

E 40mm Purpose made double door size 1 500 x 2 100mm high overall as per drawing 1609/01/101/4 (Type 100 DD01)

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	<u>Framed, ledged and braced batten hardwood door with tenon joints, door consist of 44 x 94mm wide top rail, stiles and braces, 44 x 144mm wide centre rail and 44 x 220mm bottom rail with the top, middle and stiles grooved and rebated to receive vertical 22 x 100mm wide tongued and grooved planking, countersunk and screwed to each ledge from the inside, doors hung to steel frames (frames elsewhere)</u>				
A	44mm Purpose made double door size 1 725 x 2 125mm high overall as per drawing 1604/04/101, Rev 3 (Type 400 DD01)	No	1		
	<u>Solid-core flush panel door with 3mm commercial veneer suitable for painting including 12mm hardwood edge strips all round, door hung to steel frames (frames elsewhere measured)</u>				
B	40mm Door 812 x 2 032mm high overall as per drawing 2109-301, Rev T1 (Type D)	No	4		
	<u>Purpose made solid meranti timber fire doors</u>				
C	"Class A" fire door and frame for opening 930 x 2 100mm high as per drawings 1609/01/101/4 (100 - FD01)	No	1		
D	"Class B" fire door and frame for opening 1 500 x 2 100mm high as per drawings 1609/01/101/4 (100 - FDD01)	No	1		
E	"Class B" fire door and frame for opening 1 680 x 2 125mm high as per drawings 1609/01/101/4 (100 - FDD02)	No	1		
	<u>FRAMED FRAMES ETC</u>				
	<u>90 x 70mm "Swartland" wrought meranti door frames (SANS 613) or similar approved</u>				
F	90 x 70mm Rebated linings, plugged	m	50		
G	Purpose made frame without sill, for 930 x 2 100mm high door as per drawing 1609/01/101/4 (100-D01, D03, D04)	No	7		
H	Purpose made frame 1 500 x 2 100mm high overall as per drawings 1609/01/101/4 100-DD01	No	2		
J	Purpose made frame 1 725x 2 125mm high overall as per drawing 1609/04/101/3 (400 DD01)	No	1		
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SKIRTINGS

Wrought hardwood

A 22 x 98mm Standard skirting plugged

m

113

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CARPENTRY AND JOINERY

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Carcasses, shelves, doors and drawers, etc

Joinery fittings shall be formed of laminated softwood

Worktops, etc shall be 32mm thick

Carcasses, shelves, doors, etc shall be 22mm thick

Drawer backs and sides, etc shall be formed of 19mm laminated softwood and 6mm thick tapered hardboard bottom

Edge strips shall be but jointed at junctions with adjacent similar finish

Work surfaces, etc

Work surfaces shall be formed of 32mm laminated pine

Hinges, etc

Hinges shall be chromium plated self-closing concealed hinges

One pair for lower doors

One and a half pairs for full length doors

Bolts and Catches, etc

Single doors shall be provided with one "Solid Art 16A/A60 or similar approved" double roller catch

Double doors shall be provided with one 50mm "Solid Art 204 or similar approved" brass bolt and keep and one "Solid Art 161/A8or similar approved" gripper catch

Locks and Furniture

Doors shall be provided with "Solid Art 52/E8 or similar approved" cylinder cupboard locks

Drawer shall be provided with "Solid art 57/E8 or similar approved" cylinder drawer locks

Pull handles, etc

Pull handles, etc shall be 96mm "W & B code B 1746 or similar approved" chromium plated handles

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Drawer guides, etc

Drawers shall glide on white epoxy-coated drawer runners with nylon rollers

Wall bands, etc

Adjustable shelves shall be supported on "Osborne Slim Trim or similar approved" wall bands with locking snap-in clips

CUPBOARDS, WORKTOPS, SHELVES, ETC

The following cupboard fittings have been measured as complete units i.e. the components of the units have not been separately measured. The descriptions, therefore, of such units shall be deemed to include all components, assembling, housing, notching, glueing, blocking, planting on and screwing with countersunk screws, edge strips, decorative plastic finish, glass, ironmongery, metalwork, paint and varnish finishes, etc

Laminated pine shelving systems

A	Shelf U-shaped on plan unit 7 400 x 600 x 2 100mm high overall with 22mm thick laminated pine top and bottom, sides, divisions, plinth, fixed shelves on and including 500 x 300 x 30mm heavy duty epoxy coated stayed shelf brackets, etc. complete bolted to wall and three coats approved semi-gloss varnish to timber all as per Architect drawing (1609/01/702/6) and specifications (Store room)	No	1
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Melamine cupboards, worktop, etc

B	Cupboard unit 1100 x 600 x 2 650mm high with 16mm thick melamine bottom, plinth, sides, divisions, shelves, doors etc. complete including ironmongery, brackets all as per drawing 1609/01/707/6 (Male Cloakroom)	No	1
C	Cupboard unit 1100 x 600 x 2 650mm high with 16mm thick melamine bottom, plinth, sides, divisions, shelves, doors etc. complete including ironmongery, brackets all as per drawing 1609/01/708/6 (Female Cloakroom)	No	1
D	30mm Thick Rustenburg Granite vanity top 1 920 x 600 mm wide 50mm high splashback and 200mm downstand on mild steel brackets, bolted to wall all as per Architect drawing (1609/01/706/6) and specifications (Female Bathroom)	No	1

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A	30mm Thick Rustenburg Granite vanity top 2 800 x 600 mm wide 50mm high splashback and 200mm downstand on mild steel brackets, bolted to wall all as per Architect drawing (1609/01/706/6) and specifications (Male Bathroom)	No	1	
B	30mm Thick Rustenburg Granite vanity top 2 315 x 600 mm wide 50mm high splashback and 200mm downstand on mild steel brackets, bolted to wall all as per Architect drawing (1609/01/708/6) and specifications (Female Cloakroom)	No	1	
C	30mm Thick Rustenburg Granite vanity top 2 675 x 600 mm wide 50mm high splashback and 200mm downstand on mild steel brackets, bolted to wall all as per Architect drawing (1609/01/707/6) and specifications (Male Cloakroom)	No	1	
<u>Kitchen cupboards etc</u>				
D	Wall cupboard 1 505 x 300 x 840mm high with top, sides, bottom, division, shelf, back and one single and one double hinged doors all as per Architects drawing (1609/04/702/3) and specifications (Tea Kitchenette)	No	1	
E	Wall cupboard 1 690 x 300 x 840mm high with top, sides, bottom, division, shelf, back and one single and one double hinged doors all as per Architects drawing (1609/04/702/6) and specifications (Guard House Kitchenette)	No	1	
F	Wall cupboard 3 766 x 300 x 1 150mm high overall with top, sides, bottom, division, shelf, back and four double hinged doors all as per Architects drawing (1609/04/705/6) and specifications (Canteen Kitchenette)	No	1	
G	Wall cupboard 4 800 x 300 x 1 150mm high overall with top, sides, bottom, division, shelf, back and five double hinged doors and one single hinged door all as per Architects drawing (1609/04/704/6) and specifications (Kitchenette)	No	1	
H	Kitchen cupboard 1 505 x 600 x 900mm high overall with 30mm thick Rustenburg Granite worktop with 50mm high splashbacks to back and sided etc. including cutout for single bowl sink complete including ironmongery all as per Architects drawing (1609/04/702/3) and specifications (Tea Kitchen)	No	1	
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A	Kitchen cupboard 1 690 x 600 x 900mm high overall with 30mm thick Rustenburg Granite worktop with 50mm high splashbacks to back and sided etc. including cutout for single bowl sink complete including ironmongery all as per Architects drawing (1609/04/702/6) and specifications (Guard House Kitchenette)	No	1	
B	Kitchen cupboard 3 116 x 600 x 900mm high overall with 30mm thick Rustenburg Granite worktop with 50mm high splashbacks to back and sided etc. including cutout for double bowl sink complete including ironmongery all as per Architects drawing (1609/04/705/6) and specifications (Canteen Kitchenette)	No	1	
C	Kitchen cupboard 4 150 x 600 x 900mm high overall with 30mm thick Rustenburg Granite worktop with 50mm high splashbacks to back and sided etc. including cutout for double bowl sink complete including ironmongery all as per Architects drawing (1609/04/704/6) and specifications (Kitchenette)	No	1	
<u>Sundries</u>				
D	700mm Long coat hook racks formed of 75 x 19mm thick Meranti backing boards and 6 no satin chrome (DHC-SS-031B) coat hooks, plugged to walls	No	19	
<u>FIXED FURNITURE & FITTINGS</u>				
<u>The following joinery fittings have been given as complete units i.e. the individual components of the units have not been measured separately. Descriptions of such units shall, therefore, be deemed to include all components such as cupboard doors, shelves, drawers, ironmongery, assembling, housing, notching, glueing, blocking, planting-on and screwing with countersunk screws, edge strips, thermosetting plastic laminate, glass, all metalwork, paint or varnish finishes, etc Prices are to include for all necessary filler pieces against walls etc.</u>				
<u>These items are to be priced in conjunction with the drawings referred to in the descriptions, joinery specialists are to provide architect with shop drawings for approval before manufacturing of joinery can begin</u>				
E	Supply and install joinery complete for Docking Station room. The joinery for this room consists of one 6 720mm long and one 4 800mm long x 800mm wide formica worktops, including box legs and supports with cleats plugged to walls and double pigeon hole shelving 300mm wide and 400mm high, all as per Architect drawing 1609/01/703/6 and Specifications (Docking Station)		Item	
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A	Supply and install joinery complete for Reception room. The joinery for this room consists of two double hinged cupboards 925 x 600 x 750mm high and one 600 x 600 x 750mm high three drawer cupboards 600mm wide formica worktops, and one 1 900 x 300mm a 32mm thick counter top with support brackets, all as per Architect drawing 1609/01/701/6 and Specifications (Reception)		Item	
B	Supply and install joinery complete for Guard room. The joinery for this room consists of two 600 x 600 x 750mm high double drawer cupboards and 600mm wide formica worktops, all as per Architect drawing 1609/04/701/6 and Specifications (Guard)		Item	
<u>The following in wall benches as per drawing 1609/01/901/6</u>				
C	36 x 48mm Wrot hardwood slats screwed to steel brackets (brackets elsewhere) from bottom with 4 x 40mm raised nickle plated wood screw at maximum 833mm centres	m	114	
D	Welded 463mm x 402mm high overall galvanised steel angle bracket consisting of 40 x 40 x 5mm angle twice holed for M8 rawlbolts (bolts elsewhere measured) on one side and eight 5mm diameter holes on other side including 40 x 5mm flatbar bracing	No	42	
E	Welded 670mm x 402mm high overall galvanised steel angle corner bracket consisting of 40 x 40 x 5mm angle twice holed for M8 rawlbolts (bolts elsewhere measured) on one side and eight 5mm diameter holes on other side including 40 x 5mm flatbar bracing	No	2	
F	12 x 65mm Anchor bolt (M12)	No	95	
<u>(The end of the following in)</u>				
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	Carried to Abstract			
	<p>Bill No. 8 FURNITURE AND FITTINGS 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES</p>		R	

SUPPLY AND INSTALL THE FOLLOWING FURNITURE COMPLETE:

OFFICE WORKSTATIONS

A	DESK CONFIGURATION 2JE (WS1). Desk 1 800 x 1 100 LHS Core3 Pole legs and 1200T/Retrieval unit with conference end 900, DH pedestal and 2 no Drawer top retrieval cabinet with top 1 200 x 600 and Cable management. Refer to the architects furniture schedules FURN001.	No	4
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OFFICE CHAIRS

B	Executive holly high back desk chair. Refer to the architects furniture schedules FURN01S-0.	No	16
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C	Techno 800 high back desk chair. Refer to the architects furniture schedules FURN0001	No	4
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D	Techno 900 high back desk chair. Refer to the architects furniture schedules FURN0001	No	6
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E	Techno 800 medium back desk chair. Refer to the architects furniture schedules FURN0001	No	25
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RECEPTION

F	Strata Armchair with Oak Legs in WW Fabric. Refer to the architects furniture schedules FURN001	No	2
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G	Jojo CoffeeTable 600 X 600. Refer to the architects furniture schedules FURN001	No	1
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BOARDROOM

H	4 800 x 1 600mm Runway Boardroom table with slab legs and three glass inlays.Refer to Architect furniture schedule 546947	No	1
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ACCESSORIES

J	Metal dustbin. Refer to the architects furniture schedules 540634 FUR001	No	9
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K	Metal letter tray. Refer to the architects furniture schedules 540628 FURN001	No	5
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L	Carpet protector: Refer to architects schedule FURN001	No	17
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A	Magnetic white board, size 1 000 x 1 200mm . Refer to the architects furniture schedules FURN001	No	1	
B	Pin board. PB9, size 900 x 900mm. Refer to the architects furniture schedules FUR001	No	8	
C	PVC framed clock. Refer to the architects furniture schedules FURN001	No	7	
D	Orga 8 (Undercounter unit), comprised of 2 Filing, Drawers, Top and Base, 1 utility/stationery drawer, 2 utility boxes, 8 plastic containers, 1 Orga 8 SmartPack. All workstations (Except manager workstation). Refer to the architects furniture schedules FURN01-0	No	4	
E	Orga 15 (4 drawer unit), 4 Filing Drawers, Top and Base with Lock, 60 plastic containers, 4 Orga 15 SmartPacks.1-0 Recommended one per four people in open areas. Refer to the architects furniture schedules FURN01-0.	No	1	
F	Hinged door system Cupboard 900 x 450 x 1500mm high. Refer to Architect furniture schedule 540154	No	5	
G	AD 7427- Alcomed Examination Lay Table, Refer to Architect furniture specification FUR001	No	1	
H	Rapid Range MF 4 Square Top 1130 x 1225 with D handles in Harvard Cherry. Refer to Architect furniture specification FUR001	No	4	
<u>MESS AREA</u>				
J	8 000 x 800 Werzalit top and alu canteen base . Refer to the architects furniture schedules FURN001	No	6	
K	Fastina II Canteen side chair. Refer to the architects furniture schedules FURN001	No	24	
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	<p>Bill No. 9 CEILINGS, PARTITIONS AND ACCESS FLOORING 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES</p>				

<u>INSULATION, ETC</u>					
<u>"Isotherm" or similar approved thermal insulation:</u>					
A	135mm Insulation in blanket form, closely fitted and laid on top of brandering between roof timbers, etc (brandering elsewhere measured) (New Rate)	m ²	243		
B	80mm Lamdaboard	m ²	426		
<u>SUSPENDED CEILINGS</u>					
<u>9.5mm Rhinoboard with taped joints and the whole finished with skim plaster trowelled to a smooth polished surface to the thickness recommended by the manufacturer</u>					
C	600mm Wide horizontal side of bulkhead suspended not exceeding 1m below steel rafters at 1 200mm centres maximum	m	22		
D	600mm Wide horizontal side of bulkhead suspended below concrete	m	17		
E	100mm High vertical side of bulkhead	m	39		
F	180mm High vertical side of bulkhead	m	39		
G	Extra over ceiling for opening for 50mm diameter downlighter	No	25		
<u>600 x 600mm x 15mm Thick square edge "OWAcoustic Cosmos N Premium Class A2-S1" mineral fibre ceiling panels, laid on 1 hour fire rated OWAconstruct S3 butt cut exposed tee suspension system including main tees, cross tees etc, all suspended with galvanized hangers at centres not exceeding 1 200mm, and all installed to manufacturer's specification</u>					
H	Ceilings suspended not exceeding 1m below steel rafters at 1 200mm centres maximum	m ²	18		
<u>1200 x 600mm x 15mm Thick square edge "OWAcoustic Cosmos N Premium Class A2-S1" mineral fibre ceiling panels, laid on 1 hour fire rated OWAconstruct S3 butt cut exposed tee suspension system including main tees, cross tees etc, all suspended with galvanized hangers at centres not exceeding 1 200mm, and all installed to manufacturer's specification</u>					
J	Ceilings suspended not exceeding 1m below steel rafters at 1 200mm centres maximum	m ²	225		
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A	Ceilings suspended not exceeding 1m below concrete slabs	m ²	140	
<u>CORNICES</u>				
<u>Cornices, perimeter trims, etc. to ceilings</u>				
B	"Gyproc LSTP 9.5" shadowline for flush plastered ceilings, plugged	m	464	
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SUNDRIES

"Kirk Marketing" or similar approved trims

A 3 x 25mm Brass flat bar (Code: BFB250) between different floor finishes as per drawing 153_01, Rev 2

m

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FLOOR COVERINGS, WALL LININGS ETC
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FLOOR COVERINGS, WALL LININGS ETC

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Bill No. 10

FLOOR COVERINGS, WALL LININGS ETC

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HANDLES

In accordance with "DORMAKARBA" catalogue

A	Stainless steel tubular handle (Code:CR003)	Sets	31
B	Stainless steel tubular pull handle (Code:DPH301A)	Sets	1

DOOR CLOSERS

In accordance with "DORMAKARBA" catalogue

C	Cam action door closer with slide channel arm with hold open & fixing bracket complete (Code:TS91B HO) (Pull-side fixing)	No	11
D	Variable spring action door closer with parallel channel arm with hold open & fixing bracket complete (Code:TS73NEN3-4) (Push-side fixing)	No	1

HINGES, BOLTS, ETC

In accordance with "DORMAKARBA" catalogue

E	102 x 75 x 3mm Stainless steel ball bearing butt hinge (Code:DBB-SS-009)	No	96
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CATCHES, CABIN HOOKS, ETC

In accordance with "DORMAKARBA" catalogue

F	Stainless steel hat & coat hook with rubber buffer (Code:DHC-SS-031-B)	No	12
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LOCKS

In accordance with "DORMAKARBA" catalogue

G	Stainless steel keyhole escutcheons (Code:DKE-001)	Sets	15
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A	Stainless steel multi lever sash lock (Code:D034S)	No	15	
B	Stainless steel multi lever sash lock (Code:D035S)	No	12	
C	Stainless steel indicator set (CODE:DWC-005)	Sets	12	
D	Stainless steel indicator set (CODE:DWC-006)	Sets	1	
E	Stainless steel deadlock (Code:DMWC-SS-008)	No	1	
F	Stainless steel deadlock (Code:D032D)	No	1	
G	Nickel plated rebate set (Code:D034S)	No	4	
<u>PUSH PLATES AND KICKING PLATES</u>				
<u>In accordance with "DORMAKARBA" catalogue</u>				
H	900 x 300 x 1.2mm Stainless steel kick plate countersunk screwed along edges (Code:DKP-SS162)	No	2	
<u>SUNDRIES</u>				
<u>In accordance with "DORMAKARBA" catalogue</u>				
J	Stainless steel floor mounted door stop (Code:DDC-SS-017)	No	32	
<u>BATHROOM FITTINGS</u>				
<u>"Franke" or similar approved</u>				
K	32mm Diameter stainless steel angle grab rail, plugged (Code: CNTX700A)	No	1	
L	32mm Diameter stainless steel straight grab rail, plugged (Code: CNTX600)	No	1	
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A	"Rodan" lockable stainless steel paper towel dispenser, plugged (Code: RODX600)	No	5	
B	"Rodan" 23 litre stainless steel waste bin, plugged (Code: RODX605)	No	5	
C	"Rodan" lockable stainless steel soap dispenser with front push button, plugged (Code: RODX618)	No	8	
D	"Rodan" lockable stainless steel double toilet roll holder, plugged (Code: RODX672)	No	9	
E	Jetstream electronic hand dryer	No	1	
F	Chronos soap dish (Code: 2120073)	No	6	
<u>LETTERS, NAMEPLATES, ETC</u>				
<u>In accordance with "ASSA ABLOY" catalogue</u>				
G	152 x 152 x 1.2mm Stainless steel plate with engraved female pictogram (Code: SS5066-06SSSE11)	No	2	
H	152 x 152 x 1.2mm Stainless steel plate with engraved male pictogram (Code: SS5066-06SSSE10)	No	2	
J	152 x 152 x 1.2mm Stainless steel plate with engraved paraplegic pictogram (Code: SS5066-06SSSE14)	No	1	
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GALVANISED STEEL COLUMNS AND BEAMS

Welded plate columns, with flat base, cap, bearer and connection plates, bolted to concrete

A	100 x 100 x 2.5 Square hollow section columns (In 16 No) - Carport	t	0.46
B	IPE 180 x 18kg/m I-section columns (In No 8) Guard	t	0.21
C	IPE 180 x 18kg/m I-section columns (In No 10) Garage	t	0.24
D	IPE 180 x 18kg/m I-section columns (In No 24) Admin	t	0.68
E	IPE 180 x 18kg/m I-section columns (In No 36) Truckport	t	0.94
F	IPE 200 x 20kg/m I-section columns (In No 23) Pole Store	t	1.08

Welded beams in single lengths with flat bearer and connection plates, bolted to brickwork

G	IPE 160 x 16kg/m I-section rafters/beams (In No 10) Garage	t	0.28
H	IPE 180 x 18kg/m I-section rafters/beams (In No 4) Guard	t	0.36
J	IPE 180 x 18kg/m I-section rafters/beams (In No 5) Garage	t	0.82
K	IPE 180 x 18kg/m I-section rafters/beams (In No 8) Carport	t	0.91
L	IPE 180 x 18kg/m I-section rafters/beams (In No 12) Admin	t	1.66
M	IPE 180 x 18kg/m I-section rafters/beams (In No 18) Truckport	t	2.93
N	IPE 200 x 20kg/m I-section rafters/beams (In No 33) Pole Yard	t	1.30

GALVANISED STEEL PURLINS, GIRTS, BRACING, ETC

Purlins and girts bolted to steel

P	125 x 65 x 20 x 2.5mm Thick cold-formed lipped channel purlins	t	4.48
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Welded bracing, anti-sag rails, etc with flat connection plates, bolted to steel

Q	70 x 70 x 6mm Angle section bracing	t	1.259
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BOLTS, FASTENERS, ETC

A	M12 bolts	kg	13
B	M16 chemical anchor bolts 100mm long	No	468

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	<p>Bill No. 13 METALWORK 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES</p>				

Aluminium doors, windows, etc

Doors and windows shall comply with AAAMSA design criteria

Glazing shall comply with SAGGA regulations. Glass shall be 6,38mm "Intruderprufe" PVB laminated safety glass, as shown on the window schedules/drawings appended to these bills of quantities. Glass must bear safety glass mark. Glass thickness shall comply with SAGGA regulations irrespective of thicknesses shown on the schedules/drawings

Doors and windows shall be supplied with protective tape and plastic and shall be removed only once surrounding trades have been completed

For purpose made windows and doors, refer to the drawings annexed to these bills of quantities.

The Contractor is advised that the design, supply and installation of the aluminium windows, doors and shop fronts are to be carried out in strict accordance with the Architect's specification and all aluminum profiles, manufacturing and fixing methods are to comply with AAMSA Specifications and Installation Standards.

The Contractor to provide a design indemnity letter.

The Contractor to provide shop drawings for approval by the Architect. The Contractor shall submit shop drawings for approval by the Architect within two weeks of appointment. The Contractor shall only proceed with the works after written approval has been given by the Architect.

Aluminium profiles and colour samples must be approved by Architect prior to manufacturing.

Framework and structural support to the shop fronts is to be sized by the Contractor and be included in the shopfront drawings with suitable thickness to comply with wind load requirements and SABS Specifications (Allowances to be made for fixing required for shopfronts)

The Contractor to is allow for and calculate tolerances for expansion and contraction of all aluminium profiles.

The Contractor is to provide a waterproofing guarantee for all shopfronts and windows.

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The Contractor is to confirm all window and shopfront sizes with the Architect.

The following certificates shall be provided prior to commencement of work on site:

- 1 A copy of the relevant AAAMSA Performance Test Certificate from the manufacturer/contractor supplying the architectural aluminium product
- 2 A Certificate of Conformance confirming that anodising or powder coating has been processed in accordance with SANS 999 and SANS 1796 respectively
- 3 A powder guarantee of not less than 15 years issued by the powder manufacturer. The specific conditions contained in this guarantee shall form part of the powder coating process
- 4 A Certificate of Conformance confirming that glazing has been installed in accordance with SANS 10137, ensuring that safety glazing materials have been installed in the mandatory areas and that each individual pane of safety glazing materials has been permanently marked
- 5 A warranty from the manufacturer of the laminated safety glass and/or hermetically sealed glazing units guaranteeing the products against delamination and colour degradation for a period of not less than five years

Finishes

Final product shall be free from all sharp edges

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Ironmongery

All ironmongery to aluminium windows, doors, shopfronts, roller shutter doors etc is to be supplied and fixed by the Contractor. The Contractor is to provide for approval by the Architect samples of these ironmongery. All ironmongery shall be approved by the Architect prior to installation.

The Contractor to supply all relevant shopfronts with catches, handles, hinges etc. to match shop fronts and doors, all to the Architects approval and as per Architect's drawing & schedules.

Sliding gear

All sliding gear to sliding doors to be supplied by the Contractor unless otherwise specified. The Contractor to provide samples for approval by the Architect of these sliding gear on submission of their tenders. All sliding gear shall be approved by the Architect prior to installation.

Joints and sealants

All joints in frames shall be made by mechanical means.

An approved silicone sealant is to be provided for both sides of all internal and external shop fronts and windows between the aluminum frames and brick wall or concrete column and between the aluminium frame and plaster finish.

Structural support

No structural support steelwork has been provided for, however should steelwork be necessary it must be sized and included in the cost of the relevant shop front. No exposed structural support steelwork will be permitted and all sections must be accommodated within the aluminium profile if necessary or cladded.

The Contractor is to fix the shopfronts edge to edge with no intermediate support provided unless indicated by the Architect.

Any additional support work deemed necessary by the Contractor must be provided for.

These costs must be allowed for in the rates provided in this tender document.

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Protection

The Contractor to ensure that allowances are made for sufficient protection against damage, etc as required until practical completion.

Cleaning

The Contractor to ensure that allowances are made for sufficient cleaning as required.

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STAINLESS STEEL HANDRAILS

Welded grade 316 stainless steel handrails to stair walls:

A	40mm Diameter handrails with 10mm rod connectors epoxied into walls at 1180mm centres and 40 x 40 x 5mm cover plates as per architects drawing 1609/01/906/4	m	28
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STAINLESS STEEL BALUSTRADES

Welded grade 316 stainless steel balustrades to stairs

B	Raking balustrades 1 000mm high of 40mm diameter grabrail, fixed to 40mm diameter upright posts at 500mm centres and 10mm diameter intermediate balusters at 120mm centres post fixed with and including chemical anchors as per architects drawing 1609/01/906/4	m	3
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ALUMINIUM WINDOWS, DOORS, ETC

Approved epoxy coated aluminium window units complete with subframes, ironmongery, clear single glazing, sealing internally and externally and fixing to brickwork or concrete all as per "Crealco casement 38" profile or similar approved aluminium door manufacturer (Colour: Matt Charcoal - Code: QL258P / INTERPON D2525 T)

C	Purpose made window size 600 x 600mm high overall, as per drawing 1609/01/101/3 (Type 100 AW01 & 400 AW01)	No	24
D	Purpose made window size 600 x 1 200mm high overall, as per drawing 1609/01/101/3 (Type 100 AW02)	No	4
E	Purpose made window size 600 x 1 785mm high overall, as per drawing 1609/01/101/3 (Type 100 AW03)	No	2
F	Purpose made window size 1 430 x 1 200mm high overall, as per drawing 1609/04/101/3 (Type 400 AW02)	No	2
G	Purpose made window size 1 800 x 1 200mm high overall, as per drawing 1609/01/101/3 (Type 100 AW08)	No	1

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A	Purpose made corner window size 1 770 x 1 785 and 1020 x 1785mm high overall, as per drawing 1609/01/101/3 (Type 100 AW04)	No	1	
B	Purpose made window size 2 400 x 1 200mm high overall, as per drawing 1609/01/101/3 (Type 100 AW09)	No	1	
C	Purpose made window size 3 000 x 1 200mm high overall, as per drawing 1609/04/101/3 (Type 400 AW01)	No	1	
D	Purpose made window size 3 180 x 1 785mm high overall, as per drawing 1609/01/101/3 (Type 100 AW06)	No	1	
E	Purpose made window size 1 200 x 1 785mm high overall, as per drawing 1609/01/101/3 (Type 100 AW10)	No	1	
F	Purpose made window size 1 800 x 1 785mm high overall, as per drawing 1609/01/101/3 (Type 100 AW11)	No	1	
G	Purpose made window size 4 125 x 1 785mm high overall, as per drawing 1609/01/101/3 (Type 100 AW05)	No	1	
H	Purpose made window size 4 825 x 1 785mm high overall, as per drawing 1609/01/101/3 (Type 100 AW07)	No	1	
	<u>Approved epoxy coated aluminium window units complete with subframes, ironmongery, clear double glazing, sealing internally and externally and fixing to brickwork or concrete all as per "Crealco palace" multi profile or similar approved aluminium door manufacturer (Colour: Matt Charcoal - Code: QL258P / INTERPON D2525 T)</u>			
J	Purpose made sliding window size 1 800 x 1 200mm high overall as per drawing 1609/01/101/3 (Type 100 ASW01)	No	1	
	<u>Approved epoxy coated aluminium door frame, including sill and hinges as per schedule, sealing internally and externally and fixing to brickwork or concrete all as per "Crealco clip 44" profile or similar approved aluminium door manufacturer (Colour: Matt Charcoal - Code: QL258P / INTERPON D2525 T)</u>			
K	Purpose made single door and frame 900 x 2 100mm high as per drawing 1609/04/101/3 (400 Type AD01) and 1609/02/002/3 (200 Type AD01)	No	3	
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A	Purpose made single door and frame 1 450 x 2 100mm high as per drawing 1609/01/101/3 (Type 100 ADW01)	No	1		
B	Purpose made double door and frame 1 500 x 2 125mm high as per drawing 1609/01/101/3 (Type 100 ADD01)	No	3		
C	Purpose made double door and frame 1 800 x 2 100mm high as per drawing 1609/01/101/3 (Type 300 ALDD01)	No	1		
D	Purpose made single door and frame 2 000 x 2 100mm high as per drawing 1609/01/101/3 (Type 100 ADW02)	No	3		
E	Purpose made double door and frame 2 700 x 2 125mm high as per drawing 1609/01/101/3 (Type 100 FDDW01)	No	1		
<u>ALUMINIUM LOUVRE UNITS</u>					
<u>Approved epoxy coated aluminium louvre units complete with subframes, ironmongery as per schedule, sealing externally and fixing to brickwork or concrete all as per "Crealco Casement 38" profile or similar approved aluminium louvre manufacturer (Colour: Matt Charcoal - Code: QL258P / INTERPON D2525 T)</u>					
F	Purpose made louvre size 600 x 1 200mm high overall as per drawing 1609/03/101/3 (300 Type AL01)	No	5		
G	Purpose made louvre size 900 x 1 500mm high overall as per drawing 1609/04/101/3 (Type 400 AL01)	No	2		
H	Purpose made louvre size 1 130 x 2 720mm high overall as per drawing 1609/01/101/3 (100 Type AL02)	No	8		
J	Purpose made louvre size 1 235 x 2 720mm high overall as per drawing 1609/01/101/3 (100 Type AL01)	No	11		
K	Purpose made louvre double door size 1 500 x 2 100mm high overall as per drawing 1609/01/101/6 (100 Type ALDD01)	No	1		
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A	Purpose made louvre double door size 2 000 x 900mm high overall braai	No	3		
B	Purpose made louvre double door size 1 800 x 2 100mm high overall as per drawing 1609/01/101/3 (300 Type ALDD01)	No	1		
<u>ALUMINIUM PERGOLAS</u>					
<u>Aluminium pergolas complete with fixing brackets spacers etc. as per architects detail drawings 1609/01/902, 903, 904</u>					
C	150 x 50mm Aluminium rafters	m	55		
D	150 x 50mm Aluminium posts	m	27		
E	60 x 50mm Aluminium purlins	m	137		
<u>BRAAI ACCESSORIES</u>					
F	Purpose made grade 316 stainless steel double braai door 2 100 x 1 200mm high	No	1		
G	Purpose made grade 316 stainless steel tubo cowl 2 000 x 800 x 450mm high	No	1		
<u>GALVANISED STEEL ROLLER SHUTTERS ETC</u>					
<u>Galvanised mild steel motorised roller shutter door with horizontal slats, complete with frame, rubber door footing (T-bar), header box, approved locking device to the outside to accommodate 50mm padlock (padlock elsewhere measured) and fixed to brickwork or concrete. (Finish to be powder coated QL258P. Colour to be 'Matt Charcoal' by Interpon D0125 Powder Coatings)</u>					
H	Motorised slatted roller shutter door for opening 2 800 x 2 525mm high overall, including emergency override.as per drawing 1609/01/101/3 (300 Type RSD01) and 1609/02/002/3 (200 Type RSD01)	No	7		
J	Motorised slatted roller shutter door for opening 3 500 x 4 140mm high overall, including emergency override.as per drawing 1609/02/002/3 (200 Type RSD02)	No	8		
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HOT-DIPPED GALVANISED STEELFLOORS

Panel supports

A 100 x 50 x 2,5mm Channel bolted with and including Hilti Hit-Hy 200 with M12 Hit-V 8.8 Rods at 1,0m centres

kg 28

Floor trench covers:

B 40mm "Rectagrid RS40" similar approved grating duct covers in approximately 600mm widths and suitable lengths, laid loose in frames (frames elsewhere)

m² 26

C 40 x 40 x 5mm Angle section frames with and including lugs welded on

kg 41.6

D Extra over for mitred and welded L-intersection

No 4

E 8mm Diameter chemical anchor

No 7

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	<u>BILL NO 14</u>				
	<u>PLASTERING</u>				
	<u>(CPAP WORK GROUP NO 142 UNLESS OTHERWISE STATED)</u>				
	<u>PREAMBLES</u>				
	For Preambles see "Model Preambles for Trades"				

	<u>CEMENT RENDER</u>				
	All specialised plaster type wall coatings are to be executed in strict accordance with the manufacturer's instructions				
	<u>Sikafloor - 20N Purcem Polyurethane screed on powerfloated floors with and including Sikafloor 31N Purcem Polyurethane coating</u>				
A	9m Thick on floors and landings	m ²	26		
B	9mm Thick on walls	m ²	12		
	<u>Sikafloor - 29 Purcem Polyurethane screed on powerfloated floors with and including Sikafloor 31N Purcem Polyurethane coating</u>				
C	100 x 100 x 9mm Thick covered fillets against vertical walls	m	39		
	<u>SCREEDS</u>				
	<u>Screeds on concrete</u>				
D	30mm Thick on floors and landings	m ²	501		
E	Average 40mm thick to showers to falls and currents	m ²	7		
F	Average 60mm thick to falls and currents	m ²	39		
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INTERNAL PLASTER

Cement plaster on brickwork

A	On walls	m ²	2,524
B	On narrow widths	m ²	100

Cement plaster on concrete

C	On Beams	m ²	24
D	On Columns	m ²	26
E	On concrete soffits	m ²	25

EXTERNAL PLASTER

Cement plaster on brickwork

F	On walls	m ²	455
G	On Narrow widths	m ²	47

Cement plaster on concrete

H	On Beams	m ²	320
J	Weathering average 20mm thick to narrow width, not exceeding 300mm wide	m	142

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	<p>Bill No. 15 TILING 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES</p>				

<u>WALL TILING</u>					
<u>100 x 200 x 7.3mm Glazed ceramic wall tiles (PC Amount R310/m2 supply only, delivered to site excluding VAT) and allow for waste and fixed to plastered walls (plaster elsewhere) with waterproofed adhesive and point with tinted (Colour: White) waterproof grouting compound</u>					
A	On walls	m ²	66		
B	On narrow widths	m ²	7		
<u>75 x 300 x 7.8mm CVA Gris Liso Brillo glazed ceramic wall tiles (PC Amount R420/m2 supply only, delivered to site excluding VAT) and allow for waste and fixed to plastered walls (plaster elsewhere) with waterproofed adhesive and point with tinted (Colour: White) waterproof grouting compound</u>					
C	On walls in splashbacks	m ²	57		
<u>FLOOR TILING</u>					
<u>600 x 600 x 9mm Thick "Screed Plaster" full bodied porcelain floor tiles a (PC Amount R220/m2 supply only, delivered to site excluding VAT) and allow for waste and fixed to screeded floors (screed elsewhere) with waterproofed adhesive and point with tinted waterproof grouting compound</u>					
D	On floors	m ²	253		
E	On floors in 100 x 100mm cut tiles	m ²	7		
F	Skirting 100mm high of cut tiles	m	305		
<u>SUNDRIES</u>					
<u>"Kirk Marketing" or similar approved trims</u>					
G	5 x 10mm Aluminium Elite straight edge trim (Code: AESE100) to wall tiles	m	305		
H	5 x 10mm Aluminium Elite formable edge trim (Code: AEFE100) to floor tiles	m	65		
J	10mm Aluminium Tilin-in ramp edge trim (Code: ATIR100) to floor tiles	m	25		
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A	10mm Aluminium movement joint (Code: AMJ100) to floor tiles	m	44	
B	45 x 30mm Aluminium Retro -Fit stairnosing (Code: APRN450) to floor tiles	m	11	
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uPVC pipes and fittings

Sewer and drainage pipes and fittings shall be jointed and sealed with butyl rubber rings

Soil, waste and vent pipes and fittings shall be solvent weld jointed

uPVC pressure pipes and fittings

Pipes of 50mm diameter and smaller shall be plain ended with solvent welded uPVC loose sockets and fittings

Pipes of 63mm diameter and greater shall have sockets and spigots with push-in type integral rubber ring joints. Bends shall be uPVC and all other fittings shall be cast iron, all with similar push-in type joints

Copper pipes

Pipes shall be hard drawn and half-hard "Maksal" pipes of the class described. Class 0 (thin walled hard drawn) pipes shall not be bent. Class 1 (thin walled half-hard), Class 2 (half-hard) and Class 3 (heavy walled half-hard) pipes shall only be bent with benders with inner and outer formers. Fittings to copper waste, vent and anti-syphon pipes, capillary solder fittings and compression fittings shall be "Cobra Watertech" type. Capillary solder fittings shall comply with ISO 2016

Copper pipes are to be installed in accordance with the latest revision of the Code of Practice for Copper Plumbing soldering techniques. Flux, solder, etc to be strictly in accordance with the manufacturer's requirements with special attention to copper flux composition

Reducing fittings

Where fittings have reducing ends or branches they are described as "reducing" and only the largest end or branch size is given. Should the contractor wish to use other fittings and bushes or reducers he may do so on the understanding that no claim in this regard will be entertained

Fixing of pipes

Unless specifically otherwise stated, descriptions of pipes shall be deemed to include fixing to walls, etc, casting in, building in or suspending not exceeding 1m below suspension level

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Laying, backfilling, bedding, etc of pipes

Pipes shall be laid and bedded in accordance with manufacturers' instructions and trenches shall be carefully backfilled

Where no manufacturers' instructions exist, pipes shall be laid in accordance with Clauses 5.1 and 5.2 of each of the following:

SABS 1200L : Medium-pressure pipelines

SABS 1200LD : Sewers

SABS 1200LE : Stormwater drainage

Pipe trenches, etc shall be backfilled in accordance with Clauses 3, 5.5, 5.6, 5.7 and 7 of SABS 1200DB : Earthworks (Pipe trenches)

Pipes shall be bedded in accordance with Clauses 3.1 to 3.4.1, 5.1 to 5.3 and 7 of SABS 1200LB : Bedding (Pipes)

Unless otherwise described bedding of rigid pipes shall be Class B bedding

General

Descriptions of pipes laid in and including trenches and of inspection chambers, catchpits, etc shall be deemed to include excavation, bedding, backfilling, compaction to a minimum of 93% Mod AASHTO density and disposal of surplus material on site

Descriptions of service pipes and flexible connecting pipes shall be deemed to include connections to taps, cisterns, etc and to steel pipes (adaptors for connections to copper pipes, etc are given separately)

Descriptions of WC pans, slop hoppers, etc shall be deemed to include for joints to soil pipes (pan connectors are separately measured)

As-built drawings

Where required, the contractor shall prepare an updated set of as-built drawings. At completion of the contract the contractor shall hand these drawings to the principal agent for reproducing onto the originals for handing over to the employer (provision for allowance of as-built drawings elsewhere)

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<u>RAINWATER DISPOSAL</u>					
<u>0.8mm Approved seamless aluminium prepainted (to an approved colour) gutters fixed strictly in accordance with the manufacturer's instructions</u>					
<u>0.6mm Approved seamless aluminium prepainted (to an approved colour) gutters fixed strictly in accordance with the manufacturer's instructions</u>					
A	150 x 125mm Ogee roof gutters	m	154		
B	Extra over gutter for stopped end	No	2		
C	Extra over gutter for outlet for 80mm diameter PVC pipe	No	22		
<u>PVC rainwater pipes, etc all as per manufacturers instructions:</u>					
D	80mm Diameter rainwater down pipes fixed to brick walls	m	125		
E	Extra over rainwater pipe for swan-neck	No	22		
F	Spreader for 80mm pipe	No	13		
G	Extra over 80mm rainwater pipe for shoe	No	22		
<u>"Supercast EZE-FLO" cast iron roof outlets</u>					
H	150mm Vertical outlet	No	13		
<u>SANITARY FITTINGS</u>					
<u>"Lecico" or similar approved</u>					
J	485 x 370 x 135mm Square white wash hand basin (Code: INDBASCTOP0470BC) counter top basin	No	4		
K	558 x 463 x 185mm Round white wash hand basin (Code: LAW55) with one taphole, basin fixed to wall with two galvanised mild steel brackets bolted to wall with and including four 4 x 6mm anchor bolts	No	2		
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A	570 x 460 x 220mm "Sumaya" Round white wash hand basin (Code: LSW) with one taphole, basin fixed to wall with two galvanised mild steel brackets bolted to wall with and including four 4 x 6mm anchor bolts	No	6		
B	360 x 337 x 557mm White wall hung urinal (Code: LGEOU) including "FJ" urinal pipe offset (Code: FJT5-5/N), and two hanger brackets.	No	4		
C	521 x 357 x 376mm WC suite (Code: LSYDWHP) comprising pan with double flap heavy duty wooden white seat (SW) and concealed Grohe Uniset cistern (G38643001) with and including Grohe Skate Acuator plate white (G38732SHO) build into walls	No	9		
D	443 x 855 x 731mm "Atlas paraplegic" close couple WC (Code: PARSET CCB0RAIBE) with matching 9 litre cistern complete with lid, fitments, and purpose made C.P. side-flush lever (left or right) and supplied with purpose made urea seat and cover plate, including wall mounted dogleg and cistern mounted grab rail	No	1		
E	MDF Universal toilet seat (Code: CHISEASTD0MDFUC) <u>"Franke" or similar approved</u>	No	1		
F	500 x 900mm "Quinline QLX622 drop-on stainless steel sink	No	1		
G	500 x 1 200mm "Quinline QLX621.120" drop-on stainless steel sink <u>WASTE UNIONS</u> <u>"Cobra" or similar approved</u>	No	1		
H	Slotted basin waste (Code: 317-40/N, CP) with plug, chain and stay	No	6		
J	Slotted basin waste (Code: 303/N, CP) with plug, chain and stay	No	12		
K	Bath waste with plug (Code: 317-40) <u>TRAPS ETC</u> <u>"Cobra" or similar approved</u>	No	2		
L	32mm Brass/Chrome basin bottle trap (Code: 340)	No	6		
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TAPS, VALVES, ETC

"Cobra" or similar approved

A	15mm "Ledimo" round pillar tap (Code:KM2.301) with internal flow control, spout strainer and a no- hold feature with water saving auto shut- off	No	12
B	15mm Bore Elbow action pillar tap with raised nose (Code: BTBD00010, CP)	No	1
C	Angle ball valve (Code: 832-10/N, CP) with plastic coated stainless steel lever	No	14
D	Flex connection hose (Code: C-15/350)	No	15
E	Urinal flush valve (Code: FJ6-000/N) with ball-o-stop and palm press push-button assembly all installed according to manufacturers instructions	No	4
F	"Moon" sink mixer J Sout P/T (Code: BTMT10019, CP)	No	1
G	"Solid" sink mixer P/T (Code: BTMT10020, CP)	No	1
H	Mixed solid shower mixer (Code: BTMT80000)	No	6
J	15mm "Blue" pillar tap (Code: 03-21B/N, CP)	No	4
K	15mm Bib hose tap (Code: 108LK.15)	No	1
L	15mm Mixed solid basin mixer STD (Code: BTMT80010)	No	7
M	15mm "Neo" wall spout 250mm long (Code BTSA10200)	No	4
N	Vandalproof shower rose (Code: KP2.6)	No	6

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ELECTRIC WATER HEATERS

"Kwikot"

A 5 Litre "ZIP" over-basin electric water heater (Code: 5.0HB)

No 1

B 10 Litre "Stiebel Eltron" under counter water heater
(Code:SHC10AU)

No 1

"AS-BUILT" DRAWINGS

C Provision for "as-built" drawings

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A	Mirror 600 x 1 150mm high with four screws	No	12		
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ON INTERNAL FLOATED PLASTER SURFACES

Prepare and apply one coat "Professional Gypsum and Plaster Primer (PP700)" and two coats "Wall & All (WAA)" extremely durable, washable, pure acrylic emulsion sheen paint to an approved colour

A	Walls	m ²	2,566
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ON EXTERNAL FLOATED PLASTER SURFACES

Prepare and apply one coat "Professional Gypsum and Plaster Primer (PP700)" and two coats "Wall & All (WAA)" extremely durable, washable, pure acrylic emulsion sheen paint to an approved colour

B	Walls	m ²	800
C	Ceilings and beams	m ²	30

ON FIBRE CEMENT SURFACES

Prepare and apply one coat "Professional Gypsum and Plaster Primer (PP700)" and two coats "Wall & All (WAA)" extremely durable, washable, pure acrylic emulsion sheen paint to an approved colour

D	On ceilings and cornices	m ²	71
E	On facias	m ²	82

ON METAL

Prepare and apply one coat zinc chromate primer, one undercoat and two coats gloss enamel paint to an approved colour on galvanised steel

F	Door frames	m ²	19
G	On structural steel members	m ²	429

ON WOOD SURFACES

One coat linseed oil and two coats "Rubbol mid brown" wood preservative sanded lightly in between coats

H	On rails not exceeding 300mm girth	m	40
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	<p><u>SECTION NO 01A</u></p> <p><u>BILL NO 19</u></p> <p><u>EXTERNAL WORKS</u></p> <p><u>PREAMBLES</u></p> <p>For Preambles see "Model Preambles for Trades"</p> <p>-----</p> <p><u>SUPPLEMENTARY PREAMBLES</u></p> <p><u>Trade names</u></p> <p>Wherever a trade name for any product has been described, the Tenderer's attention is drawn to the fact that any other product of equal quality may be used <u>subject to the written approval being obtained</u> prior to the closing date for submission of tenders.</p> <p><u>Fences</u></p> <p>Fences and gates shall be erected strictly in accordance with the manufacturer's / supplier's specifications and instructions</p> <p><u>Fixing</u></p> <p>Items described as "nailed" shall be deemed to be fixed with hardened steel nails or pins, or to be shot-pinned, to brickwork or concrete</p> <p>Items described as "plugged" shall be deemed to include screwing to fibre, plastic or metal plugs at not exceeding 500mm centres, and where described as "bolted", the bolts have been given elsewhere.</p> <p>-----</p>			
	Carried to Abstract			
	<p>Bill No. 19 EXTERNAL WORKS 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES</p>		R	

FENCING

Site Clearance

A	Clear away all grass, bushes, rubble, etc. and level surface of ground for a width of 1000mm under fencing, including filling in depressions with clean earth filling and compacting	m	361
	<u>"Cochrane ClearVu" or similar approved high density pressed mesh panel fencing, formed of 3mm diameter horizontal and 4mm diameter vertical high tensile wires galvanised with 'Marine Bond Fusion' coating with aperture size 76,2mm x 12,7mm and reinforcing V-section ribs, bolted with vandal resistant bolts and clamping plates to 85 - 45mm Taper locking post including locking recess mechanism at 3,382m centres with sealed end caps with posts bedded in 15MPa 20mm aggregate concrete bases size 400 x 400 x 700mm deep:</u>		
B	2 100mm High PVC coated (Colour: Anthracite, RAL7021) welded mesh panels of 76.2 x 12.7mm apertures with D-profile horizontal reinforcing bends, panels fixed onto posts (posts elsewhere) with and including spider fixators and security bolts	m	361
C	2.5 x 100mm High PVC coated (Colour: Anthracite, RAL7021) serrated steel all-in-one top guard with pre-drilled holes and fixed to top of fence (fence elsewhere) with and including security bolts	m	361
D	76 x 76 x 1.6mm PVC coated (Colour: Anthracite, RAL7021) galvanised steel corner post 2 100mm high including post cap, post set in 400 x 400 x 700mm concrete base (15MPa) including necessary excavation, backfilling, etc.	No	6
E	76 x 76 x 1.6mm PVC coated (Colour: Anthracite, RAL7021) galvanised steel intermediate post 2 100mm high including post cap, post set in 400 x 400 x 700mm concrete base (15MPa) including necessary excavation, backfilling, etc.	No	107

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EXTERNAL WORKS
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WELDED STEEL GATES, BURGLAR BARS, ETC

Galvanised mild steel security gate complete in two panels, frame formed of 50mm square tube vertical to sides, 30 x 30 x 5mm angle horizontal at top, 150 x 50mm rectangular tube at bottom, with one 50mm horizontal square tube and one horizontal 40 x 10mm flatbar intermediates. Bottom panel filled with 4mm plate, top panel filled in with 16mm diameter solid rod intermediates at 100mm centres, top cut at angle, including 75 x 75mm steel side post, guides, gate locator, heavy duty rollers, site clearance and preparation of ground complete

A	Sliding gate 6 660 x 2 100mm high overall complete as per drawing ??	No	1
---	--	----	---

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Bill No. 19

EXTERNAL WORKS

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EXTERNAL WORKS

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2	CONCRETE, FORMWORK AND REINFORCEMENT	76	
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4	WATERPROOFING	84	
5	ROOF COVERINGS	87	
6	CARPENTRY AND JOINERY	92	
7	JOINERY FITTINGS	99	
8	FURNITURE AND FITTINGS	103	
9	CEILINGS, PARTITIONS AND ACCESS FLOORING	107	
10	FLOOR COVERINGS, WALL LININGS ETC	110	
11	IRONMONGERY	115	
12	STRUCTURAL STEELWORK	119	
13	METALWORK	130	
14	PLASTERING	133	
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GENERAL ITEMS

A Any additional items that the tenderer deems necessary for the successful and total completion of the Electrical Installation, required by this Specification and Drawings. Specify

SUB-TOTAL

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Item

-

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Bill No. 1
PART 1 PRELIMINARY AND GENERAL
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Bill No. 1

PART 1 PRELIMINARY AND GENERAL

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PART 1 PRELIMINARY AND GENERAL

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Item No		Quantity	Rate	Amount
	<u>SECTION NO 01B - A</u>			
	<u>BILL NO 2</u>			
	<u>DISTRIBUTION BOARDS</u>			
	<u>Supply & installation testing and commissioning with COC</u>			
A	Supply & Install Main DB - Installation finishings, vacuuming (cleaning) Testing, labelling and COC	No	1	
B	Supply & Install DB Truck Store- Installation finishings, vacuuming (cleaning) Testing, labelling and COC	No	1	
C	Supply & Install DB Garage- Installation finishings, vacuuming (cleaning) Testing, labelling and COC	No	1	
D	Supply & Install DB Guardhouse - Installation finishings, vacuuming (cleaning) Testing, labelling and COC	No	1	
E	Supply & Install SDB-1- Installation finishings, vacuuming (cleaning) Testing, labelling and COC	No	1	
F	Supply & Install SDB-2 - Installation finishings, vacuuming (cleaning) Testing, labelling and COC	No	1	
	<u>EARTH ELECTRODES</u>			
	<u>Earth electrodes, 3.6m long installed as follows:</u>			
	<u>Driven into ground with 16mm² CU cable with clamps</u>			
G	Supply	No	3	
H	Install	No	3	
	<u>DBS</u>			
J	Thermal imaging	No	6	
	Carried Forward to Summary of Section No.			R
	Bill No. 2 PART 2: SCHEDULE A: DISTRIBUTION BOARDS & GENERATOR 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES			

<u>Cables</u>					
<u>10mm² PVC/SWA/PVC 4 core CU cable</u>					
A	Supply	m	240		
B	Install	m	240		
<u>16mm² PVC/SWA/PVC 4 core CU cable</u>					
C	Supply	m	260		
D	Install	m	260		
<u>50mm² PVC/SWA/PVC 4 core CU cable</u>					
E	Supply	m	200		
F	Install	m	200		
<u>Bare copper earth wire</u>					
<u>6mm²</u>					
G	Supply	m	240		
H	Install	m	240		
<u>10mm²</u>					
J	Supply	m	260		
K	Install	m	260		
<u>25mm²</u>					
L	Supply	m	200		
M	Install	m	200		
<u>Trenching</u>					
N	Trenching in soft soil, 800mmD x 400mmW	m	700		
P	Trenching through hard rock, 800mmD x 400mmW	m	350		
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PART 2: SCHEDULE B: CABLES, WIRING AND EARTH WIRE					
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<u>Ducts, 50mm dia</u>			
A	Supply	m	350
B	Install	m	350
<u>Ducts, 75mm dia</u>			
C	Supply	m	700
D	Install	m	700
<u>Ducts, 110mm dia</u>			
E	Supply	m	700
F	Install	m	700
<u>LV CABLE TERMINATIONS</u>			
<u>Supply and install 600/1000 V PVC PVC SWA PVC cable termination</u>			
<u>10 mm² x 4C (Cu)</u>			
G	Supply	No	6
H	Install	No	6
<u>16 mm² x 4C (Cu)</u>			
J	Supply	No	8
K	Install	No	8
<u>50 mm² x 4C (Cu)</u>			
L	Supply	No	4
M	Install	No	4
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PART 2: SCHEDULE B: CABLES, WIRING AND EARTH WIRE			
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BARE COPPER TERMINATIONS

Supply and install 600/1000 V PVC SWA PVC cable termination

10mm²

A	Supply	No	6
---	--------	----	---

B	Install	No	6
---	---------	----	---

10mm²

C	Supply	No	8
---	--------	----	---

D	Install	No	8
---	---------	----	---

25mm²

E	Supply	No	4
---	--------	----	---

F	Install	No	4
---	---------	----	---

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PART 2: SCHEDULE B: CABLES, WIRING AND EARTH WIRE
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PART 2: SCHEDULE B: CABLES, WIRING AND EARTH WIRE

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PART 2: SCHEDULE B: CABLES, WIRING AND EARTH WIRE

176Q/2023/24

PROVISIONAL BILLS OF QUANTITIES

<u>Cables</u>				
<u>10mm² PVC/SWA/PVC 4 core CU cable</u>				
A	Supply	m	240	
B	Install	m	240	
<u>16mm² PVC/SWA/PVC 4 core CU cable</u>				
C	Supply	m	260	
D	Install	m	260	
<u>50mm² PVC/SWA/PVC 4 core CU cable</u>				
E	Supply	m	200	
F	Install	m	200	
<u>Bare copper earth wire</u>				
<u>6mm²</u>				
G	Supply	m	240	
H	Install	m	240	
<u>10mm²</u>				
J	Supply	m	260	
K	Install	m	260	
<u>25mm²</u>				
L	Supply	m	200	
M	Install	m	200	
<u>Trenching</u>				
N	Trenching in soft soil, 800mmD x 400mmW	m	700	
P	Trenching through hard rock, 800mmD x 400mmW	m	350	
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PART 2: SCHEDULE C: CONDUITS AND ACCESSORIES				
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BARE COPPER TERMINATIONS

Supply and install 600/1000 V PVC SWA PVC cable termination

10mm²

A	Supply	No	6
---	--------	----	---

B	Install	No	6
---	---------	----	---

10mm²

C	Supply	No	8
---	--------	----	---

D	Install	No	8
---	---------	----	---

25mm²

E	Supply	No	4
---	--------	----	---

F	Install	No	4
---	---------	----	---

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PART 2: SCHEDULE C: CONDUITS AND ACCESSORIES
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Bill No. 4

PART 2: SCHEDULE C: CONDUITS AND ACCESSORIES

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PROVISIONAL BILLS OF QUANTITIES

Item No		Quantity	Rate	Amount
	<u>SECTION NO 01B - A</u>			
	<u>BILL NO 5</u>			
	<u>LIGHT FITTINGS</u>			
	<u>Supply and install the following light fittings, equal or equivalent to the given, delivered to site. Installation must make provision for lamps, transformers (where applicable), wiring, connections and earthing.</u>			
	<u>Type 75 - Equal or equivalent to Lascon Recessed LED Panel 600x600</u>			
A	Supply	No	70	
B	Install	No	70	
	<u>Type 70 - Equal or equivalent to Lascon Recessed LED Panel 1200x600</u>			
C	Supply	No	4	
D	Install	No	4	
	<u>Type 82 - Equal or equivalent to Lascon C10 LED Light Vapour Proof 32W</u>			
E	Supply	No	66	
F	Install	No	66	
	<u>Type 50 - Equal or equivalent to GU10 6W LED Osram lamps</u>			
G	Supply	No	35	
H	Install	No	35	
	<u>Type 83 - Nordland EX 62W LED (explosion proof</u>			
J	Supply	No	8	
K	Install	No	8	
	Carried to Abstract			
	Bill No. 5			
	PART 2: SCHEDULE D: LIGHT FITTINGS			
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A Install

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PART 2: SCHEDULE D: LIGHT FITTINGS
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PART 2: SCHEDULE D: LIGHT FITTINGS

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Bill No. 5

PART 2: SCHEDULE D: LIGHT FITTINGS

176Q/2023/24

PROVISIONAL BILLS OF QUANTITIES

Item No		Quantity	Rate	Amount
	<u>SECTION NO 01B - A</u>			
	<u>BILL NO 6</u>			
	<u>LIGHT SWITCHES</u>			
	<u>Supply and install light switches complete with cover plates connecting to wiring and fitted in switch box (drawboxes). Switches to be equal or similar to Crabtree Classic range</u>			
	<u>16A one lever one way</u>			
A	Supply	No	42	
B	Install	No	42	
	<u>16A one lever two way</u>			
C	Supply	No	6	
D	Install	No	6	
	<u>16A one lever one way IP 65 rated</u>			
E	Supply	No	5	
F	Install	No	5	
	<u>16A daylight switch installed in Type F fitting</u>			
G	Supply	No	5	
H	Install	No	5	
	<u>Occupancy sensor See section B4.2 of the specification</u>			
J	Supply	No	50	
K	Install	No	50	
	Carried Forward to Summary of Section No.			
	Bill No. 6			
	PART 2: SCHEDULE E: LIGHT SWITCHES			
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Item No		Quantity	Rate	Amount
	<u>SECTION NO 01B - A</u>			
	<u>BILL NO 7</u>			
	<u>POWER POINT OUTLETS</u>			
	<u>Supply and install switched socket outlets complete with cover plates connecting to wiring and fitted in boxes or power skirting to be of type Crabtree Classic Range or similar.</u>			
	<u>16A ZA switched socket outlets</u>			
A	Supply	No	65	
B	Install	No	65	
	<u>16A 3-pin single switched socket outlets</u>			
C	Supply	No	1	
D	Install	No	1	
	<u>16A 3-pin single dedicated switched socket outlets</u>			
E	Supply	No	10	
F	Install	No	10	
	<u>16A 3-pin single switched socket outlet to fit power skirting</u>			
G	Supply	No	30	
H	Install	No	30	
	<u>16A 3-pin single dedicated switched socket outlet to fit power skirting</u>			
J	Supply	No	30	
K	Install	No	30	
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	PART 2: SCHEDULE F: POWER POINT OUTLETS			
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PART 2: SCHEDULE F: POWER POINT OUTLETS

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PART 2: SCHEDULE F: POWER POINT OUTLETS

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PART 2: SCHEDULE G: ISOLATORS

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PART 2: SCHEDULE G: ISOLATORS

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PROVISIONAL BILLS OF QUANTITIES

Item No		Quantity	Rate	Amount
	<u>SECTION NO 01B - A</u>			
	<u>BILL NO 9</u>			
	<u>CCTV System as per section 22 of Specification</u>			
	<u>Head-End & Recording Equipment</u>			
A	HD NVR 15TB Storage 2U - (Product code 15TB-HD-NVR)	No	1	
B	Switch Gigabit 28-Port (Cisco) 24-Port POE SFP - (Product code S28)	No	1	
C	Switch Gigabit POE Max 10-Port (Cisco) 8-Port POE 2-Fibre Ports - (Product code S8)	No	4	
D	8-Channel Network Video Management Software - (Product code 8C-HD-NVMS-ENT)	No	4	
E	Remote Monitoring Work Station - (Product code 2MN-HD-RMWS)	No	2	
F	19" Cabinet to house rack mounted equipment - (Product code Code not applicable)	No	2	
G	40-Inch LED LCD High Definition Monitors - (Product code LCD40WLED)	No	2	
H	23-Inch LED LCD High Definition Monitors - (Product code LCD23WLED)	No		Rate Only
J	Wall mount bracket, for LCD 40-Inch monitor - (Product code TVARMP)	No	2	
K	SFP-PORT 1000BASE-LX MINI-GBIC MODULE - 10KM-SM - (Product code SFP1000LX-10KM)	No	4	
	<u>Cameras</u>			
L	5.0 Mega pixel, HD, Day/Night IP Box Camera - (Product code 5MP-HD-DN)	No	26	
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	Bill No. 9 PART 2: SCHEDULE H: CCTV 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES			R

A	2.4-6mm Tamron Mega Pixel Lens - (Product code LC3810TA)	No	26		
B	Housing GL617FS - (Product code GL-617F)	No	26		
C	Wall-mount Bracket ES-OPT-WALL-SL - (Product code ES-OPT-WALL-SL)	No	26		
D	Camera pole mounting bracket - (Product code GEA-106)	No	26		
	<u>Cable</u>				
E	24 fibre heavy duty single mode duct cable per metre	m	1,000		
F	CAT6 network cable per 100 metre roll	No	30		
G	Surfix 2,5mm ² twin + earth per metre	m	100		
	<u>Power & Electrical</u>				
H	Hagar Distribution Box	No	4		
J	15A circuit breaker	No	4		
K	4x4 duo switched socket outlet with box and cover plate	No	4		
L	Electrical Work Compliance Certificate	No	1		
	<u>Fibre Equipment</u>				
M	Splicing cost per 24 fibres	No	1		
N	Splicing Casette	No	4		
P	Splicing Trays - 19" rack mount	No	1		
Q	LC/APC 3m Single Mode Fibre Optic pigtails	No	4		
R	Brush Panels - 19" rack mount	No	4		
	<u>Trunking & Conduit</u>				
S	PVC Trunking 25mm x 16mm per length	No	200		
T	PVC Trunking 60mm x 60mm per length	No	200		
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	PART 2: SCHEDULE H: CCTV				
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	PROVISIONAL BILLS OF QUANTITIES				

	<u>Sundries</u>				
A	Extractor fan for 19" rack	No	1		
B	CAT6 Connectors	No	40		
C	25mm Kopex Male gland	No	80		
D	25mm Kopex flexible conduit	m	80		
E	Bandit stainless steel strapping & buckle	No	20		
F	Cable ties 388mm	No	500		
G	Galvanised screws (M5x25)	No	100		
H	Nail-In Anchors (7x35)	No	40		
J	Screws coach	No	40		
K	Wall plugs	No	40		
	<u>Labour</u>				
L	Labour costs for installation				SUM
M	System Engineering				SUM
N	Project Management				SUM
	<u>General</u>				
P	Include all other additional cabling, power supplies, pc's, licences, cabinets etc to complete the CCTV project.				SUM
Q	Prior to approval & installation of the system the CCTV system must be fully demonstrated on site. The Contractor must prove compliance to specification under conditions that will be experienced during normal operation. Night & day.				SUM
R	Gigabyte S1082 tablet	No	1		
S	Remove, keep safe, clean and hand over to the Client the remainder of the existing cctv equipment. (DVR's, screens, redundant cameras etc.)				SUM
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	PART 2: SCHEDULE H: CCTV				
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PART 2: SCHEDULE H: CCTV

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PROVISIONAL BILLS OF QUANTITIES

A	Install	No	1		
	<u>8 - 64 zone integrated security panel - ATS2099</u>				
B	Supply	No	2		
C	Install	No	2		
	<u>ATS IP Kit</u>				
D	Supply	No	1		
E	Install	No	1		
	<u>System Bus (RS485) linked 8 Zone expansion module - ATS1211</u>				
F	Supply	No	3		
G	Install	No	3		
H	Include all cabling, power supplies, pc's, licences, cabinets etc to complete the access control & intruder alarm project.				SUM
Carried to Abstract					R

Bill No. 10
PART 2: SCHEDULE I: ACCESS CONTROL & INTRUDER ALARM
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PART 2: SCHEDULE I: ACCESS CONTROL & INTRUDER ALARM

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Bill No. 10

PART 2: SCHEDULE I: ACCESS CONTROL & INTRUDER ALARM

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PROVISIONAL BILLS OF QUANTITIES

Item No		Quantity	Rate	Amount
	<u>SECTION NO 01B - A</u>			
	<u>BILL NO 11</u>			
	<u>IT as per section 21 of Specification</u>			
	<u>Network Equipment</u>			
A	B5G124-48P2 Enterasys B5 with 48 x 10/100/1000 RJ45 PoE, 4 x Combo SFP	No	1	
B	MGBIC-LC01 Enterasys MGBIC-LC01 Multimode fiber with LC connector (up to 450 metres)	No	2	
C	MGBIC-LC09 Enterasys MGBIC-LC09 Singlemode fiber with LC connector (up to 10 kilometres)	No	2	
D	B3G124-48P Enterasys SecureStack B3 48 10/100/1000 Power-over-Ethernet ports	No	4	
E	RBT-4102-EU Enterasys RoamAbout AP 4102 for Europe	No	2	
	<u>INFRASTRUCTURE</u>			
	<u>Schedule A : Krone highway and highwire copper products</u>			
	<u>COPPER 10 Floor Cabling - ADC KRONE</u>			
F	CABLE CAT6a LSZH UTP (10G-A6TZ1-BLM2) - (Part Number - 6499 1 16200)	m	3,000	
G	PATCH PANEL COPPER10 NEW VERSION - (Part Number - 6527 1 74300)	No	5	
H	COPPER10 CAT 6 Patch Cord (2m 7ft) 568A - (Part Number - 6645 2 82007)	No	20	
J	COPPER10 CAT 6 Patch Cord (3m 10ft) 568A - (Part Number - 6645 2 82010)	No	15	
	Carried to Abstract			
	Bill No. 11 PART 2: SCHEDULE J: IT 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES			R

A	COPPER10 CAT 6 Patch Cord (5m 15ft) 568A - (Part Number - 6645 2 82015)	No	7		
B	OUTLET C6 UTP SMK1 Cu10 IVORY - (Part Number - 7080 1 06210)	No	25		
	<u>COPPER 10 BB Cabling from the MDF to the IDF cabinets - ADC KRONE</u>				
C	CABLE CAT6a LSZH UTP (10G-A6TZ1-BLM2) - (Part Number - 6499 1 16200)	m	80		
D	PATCH PANEL COPPER10 NEW VERSION - (Part Number - 6527 1 74300)	No	5		
E	COPPER10 CAT 6 Patch Cord (2m 7ft) 568A - (Part Number - 6645 2 82007)	No	10		
	<u>COPPER 10 BB Cabling from the MDF to the Server cabinets - ADC KRONE</u>				
F	CABLE CAT6a LSZH UTP (10G-A6TZ1-BLM2) - (Part Number - 6499 1 16200)	m	100		
G	PATCH PANEL COPPER10 NEW VERSION - (Part Number - 6527 1 74300)	No	2		
H	COPPER10 CAT 6 Patch Cord (2m 7ft) 568A - (Part Number - 6645 2 82007)	No	30		
	<u>Schedule B : Krone Fibre product - ADC KRONE</u>				
J	Fibre Panel Empty with three blanks - (Part Number - 7033 1 000-00)	No	2		
K	Fibre module ST 6 port simplex MM - (Part Number - 7033 1 094-01)	No	2		
L	Fibre module ST 6 port simplex SM - (Part Number - 7033 1 094-02)	No	2		
M	Fibre module LC 6 port duplex MM - (Part Number - 7033 1 095-01)	No	1		
N	Fibre module LC 6 port duplex SM - (Part Number - 7033 1 095-02)	No	1		
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Schedule B : Krone Fibre product - FibreWorx

A	FibreWorx HDD Corrugated Steel Tape Armoured (CST) (10/125) Loose Tube / 16.9mm / PE Sheath 12 Fibre - (Part Number - OF942)	m	180
B	FibreWorx Heavy Duty Duct CST (50/125) Loose Tube / 13.7mm / PE Sheath 12 Fibre - (Part Number - OF937)	m	150

Schedule B : Krone Fibre product - NETCON

C	Pigtail Unjacketed LC Multimode 1m - (Part Number - 3425PTUW01A001M)	No	6
D	Pigtail Unjacketed LC Single Mode 1m - (Part Number - 3428PTUW01C001M)	No	6
E	ST - MULTIMODE 1m ST UNJACKETED PIGTAIL - (Part Number - 3417PTUW01A001M)	No	6
F	ST - SINGLEMODE 1m ST UNJACKETED PIGTAIL - (Part Number - 3408PTUW01C001M)	No	6
G	LC - Single Mode 3m ST- LC DUPLEX PATCHCORD - (Part Number - 250828DJ02C003M)	No	12
H	LC - Multimode 3m ST-LC DUPLEX PATCHCORD - (Part Number - 351725DO02A001M)	No	12

OTHER - NETCON

J	ENTRY GLAND 13.5mm GREY - (Part Number - 23003PG13.5GRY)	No	6
K	TERMINATION BOX - LARGE - (Part Number - 22003L3902)	No	6
L	Heatshrink Splice protector - (Part Number - 72SPHSHRNK)	No	18
M	Lint Free Kimberley Wipes Box - (Part Number - 2101F34-155-12)	No	5
N	Isopropyle Alchohol Aerosol can - (Part Number - 2101F1-0007F)	No	5

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A	Fibre Warning Tag - (Part Number - 26FTAG)	No	5		
<u>Schedule C : Cable Routing</u>					
<u>General consumables - NETCONNECT</u>					
B	T18RBK Cable Tie - (Part Number - 29T18RBK)	No	20		
C	Velcro Wrap Strap(p/m) - (Part Number - 29TWRAPSTRAP)	No	10		
D	Insulation Tape White - (Part Number - 29INSTAPE-WH)	No	5		
E	Masking Tape - (Part Number - 29IMASK)	No	2		
F	Brother Label Cartridge 9mm BK/WH - (Part Number - 26PTZ221)	No	2		
G	9,4mm Heatshrink Clear - (Part Number - 2694HS-CL)	No	10		
<u>Schedule D : Modrack data network cabinets</u>					
<u>43U Floor Standing Cabinets - MODRAC</u>					
H	600 X 1000 Modrac - (Part Number - MOD-43U/6X1N)	No	2		
J	PANEL MOUNT 43 U - (Part Number - ZPM43)	No	2		
K	Cable Tray, 43U, 304mm wide - (Part Number - MOAC-43U304CT)	No	2		
L	10 Way SA standard PDU with 3 meters 1.5mm cabtyre hard wired - (Part Number - MOAC-10WPD/HW)	No	2		
M	650mm Deep Flat Shelf, upto 100kg - (Part Number - MOAC-650FS/100)	No	6		
N	Cage Nuts, screws & washers - Pack of 50 - (Part Number - MOAC-CAGE/50)	No	6		
P	75mm Castor - Lockable, for use from 20U to 47U - (Part Number - MOAC-CAS/L75)	No	8		
Q	4 Way Fan Unit - 48 Volt - (Part Number - MOAC-4WFU/48V)	No	2		
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<u>Telephone Outlet</u>					
A	Supply	No	5		
B	Install	No	5		
<u>25 port voice patch panel</u>					
C	Supply	No	1		
D	Install	No	1		
<u>50 port voice patch panel</u>					
E	Supply	No	1		
F	Install	No	1		
G	Terminations(Existing incoming 50 pair + 1No 20 pairs both ends including lines out of handsets)				SUM
H	System testing and commissioning				SUM
J	Provisional sum for CoCT Broadband contractor				SUM
K	Contractor's mark up			%	
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PART 2: SCHEDULE K: VOICE OVER IP PHONE SYSTEM
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PART 2: SCHEDULE K: VOICE OVER IP PHONE SYSTEM

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<u>Line Relay Units</u>					
A	Supply	No	17		
B	Install	No	17		
<u>1mm, 4-pair screened fire resistant cable PH120</u>					
C	Supply	m	1,200		
D	Install	m	1,200		
E	System testing & commissioning				SUM
F	Operation & Maintenance Manual including Client Training and tuition as per sections B1.33 & B1.34				SUM
G	Any other equipment required to complete the fire alarm installation				SUM
PA - See Section B5.5 of the Spec					
<u>Public address system, including speakers, wiring, attenuator, amplifier and microphone. See section B5.5 of the specification</u>					
H	1.) 6 Watt Clipp-in ceiling speaker 6inch Code PC-658R	No	25		
J	2.) Desktop paging microphone with DIN plug. Code PM-660D	No	1		
K	3.) 30w Attenuator. Code AT-303P	No	1		
L	4.) Back box for attenuator. Code YS-11A	No	1		
M	5.) 120w RMS/180w max 3 mic/2aux inputs master volume control	No	2		
N	6.) Include cabling, installation & commissioning to deliver a complete system				SUM
<u>Audio equipment for conference area to be TOA or similar approved. See section B5.5 of the specification. Equipment to consist of:</u>					
P	1. Wide-Dispersion Cabinet Speaker System 30W 100V. Code F-1300BT	No	4		
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Bill No. 13 PART 2: SCHEDULE L: FIRE ALARM & PA 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES					

A	2. 120w Mixer Amplifier 50-15 kHz (no muting of BGM) Code A-1712ER	No	1	SUM
B	3. Rack & Accessories	No	1	
C	4. Include cabling, installation & commissioning to deliver a complete system			SUM
D	Provision for removal and desposal of any fire detection devices and accessories on site			SUM
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PART 2: SCHEDULE L: FIRE ALARM & PA
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	<u>SECTION NO 01B - A</u>			
	<u>BILL NO 14</u>			
	<u>EXTRA SERVICES</u>			
A	Supply and install handdryers to following specification: 1. Hand dryer air rate: 30 litres/second 2. 15 second drying time 3. Swivelling nozzle 4. Stainless steel casing 5. SABS approved	No	8	
B	Supply and install industrial high pressure cold water cleaner at wash bay. 1. Flow rate: 380l/hr min 2. Operating pressure: 30-160bar 3. Maximum pressure: 190bar 4. Equal or similar approved to Karcher HD6/16-4 ST 5. Complete with pipes, lance and connections			SUM
C	Supply and install industrial vacuum cleaner at wash bay. 1. Airflow: 350 m3/h 2. Water lift: 2200 mm H2o 3. Tank capacity: 35l 4. Equal or similar approved to VORTEX 4HP Induction vacuum 5. Complete with 10m HP hose			SUM
D	Supply & install 1800 x 1200mm electrically operated viewing screen. Complete with push button control mounted at 1400mm AFFL.	No	1	
E	Video entry phone system between doors and reception on ground floor complete with link to access control for door release. Equal and approved to Aiphone KC-1MRD system	No	1	
F	Supply and install an overhead video projector complying to the following specifications complete with HDMI cable down to floorbox: 1. 3000 ANSI lumens 2. 1600:1 contrast 3. XGA 1024 x 768 4. DLP 5. lens ratio 1.8 - 2.16 6. Eco lamp model	No	1	
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	Bill No. 14 PART 2: SCHEDULE M: EXTRA SERVICES 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES			

<u>Entrance Booms</u>					
A	Supply	No	2		
B	Install	No	2		
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2	PART 2: SCHEDULE A: DISTRIBUTION BOARDS & GENERATOR	160	
3	PART 2: SCHEDULE B: CABLES, WIRING AND EARTH WIRE	165	
4	PART 2: SCHEDULE C: CONDUITS AND ACCESSORIES	170	
5	PART 2: SCHEDULE D: LIGHT FITTINGS	174	
6	PART 2: SCHEDULE E: LIGHT SWITCHES	175	
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8	PART 2: SCHEDULE G: ISOLATORS	181	
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10	PART 2: SCHEDULE I: ACCESS CONTROL & INTRUDER ALARM	190	
11	PART 2: SCHEDULE J: IT	196	
12	PART 2: SCHEDULE K: VOICE OVER IP PHONE SYSTEM	199	
13	PART 2: SCHEDULE L: FIRE ALARM & PA	203	
14	PART 2: SCHEDULE M: EXTRA SERVICES	206	
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		<u>SECTION NO 01B - B</u>				
		<u>BILL NO 1</u>				
		<u>SECTION 1: TRENCHING AND EXCAVATIONS</u>				
	DS11	<u>EXCAVATIONS:</u>				
		Excavation of cable trenches (450mm wide unless specified otherwise) to depths and in material conditions as classified below				
		These rates for trenching and excavations shall include for all shoring necessary for support and all pumping necessary to remove water from the trenches and excavations				
A		800mm deep trenches in Class 1 normal pickable soil (Soft rock and earth)	m ³	355		
B		800mm deep trenches in Class 2 difficult soil (Hard rock) with the aid of a compressor	m ³	100		
C		800mm deep trenches in Class 3 soil (Very hard rock) with the aid of blasting	m ³	25		
D		1000mm deep trenches in Class 1 normal pickable soil (Soft rock and earth)	m ³	55		
E		1000mm deep trenches in Class 2 difficult soil (Hard rock) with the aid of a compressor	m ³	15		
F		1000mm deep trenches in Class 3 soil (Very hard rock) with the aid of blasting	m ³	5		
		Carried to Abstract				
		Bill No. 1 SECTION 1 TRENCHING AND EXCAVATIONS 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES				
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A	Extra over for trenching through intermediate material (big boulders, calcrete etc. that is hard to loosen by pick or cannot be removed by shovel)	m ³	1	Rate Only
B	Extra over for trenching through concrete, paved and tarred road surfaces	m	1	Rate Only
C	Excavations of pilot holes and cross trenches to expose existing services including backfilling and compaction of trenches and reinstatement of trench surface	m	20	
D	Removal of waste material, handling cost included	m ³	270	
DS13	<p><u>PLACEMENT OF IMPORTED BEDDING AND BLANKET SAND:</u></p> <p>These rates shall include all transport cost and preparation of soil by removing stones and sharp objects (sifting through a 6mm mesh where required) and compaction of trench</p>			
E	Supply and placement of bedding sand in bottom of trench before installation of cable (layer of 100mm deep for full width of trench)	m ³	70	
F	Supply and placement of blanket sand on top of cable after installation of cable (blinding layer of 300mm deep for full width of trench)	m ³	200	
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	<p>Bill No. 1 SECTION 1 TRENCHING AND EXCAVATIONS 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES</p>			

		<p><u>BACKFILL OF TRENCH WITH ROUGH MATERIAL:</u></p> <p>These rates shall include preparation of rough excavated material by removing all stones and sharp objects with a size over 75mm and compaction of trenches in layers not exceeding 150 mm</p>			
A	DS13	<p>Backfilling with rough material and compaction and reinstatement of trench surface</p>	m ³	285	
		<p><u>PVC WARNING TAPE:</u></p> <p>Supply and install orange plastic warning sheet in trench 300mm above cables</p>	m	1,390	
		<p><u>REPAIRS AND REINSTATEMENT OF ROAD SURFACES:</u></p>			
C		<p>Repairs and Reinstatement of concrete and paved road surfaces</p>	m ²	5	
D		<p>Repairs and Reinstatement of tarred road surfaces</p>	m ²	5	
	DS10	<p><u>ROAD CROSSING SLEEVES:</u></p> <p><u>Supply and install Class 4 PVC sleeves complete with steel draw wire</u></p>			
E		75mmø	m	30	
F		110mmø	m	297	
G		160mmø	m	274	
		<p><u>DIRECTIONAL DRILLING AT ROAD CROSSINGS:</u></p>			
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		<p>Bill No. 1 SECTION 1 TRENCHING AND EXCAVATIONS 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES</p>			R

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		<u>SECTION NO 01B - B</u>				
		<u>BILL NO 2</u>				
		<u>SECTION 2: MINIATURE SUBSTATIONS AND RMU'S</u>				
	DS3	<u>TYPE C MINIATURE SUBSTATIONS:</u>				
		<u>Supply and install 11.66 kV/420 Volt, Dyn7, Type C, 3 phase miniature substations complete with MV switchgear (3-way SafeRing type CCF SF6 RMU) and an LV switch compartment (supply and installation of LV circuit breakers listed under separate item). Note: All miniature substations shall comply with the latest City of Cape Town specifications.</u>				
A		315kVA		SUM	Rate Only	
	DS3.1.6	<u>PRECAST CONCRETE PLINTH FOR MINIATURE SUBSTATION:</u>				
		<u>Supply and install pre-cast concrete plinth for miniature substations as per the latest City of Cape Town specifications including site preparation</u>				
B		Pre-cast concrete plinth for Type C miniature substations (200kVA to 800kVA)		SUM	Rate Only	
	DS14	<u>TESTING AND COMMISSION</u>				
C		Miniature substation testing and commissioning, per miniature substation		SUM	Rate Only	
D		MV pressure test of MV feeder cables		SUM	Rate Only	
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		Bill No. 2 SECTION 2: MINIATURE SUBSTATIONS AND R 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES				

		<u>SUBSTATION FENCING:</u>			
A		Supply and install 1.8m high Galvanized Steel Betafence fencing as per City of Cape Town specifications	m	1	Rate Only
B		Supply and install 0.8m wide, 1.8m high Galvanized Steel gate as per City of Cape Town specifications	No	1	Rate Only
C		Supply and install E1 kerbing blocks around the perimeter fence of substation yard	m	1	Rate Only
D		Supply and spread 100mm thick layer of 19mm crushed yard stone inside substation yard up to kerbing	m ³	1	Rate Only
DS3.8		<u>LABELS AND STATUTORY SAFETY SIGNAGE:</u>			
E		Supply and install miniature substation MV and LV engraved labels and warning signs as specified, per miniature substation			SUM Rate Only
F		Supply substation yard statutory safety and warning signage, per substation			SUM Rate Only
DS3.1.4		<u>TEMPORARY LOCKS:</u>			
G		Supply and fit temporary padlocks for miniature substations for protection against vandalism (and theft) until network is taken over by Supply Authority			SUM Rate Only
		Carried to Abstract			R
		Bill No. 2 SECTION 2: MINIATURE SUBSTATIONS AND R 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES			

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		<u>SECTION NO 01B - B</u>				
		<u>BILL NO 3</u>				
		<u>SECTION 3: MV CABLE NETWORK</u>				
	DS4.1	<u>MEDIUM VOLTAGE CABLES</u>				
		<u>Supply and install 3 core, 6.35/11kV paper insulated, individually copper taped screened, PVC bedded, galvanised steel wire armoured, PVC sheathed flame-retardant cable with water barrier (PILE 2H G DSTA 1 R) to SANS 97 Table 19, in prepared trenches or sleeves, to the most recent City of Cape Town specifications</u>				
A		120mm ² x 3 Core Aluminium	m	1		Rate Only
	DS4.1	<u>RELOCATE EXISTING LENGTHS OF MV CABLE:</u>				
		<u>Relocate existing excavated and de-energised MV cables from old route to new excavated trenches</u>				
B		120mm ² x 3 Core Aluminium	m	1		Rate Only
	DS4.3	<u>MV CABLE JOINT:</u>				
		<u>Jointing of MV cables including complete jointing kit with all accessories and compound</u>				
C		120mm ² x 3 Core Aluminium	No	1		Rate Only
	DS4.4	<u>MV CABLE TERMINATION:</u>				
		<u>Termination of MV cables including complete termination kit with all accessories (Type RICS 3 or similar approved)</u>				
D		120mm ² x 3 Core Aluminium	No	1		Rate Only
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SECTION 3: MV CABLE NETWORK

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		<u>SECTION NO 01B - B</u>				
		<u>BILL NO 4</u>				
		<u>SECTION 4: LV CABLE NETWORK</u>				
	DS5	<u>LV FEEDER CABLES:</u>				
		<u>Supply and install 2 and 4 core 600/1000V PVC PVC SWA PVC LV cables in prepared trenches</u>				
A		16mm ² x 4 core Copper	m	72		
B		25mm ² x 4 core Copper	m	1		Rate Only
C		35mm ² x 4 core Aluminium	m	24		
D		70mm ² x 4 core Aluminium	m	162		
E		120mm ² x 4 core Aluminium	m	1		
F		185mm ² x 4 core Aluminium	m	94		
	DS5	<u>LV CABLE JOINTS:</u>				
		<u>Jointing of LV cables including complete jointing kit with all accessories and compound</u>				
G		16mm ² x 4 core Copper	No	1		Rate Only
H		25mm ² x 4 core Copper	No	1		Rate Only
J		35mm ² x 4 core Aluminium	No	1		Rate Only
K		70mm ² x 4 core Aluminium	No	1		Rate Only
L		120mm ² x 4 core Aluminium	No	1		Rate Only
M		185mm ² x 4 core Aluminium	No	1		Rate Only
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DS5	<u>LV CABLE TERMINATIONS:</u>				
	<u>Termination of LV cables complete including all glands, lugs, nuts, bolts and washers</u>				
A	16mm ² x 4 core Copper	No	6		
B	25mm ² x 4 core Copper	No	1		Rate Only
C	35mm ² x 4 core Aluminium	No	2		
D	70mm ² x 4 core Aluminium	No	4		
E	120mm ² x 4 core Aluminium	No	2		Rate Only
F	185mm ² x 4 core Aluminium	No	2		
	<u>Supply and install ground mounted 12-Way, Dual Door 3CR12 stainless steel metering kiosks including all internal wiring, bus bars, DIN-rail mounted 5kA curve 1 single pole circuit breakers and accessories as specified. Kiosks must be prewired for split prepayment meters as specified by City of Cape Town. Note: Kiosk shall comply fully with drawings DR3169A sheet 1 and 2 as well as the latest City of Cape Town specifications.</u>				
G	6 Used with 60Amp mcb's	No	1		Rate Only
H	8 Used with 50Amp mcb's	No	1		Rate Only
J	10 Used with 50Amp mcb's	No	1		Rate Only
K	12 Used with 80Amp mcb's	No	1		
L	Fit and wire split prepayment meters supplied by City of Cape Town	No	1		Rate Only
M	Supply, fit and wire 40Amp DIN-rail mounted 5kA curve 1 single pole miniature circuit breaker	No	1		Rate Only
N	Supply, fit and wire 60Amp DIN-rail mounted 5kA curve 1 single pole miniature circuit breaker	No	1		Rate Only
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A	Supply, fit and wire 20Amp three pole miniature circuit breaker	No	1	Rate Only
B	Supply, fit and wire 40Amp three pole miniature circuit breaker	No	1	Rate Only
	<u>FUSE PILLAR BOX:</u>			
	<u>Supply and install ground mounted 3CR12 stainless steel fuse pillar boxes including all internal wiring and bus bars complete with four (4) HRC LV strip fuse switch disconnecter pillars of the "on-load switching" type as specified. Note: Fuse pillars shall comply fully with drawings SK3844 sheet 1 and 2 as well as the latest City of Cape Town specifications.</u>			
C	Fuse pillar box complete with 4x HRC LV strip-type fuse disconnecter pillars rated at 400A	No	1	
D	Supply and install 200Amp NH-2 LV HRC fuses	No	1	Rate Only
E	Supply and install 400Amp NH-2 LV HRC fuses	No	1	Rate Only
F	Supply, fit and wire HRC LV strip-type double break fuse switch disconnecter pillars of the "on-load switching" type rated at 400Amp	No	1	Rate Only
DS7.2	<u>STREETLIGHT CONTROL KIOSK:</u>			
	<u>Supply and install Streetlight Control Kiosk (6-Way Polyethylene Kiosk) complete including all internal wiring, bus bars and streetlight control gear as specified. Note: Kiosk shall comply fully with drawing DR3055 as well as the latest City of Cape Town specifications.</u>			
G	Ground mounted double door kiosk	No	1	
H	Pole mounted single door kiosk	No	1	
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A	Supply and install 2m long x 75mm diameter steel "kicker" pipe for cable routing from ground level to pole mounted box complete with stainless steel bandit straps	No	1	
DS6	<u>LABELS AND STATUTORY SAFETY SIGNAGE:</u>			
B	Supply and install engraved labels for each circuit breaker			SUM
C	Supply and install engraved labels for each feeder cable as specified			SUM
D	Supply kiosk safety and warning signage, for each kiosk			SUM
DS6	<u>TEMPORARY LOCKS:</u>			
E	Supply and fit temporary padlocks for kiosks and fuse pillar boxes for protection against vandalism and theft until network is taken over by Supply Authority	No	4	
	Carried to Abstract			R
	Bill No. 4 SECTION 4: LV CABLE NETWORK 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES			

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SECTION 4: LV CABLE NETWORK

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SECTION 4: LV CABLE NETWORK

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		<u>SECTION NO 01B - B</u>				
		<u>BILL NO 5</u>				
		<u>SECTION 5: SERVICE CONNECTIONS</u>				
		<u>SERVICE CONNECTION CABLES:</u>				
		<u>Supply and install 2 and 4 core 600/1000V PVC PVC SWA PVC LV cables in prepared trenches</u>				
A		10mm ² x 2 core Copper with 2x 1mm ² stranded pilot wires	m	1	Rate Only	
B		16mm ² x 2 core Copper with 2x 1mm ² stranded pilot wires	m	1	Rate Only	
C		Extend cable coil through 'kicker' pipe up to DB inside house on completion of house construction	No	1	Rate Only	
		<u>SERVICE CONNECTION CABLE JOINTS:</u>				
		<u>Jointing of service connection cables including complete jointing kit with all accessories and compound</u>				
D		10mm ² x 2 core Copper with 2x 1mm ² stranded pilot wires	No	1	Rate Only	
E		16mm ² x 2 core Copper with 2x 1mm ² stranded pilot wires	No	1	Rate Only	
		<u>SERVICE CONNECTION CABLE TERMINATIONS:</u>				
		<u>Termination of service connection cables complete including all glands, lugs, nuts, bolts and washers</u>				
F		10mm ² x 2 core Copper with 2x 1mm ² stranded pilot wires	No	1	Rate Only	
		Carried to Abstract				
		Bill No. 5 SECTION 5: SERVICE CONNECTIONS 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES				
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A	16mm ² x 2 core Copper with 2x 1mm ² stranded pilot wires	No	1	Rate Only
<u>CAP AND SEAL SERVICE CONNECTION CABLE ENDS:</u>				
<u>Supply and install heat shrink end caps for cables</u>				
B	10mm ² x 2 core Copper with 2x 1mm ² stranded pilot wires	No	1	Rate Only
C	16mm ² x 2 core Copper with 2x 1mm ² stranded pilot wires	No	1	Rate Only
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Bill No. 5 SECTION 5: SERVICE CONNECTIONS 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES				R

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SECTION 5: SERVICE CONNECTIONS

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SECTION 5: SERVICE CONNECTIONS

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Item No	SANS Pay Ref		Unit	Quantity	Rate	Amount
		<u>SECTION NO 01B - B</u>				
		<u>BILL NO 6</u>				
		<u>SECTION 6: STREET AND AREA LIGHTING</u>				
	DS7.3	<u>STREETLIGHT LUMINAIRES:</u>				
		<u>Supply, install and connect LED streetlight luminaires as specified. Luminaires shall comply with the latest City of Cape Town specifications.</u>				
A		LED-Lume MINI 20LED 37W 5345 or equivalent	No	24		
B		ZELA 24LED 55W post top Luminaire or equivalent	No	5		
	DS7.3	<u>STREETLIGHT POLES:</u>				
		<u>Supply and install galvanised steel pole complete with access opening cover, gland plate, back plate, 5kA circuit breakers, fuses and fuse holders, all internal wiring (red, black and green/yellow 2,5mm² x 1 core copper) and connections and base plate. Streetlight poles shall comply with the latest City of Cape Town specifications.</u>				
C		Galvanised steel pole - 7.2m total length (6m mounting height) as per drawing SL 37	No	24		
D		Galvanised steel pole - 5.2m total length (4m mounting height) as per drawing SL 37	No	5		
		Carried to Abstract				
		Bill No. 6 SECTION 6: STREET AND AREA LIGHTING 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES				
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1	SECTION 1 TRENCHING AND EXCAVATIONS	212	
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3	SECTION 3: MV CABLE NETWORK	218	
4	SECTION 4: LV CABLE NETWORK	223	
5	SECTION 5: SERVICE CONNECTIONS	226	
6	SECTION 6: STREET AND AREA LIGHTING	230	
7	SECTION 7 EARTHING	233	
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Item No		Quantity	Rate	Amount
	<u>SECTION NO 01C</u>			
	<u>BILL NO 2</u>			
	<u>2.ROOFTOP SOLAR INSTALLATION</u>			
	All related costs related for the complete installation of the 130kWp Rooftop Solar System as per the Contractor's Design in accordance with the Tender Specifications, drawings and CoCT Requirements.			
A	Installation of mounting structures and brackets incl. all mis. material such as bolts, nuts, etc. to mount the panels to the roofs indicated on the drawings			SUM
B	Photovoltaic Modules complete with connections, protection, mounting equipment, etc.	No	1	
C	Optimizers or micro-inverters (if applicable)	No	1	
D	6mm ² DC Strings between modules and inverter(s), complete with all terminations, MC4 connectors, protection fuses etc.			SUM
E	IP65 Enclosure with DC Isolation of the PV strings on the roofs			SUM
F	Galvanised Trunking and Conduiting for DC Strings on Roofs and sides of Buildings & Structures			SUM
	<u>3.HYBRID SOLAR INVERTER & BATTERIES</u>			
	All cost required for the supply and installation of the hybrid inverter and battery system as per the technical specification.			
G	≥100kW Total Hybrid Inverter(s) capacity complete with Isolation, mounting equipment, brackets etc.			SUM
H	≥300kWh Total Capacity (240kWh @ 80% DoD) LiFePO4 Battery with Battery Management System in enclosure			SUM
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A	DC Cabling between Inverter(s) and Battery system complete with protection fuses and isolation as per the contractor's design				SUM
B	DC Cabling Containment including cable trays and trunking inside the plant room as per the contractor's design				SUM
<u>4.HYBRID INVERTER CONNECTION</u>					
All cost required for the complete AC reticulation between the Inverter(s), Solar AC DB and Main DB as indicated on the drawings.					
C	Wall-mounted Solar Collector DB with lockable doors complete with all busbars, wiring, Surge Protection, Isolation, NRS-097 Centralised Disconnection Device, etc. as per the Contractor's design. Colour Orange, with Yellow cover plates.			Item	
D	AC Cabling Containment including cable trays and trunking inside the plant room as per the contractor's design				SUM
E	HO7RN 70mm ² Cu 4-Core Flexible trailing cable & 50mm ² Insulated Earth cable on wall-mounted cable tray between the Main DB and Solar DB	m		30	
F	Termination of LV cables in 4.3 complete including all lugs, nuts, bolts and washers	No		4	
G	AC Cabling & Earthing between Inverter(s) and Solar DB on cable tray or trunking complete with terminations as per the contractor's design.				SUM
<u>5.BALANCE OF PLANT</u>					
H	Power Plant Control with DNP3 RTU/Gateway for CoCT SCADA connectivity and interface				SUM
J	Monitoring and logging system complete with all connections and measuring points for online cloud-based monitoring				SUM
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A	ABB CM-UFD.M31 (or CoCT-approved equivalent) Grid Monitoring Relay in Solar DB with Grid reference in Main DB as Required with 230V Signal cabling to Centralised Disconnection Motorized Circuit Breakers as per the design proposal.			SUM
B	Fireman's Switch to Municipal specifications in location agreed with Fire Department for disconnection of the Battery Supply as specified			SUM
<u>6.EARTHING AND LIGHTNING PROTECTION</u>				
C	Earthing of all PV modules, structures and enclosures (incl. of down conductors and earth rods)		Item	
D	DC Surge Protection on PV Strings with Nominal Discharge Current $\geq 20\text{kA}$			SUM
E	1.5m Earth Rod bonded to Solar carport structure with 10mm ² Insulated Earth Wire	No	2	
F	Earthing of Inverters, Battery and Solar Distribution Board to SANS 10142 Part 1		Item	
<u>7.COMMISSIONING AND COMPLETION</u>				
G	Test and Commission complete works and CoCT SCADA Compatibility and issue COC for works		Item	
H	Engraved Labelling to NRS-097 on Solar DB, Main DB, Plant Room Entrance and Point of Supply		Item	
J	Maintenance manuals and As Built Drawings		Item	
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Bill No. 2 Sub-Total 2 - Supply, Installation & Commissioning of Equipment 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES				

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3	Sub-Total 3 - Operation & Maintenance of the Plant	240	-----
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Item No		Quantity	Rate	Amount
	<u>SECTION NO 01D - A</u>			
	<u>BILL NO 1</u>			
	<u>SECTION 1: DRAINAGE</u>			
	The bill of quantities must be read together with the tender specifications and drawings forming part of this tender			
	<u>DRAWINGS</u>			
	528-DWG-DRAIN-01-R0			
	528-DWG-DRAIN-04-R0			
	<u>EQUIPMENT SCHEDULE</u>			
	528-SCH-WATER-01-R0			
	<u>SPECIFICATIONS</u>			
	528-SCH-WATER-01-R0			
	<u>SECTION 1: GENERAL (REFER TO THE SPECIFICATIONS)</u>			
A	Item 6: Provide all scaffolding, lifting and plant equipment needed for the duration of the contract	Item		
B	Item 12: Provide all drawings as specified	Item		
C	Item 13: Provide operation and maintenance manuals as specified	Item		
D	Item 14: Provide maintenance and guarantee as specified	Item		
E	Item 20: Commissioning as specified and required	Item		
F	Item 21: Training as specified	Item		
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<u>Showers</u>					
A	Connection to shower drain outlet	No	5		
B	Dia 50mm 135° Bend (WBE52)	No	5		
C	Dia 50mm PVC pipe	m	28		
D	Dia 50mm PVC socket adaptors	No	12		
<u>Urinals</u>					
E	Connection to urinals	No	4		
F	P-trap	No	4		
G	Y-piece	No	2		
H	Dia 50mm PVC pipe	m	14		
J	Dia 50mm PVC socket adaptors	No	8		
K	Dia 50mm 135° Bend (WBE52)	No	4		
<u>WC</u>					
L	110mm 87,5° Access Heel Junction (SY42)	No	8		
M	110mm Pan connector (SG40)	No	8		
N	110mm Stubstack (1m high)	No	8		
P	110mm 45° Access junction (UYAR 41/42)	No	8		
Q	110mm 45° Plain Junction	No	8		
R	110mm PVC Pipes (SLE420)	m	35		
<u>TRAPS ETC</u>					
S	110mm uPVC two-way vent valve boxed (SAV110)	No	6		
T	110 x 110mm "P" trap to gulleys (UGB40)	No	6		
U	150 x 110mm Gulley Head & Grate (UGA40)	No	6		
Carried to Abstract					
Bill No. 2 SECTION 2; SANITARY DRAINAGE 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES				R	

<u>Sundries</u>				
A	Wirediameterballoon grating in top of pipe not exceeding 100mm	No	6	
<u>Testing</u>				
B	Testing waste pipe system			SUM
<u>GUARD HOUSE</u>				
<u>Wash hand basins and sinks</u>				
C	Connection to whb/sink outlet	No	2	
D	P-trap	No	2	
E	Y-piece	No	1	
F	Dia 50mm PVC pipe	m	10	
G	Dia 50mm PVC socket adaptors	No	4	
H	Dia 50mm 135° Bend (WBE52)	No	2	
<u>Urinals</u>				
J	Connection to urinal	No	1	
K	P-trap	No	1	
L	Y-piece	No	1	
M	Dia 50mm PVC pipe	m	4	
N	Dia 50mm PVC socket adaptors	No	2	
P	Dia 50mm 135° Bend (WBE52)	No	1	
<u>WC</u>				
Q	110mm 87,5° Access Heel Junction (SY42)	No	1	
R	110mm Pan connector (SG40)	No	1	
S	110mm Stubstack (1m high)	No	1	
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**CONSTRUCTION OF NEW NOORDHOEK SATELLITE DEPOT
ERF 17949 FISH HOEK**

A	110mm 45° Access junction (UYAR 41/42)	No	1		
B	110mm 45° Plain Junction	No	1		
C	110mm PVC Pipes (SLE420)	m	5		
<u>TRAPS ETC</u>					
D	110mm uPVC two-way vent valve boxed (SAV110)	No	1		
E	110 x 110mm "P" trap to gulleys (UGB40)	No	1		
F	150 x 110mm Gulley Head & Grate (UGA40)	No	1		
<u>Sundries</u>					
G	Wire balloon grating in top of pipe not exceeding 100mm diameter	No	1		
<u>Testing</u>					
H	Testing waste pipe system			SUM	
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Bill No. 2

SECTION 2; SANITARY DRAINAGE

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A	Item 14: Provide maintenance and guarantee as specified		SUM	
B	Item 20: Commissioning as specified and required		SUM	
C	Item 21: Training as specified		SUM	
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Bill No. 1

SECTION 1: GENERAL

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SECTION 1: GENERAL

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	<u>SECTION NO 01D - B</u>			
	<u>BILL NO 2</u>			
	<u>SECTION 2: FIRE WATER PIPING</u>			
	<u>Supply and install - Supply and install galvanised steel piping to ASTM A795, complete with clambon fittings, screw connectors, flanged connections</u>			
A	∅ 25mm Piping	m	20	
B	∅ 32mm Piping	m	10	
C	∅ 40mm Piping	m		
D	∅ 50mm Piping	m		
E	∅ 80mm Piping	m		
F	∅ 100mm Piping	m		
	<u>PVC sleeves for piping through walls, etc. For the following pipe sizes</u>			
G	∅ 25mm	m	1	
H	∅ 32mm	m	1	
J	∅ 40mm	m		
K	∅ 50mm	m		
L	∅ 80mm	m		
M	∅ 100mm	m		
	<u>Supply and install item: Pipe fittings</u>			
N	Elbow 90°, ∅ 25mm	No	20	
P	Elbow 90°, ∅ 32mm	No	10	
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A	Elbow 90°, ø 40mm	No			
B	Elbow 90°, ø 50mm	No			
C	Elbow 90°, ø 80mm	No			
D	Elbow 90°, ø 100mm	No			
E	T-piece ø 25.25.25 mm	No	4		
F	T-piece ø 32.32.32 mm	No	1		
G	T-piece ø 40.40.40 mm	No			
H	T-piece ø 80.80.80 mm	No			
J	T-piece ø 100.100.100 mm	No			
K	T-piece ø 150.150.150 mm	No			
L	T-piece ø 150.100.150 mm	No			
M	T-piece ø 100.80.100 mm	No			
N	T-piece ø 100.40.100 mm	No			
P	T-piece ø 100.32.100 mm	No			
Q	Reducer ø 150.100 mm	No			
R	Reducer ø 100.50 mm	No			
S	Reducer ø 50.40 mm	No			
T	Reducer ø 40.32 mm	No	1		
U	Reducer ø 40.25 mm	No	2		
V	Reducer ø 32.25 mm	No	2		
W	Shutt off valve, ø 25mm	No	4		
X	Painting - etch coat, undercoat and two coats colour red of galvanised steel piping	m ²	4		
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SECTION 2: FIRE WATER PIPING

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SECTION 2: FIRE WATER PIPING

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	<u>SECTION NO 01D - B</u>			
	<u>BILL NO 4</u>			
	<u>SECTION 4: FIRE EXTINGUISHERS</u>			
	<u>Fire extinguishers</u>			
A	Supply of 4.5 kg DCP fire extinguishers	No	5	
B	Supply and mounting of 4.5 kg DCP fire extinguisher backing boards and brackets	No	5	
C	Supply of 9 kg DCP fire extinguisher	No	9	
D	Supply and mounting of 9 kg DCP fire extinguisher backing boards and brackets	No	9	
E	Supply of 9 liter Lith-Ex fire extinguisher	No	2	
F	Supply and mounting of 9 kg DCP fire extinguisher backing boards and brackets	No	2	
G	Fire Extinguisher Hinged Door cabinet - fibreglass wall hung for 9 kg	No	2	
H	Fire Extinguisher Hinged Door cabinet - fibreglass wall hung for 2 x 9 kg	No	4	
J	Storage of existing extinguishers to be re-used	No		
K	Service existing extinguishers to be re-used	No		
L	Install new backing boards for existing extinguishers	No		
M	Allowance for additional extinguishers. Scope of work and rates to be agreed with engineer			SUM
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	SECTION 4: FIRE EXTINGUISHERS			
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Item No		Quantity	Rate	Amount
	<u>SECTION NO 01D - B</u>			
	<u>BILL NO 5</u>			
	<u>Section 5: Signage</u>			
	<u>Supply and install photoluminated general escape signage as specified and in positions as indicated on the drawings, all framed in aluminium, size 190x190mm:</u>			
A	Cable hung E1 type; complete with 2x3,5m of cable and fixing mechanisms ,ceiling and sign side	No		
B	Cable hung E2 type; complete with 2x3,5m of cable and fixing mechanisms ,ceiling and sign side	No		
C	Wall mounted E1 type	No	6	
D	Wall mounted E2 type	No	5	
E	Wall mounted E3 type	No	7	
F	Lift signage	No		
G	Level"x" signage	No		
H	Refuge signage	No		
	<u>Supply and install electrically iluminated general escape signage as specified and in positions as indicated on the drawings, all framed in aluminium, size 190x380mm:</u>			
J	Wall mounted E6 type	No	1	
	<u>Supply and install photoluminated fire equipment indication signage as specified and in positions as indicated on the drawings:</u>			
K	Wall mounted F1, size 190x760, complete with aluminium frame	No		
L	Wall mounted F4, size 190x570, complete with aluminium frame	No	4	
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A	Wall mounted F13, size 190x380, complete with aluminium frame	No	7	
B	Wall mounted F15, size 190x380, complete with aluminium frame	No		
C	External mounted F46 sign on all fire escape doors indicating fire escape door; framed	No	5	
D	Free standing assembly point sign, complete with 75mm galvanised mounting pole, installed in position in concrete base 500x500x500 deep	No	1	
E	Signage indicating fireman's switch	No	2	
F	Additional signage required as directed by the engineer			SUM
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SECTION 5: SIGNAGE

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SECTION 5: SIGNAGE

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Item No		Quantity	Rate	Amount
	<u>SECTION NO 01D - B</u>			
	<u>BILL NO 7</u>			
	<u>SECTION 7: FIRE DETECTION</u>			
	<u>Main Fire Panel</u>			
A	Supply, Install and commission a Ziton ZP2-F2 Fire Panel: Two Loop addressable panel,.	No	1	
B	Supply and install ZP2-LB addressable fire panel accessory - Loop expansion printed circuit board (2 Additional Loops)	No	1	
C	BS131N Sealed Lead-Acid Battery - 12 volt sealed lead acid - 18Ah - VdS approved (24 hour back up and 30 minutes under full alarm load)	No	1	
D	20 Zone fire/fault LED indicator board	No	1	
E	100 Base T network card for future LAN connection	No	1	
F	Supply, install, commission GPRS system; type G-TX alarm communication panel, complete with 24 hr Back up power supply	No	1	
	<u>Smoke, heat and flame detectors</u>			
G	Ziton type ZP730-2 addressable optical smoke detectors	No	28	
H	Ziton ZP720-3P addressable thermal heat detector	No		
J	Ziton ZX832-3P addressable multi sensor detector (smoke/heat)	No	16	
K	Ziton type ZP7-SB1 surface mounted base	No	28	
L	Ziton type ZP7-IB2-P detector isolator base	No	3	
M	LED Remote indicator light red for Void Detectors	No	13	
N	Supply and Install, Technoswitch Flamespec IR3 Flame detector, c/w 24VDC power supply and 24hr back up batteries.	No	1	
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	SECTION 7: FIRE DETECTION			
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<u>Sirens/ Strobe</u>					
A	Ziton ZP755-HAV-2R (Red) addressable sounder with flash strobe	No	20		
B	Ziton ZP755BV-4P, addressable base sounder, with visual indication. (Polar white)	No	20		
C	Ziton ZP755V-P (Polar white) Addressable Visual Indicator	No			
D	Environmental Sound pressure level testing			SUM	
E	Installation Sound pressure level testing			SUM	
<u>Manual call points</u>					
F	Ziton ZP785-3 addressable manual call points	No	18		
G	DMN782 Hinged cover	No	18		
H	DM715 Replacement Call Point Glass	No	18		
<u>Programmable relays (c/w enclosures)</u>					
J	Ziton programmable relay for access control interface	No	5		
K	Ziton programmable relay for signaling AC-DB's to switch off	No	3		
L	Ziton programmable relay for interfacing with flame detector	No	2		
M	Ziton programmable relay for signaling Smoke Extraction Fans	No			
N	Ziton programmable relay for signaling hold open devices	No			
P	Ziton programmable relay for signaling Lift to home to ground	No			
Q	Ziton programmable relay for Local Alarm and fault indication on Fire Panel when Emergency Escape Doors Open (incl power supply, contact, local buzzer)	No			
<u>Cabling and Conduiting</u>					
R	BS50200 PH30 type cable (Fire resistant) 2 core, twist 1.5mm ²	m	2,000		
S	Medium50mm Duty Wire Mesh Cable Tray (50x50 pitch) width 50mm, height	m	100		
Carried to Abstract				R	
Bill No. 7 SECTION 7: FIRE DETECTION 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES					

**CONSTRUCTION OF NEW NOORDHOEK SATELLITE DEPOT
ERF 17949 FISH HOEK**

A	PVC Conduit 25mm	m	500		
B	Bosal Conduit 25mm	m	20		
C	Flexible PVC conduit 25mm	m	30		
D	PVC ø 60mm conduit box for ø 25mm conduit Side Entry 1, 2 way thru, 2 way angle etc.	No	150		
E	Bosal ø 60mm conduit box for ø 25mm conduit Side Entry 1, 2 way thru, 2 way angle etc.	No	10		
F	Bosal saddles (Hospital Saddle for wall mount / Strap saddle in roof)	No	700		
G	Consumables such as screws, sealant, etc.				SUM
H	Allowance for additional accessories and alternative route usage due to site limitations				SUM
	<u>System programming</u>				
J	Programming of Fire Detection System, to incorporate the cause and effect diagram and zoning provided by engineer				SUM
K	System testing witnessed by the Engineer				SUM
	<u>Logbook</u>				
L	A log book to be Installed in a holder and installed adjacent to master fire panel	No			
	<u>Block Plan</u>				
M	Provide zone diagrams and associated signage, laminated and framed behind glass, adjacent to fire panel	No	1		
Carried to Abstract					R
Bill No. 7 SECTION 7: FIRE DETECTION 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES					

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SECTION 7: FIRE DETECTION

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SECTION 7: FIRE DETECTION

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	<u>SECTION 1 - GENERAL</u>			
	The bill of quantities must be read together with the tender specifications and drawings forming part of this tender			
	<u>DRAWINGS</u>			
	528-DWG-HVAC-01-R0: ADMIN BUILDING GROUND STOREY HVAC PLAN			
	528-DWG-HVAC-02-R0: ADMIN BUILDING HVAC LAYOUT: SECTIONS AND ELEVATIONS			
	528-DWG-HVAC-03-R0: TRUCK PORT AND WORKSHOP HVAC LAYOUT			
	528-DWG-HVAC-05-R0: GUARD HOUSE AND REFUSE HVAC LAYOUT			
	<u>EQUIPMENT SCHEDULE</u>			
	528-SCH-HVAC-01-R0			
	<u>SPECIFICATIONS</u>			
	528-SPEC-HVAC-01-R0			
	<u>SECTION 1: GENERAL (REFER TO THE SPECIFICATIONS)</u>			
A	Item 4: Provide a program: Submit time schedules for each activity as specified	Item		
B	Item 6: Provide all scaffolding, lifting and plant equipment needed for the duration of the contract	Item		
C	Item 12: Provide all as built drawings as specified	Item		
D	Item 13: Provide operation and maintenance manuals as specified	Item		
	Carried to Abstract		R	
	Bill No. 1 SECTION 1 GENERAL 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES			

A	Item 14: Provide maintenance and guarantee as specified	Item		
B	Item 20: Commissioning as specified and required	Item		
C	Item 21: Training as specified	Item		
Carried to Abstract			R	

Bill No. 1
SECTION 1 GENERAL
176Q/2023/24
PROVISIONAL BILLS OF QUANTITIES

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Bill No. 1

SECTION 1 GENERAL

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SECTION 1 GENERAL

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PROVISIONAL BILLS OF QUANTITIES

A	Transformation piece from 350x300 to 350x250	No	1	
B	Ducting, galvanised sheet metal, 350x250	m	2	
C	Transformation piece (Shoe) 350x250 to 150x200	No	1	
D	Ducting, galvanised sheet metal, 150x200	m	3	
E	Transformation piece from 150x200 to Ø150	No	1	
F	Ducting, galvanised sheet metal, Ø150	m	7	
G	90° Bend Ø150	No	1	
H	Transformation piece from 350x250to 350x200	No	1	
J	Ducting, galvanised sheet metal, 350x200	m	5	
K	Transformation piece (Shoe) 350x200 to 150x200	No	1	
L	Ducting, galvanised sheet metal, 150x200	m	2	
M	Transformation piece from 150x200 to Ø150	No	1	
N	Ducting, galvanised sheet metal, Ø150	m	4	
P	90° Bend Ø150	No	1	
Q	Transformation piece from 350x200to 200x300	No	1	
R	Ducting, galvanised sheet metal, 200x300	m	5	
S	90° Bend 200x300 c/w internal vanes	No	1	
T	Transformation piece from 200x300 to Ø200	No	1	
U	Ducting, galvanised sheet metal, Ø200	m	6	
V	90° Bend Ø200	No	1	
W	Acoustic Flexible duct, 25mm Fibre glass insulation blanket with outer vapour barrier, Ø150	m	14	
X	Acoustic Flexible duct, 25mm Fibre glass insulation blanket with outer vapour barrier, Ø200	m	3	
Carried to Abstract				
Bill No. 2 SECTION 2 - VENTILATION AIR SYSTEM 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES				R

<u>Supply air diffusers / grilles</u>					
A	SAD-01 (CCD, MC Ø150)	No	9		
B	SAD-02 (CCD, MC Ø200)	No	2		
<u>Manual Volume Control Damper</u>					
C	N/A	No			
<u>Weather Louvre</u>					
D	N/A	No			
<u>FAF-02</u>					
The duty of each fan has been indicated on the Equipment schedule in Annexure B					
E	Ducting, galvanised sheet metal, 900x300, c/w wiremesh	No	1		
F	Filterbox, 1 off washable panel filter 595x295 + 1 off washable panel filter 295x295 c/w clips, neoprene sealer, frame, side access	No	1		
G	Transformation piece from filterbox to 600x350	No	1		
H	Flexible connection between attenuator and transformation piece- suction side	No	1		
J	Trox XS-F/600x350x750/4x100/P Attenuator,Size 600Wx350Hx750L, suction side, complete with mounting brackets	No	1		
K	Fan, FAF-02,Centrifugal Low Pressure fan, ILT/4-315 complete with anti-vibration mounting brackets flanged and hard connection to attenuators	No	1		
L	Variable speed drive to be included for FAF-02	No	1		
M	Trox XS-F/600x350x750/4x100/P Attenuator,Size 600Wx350Hx750L, suction side, complete with mounting brackets	No	1		
N	Flexible connection between attenuator and Ducting	No	1		
Carried to Abstract					
Bill No. 2 SECTION 2 - VENTILATION AIR SYSTEM 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES					R

<u>Ducting, galvanied sheet metal, uninsulated</u>				
Sheetmetal ductwork shall be manufactured in accordance with SANS 1238, and installed, balanced and tested as set out in SANS 10173.				
A	Transformation piece from Attenuator to Ducting size 400x300	No	1	
B	Ducting, galvanised sheet metal, 400x300	m	4	
C	90° Bend 400x300 c/w internal vanes	No	1	
D	Transformation piece from 400x300to 300x250	No	1	
E	Ducting, galvanised sheet metal, 300x250	m	4	
F	Transformation piece from 300x250to 250x200	No	1	
G	Ducting, galvanised sheet metal, 250x200	m	8	
H	90° Bend 250x200 c/w internal vanes	No	1	
J	Ducting, galvanised sheet metal, Ø250	m	4	
K	Ducting, galvanised sheet metal, Ø150	m	3	
L	Acoustic Flexible duct, 25mm Fibre glass insulation blanket with outer vapour barrier, Ø150	No	5	
M	Acoustic Flexible duct, 25mm Fibre glass insulation blanket with outer vapour barrier, Ø200	m	3	
N	Supply air diffusers / grilles SAD-01 (CCD, MC Ø150)	No	3	
P	SAD-03 (CCD, MC Ø250)	No	2	
Q	Manual Volume Control Damper N/A	No	1	
R	Weather Louvre N/A	No	1	
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Bill No. 2 SECTION 2 - VENTILATION AIR SYSTEM 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES				

FAF-03

The duty of each fan has been indicated on the Equipment schedule in Annexure B

A	Plenum box for WL-01 1200x300 (300mm Deep)	No	1
B	Filterbox, 2 off washable panel filter 595x295 c/w clips, neoprene sealer, frame, side access	No	1
C	Flexible connection between attenuator and Filterbox suction side.	No	1
D	TROX CK/315x500/100-100 Attenuator, Size Ø315x500L, suction side, complete with mounting brackets	No	1
E	Fan, FAF-03, APG0312AA5/6 complete with anti-vibration mounting brackets flanged and hard connection to attenuators	No	1
F	Variable speed drive to be included for FAF-03	No	1
G	TROX CK/315x1500/100-100 Attenuator, Size Ø315x1500L, suction side, complete with mounting brackets	No	1
H	Flexible connection between attenuator and Ducting	No	1

Ducting, galvanied sheet metal, uninsulated

Sheetmetal ductwork shall be manufactured in accordance with SANS 1238, and installed, balanced and tested as set out in SANS 10173.

J	Transformation piece: Ø315 to Ø450	No	1
K	Ducting, galvanised sheet metal, Ø450	m	6
L	90° Bend Ø450	No	1
M	Transformation piece: Ø450 to Ø300	No	1
N	Ducting, galvanised sheet metal, Ø300	m	2

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Bill No. 2
SECTION 2 - VENTILATION AIR SYSTEM
176Q/2023/24
PROVISIONAL BILLS OF QUANTITIES

	<u>Supply air diffusers / grilles</u>				
A	SAG-01 (300x250), Double Deflection, c/w OBD and 200mm Spigot	No	6		
	<u>Manual Volume Control Damper</u>				
B	N/A	No			
	<u>Weather Louvre</u>				
C	WL-01 1200x300	No	1		
	<u>FAF-04</u>				
	The duty of each fan has been indicated on the Equipment schedule in Annexure B				
D	Plenum box for WL-03 300x300 (300mm Deep)	No	1		
E	Filterbox, 1 off washable panel filter 295x295c/w clips, neoprene sealer, frame, side access	No	1		
F	Transformation piece:square to round from 300x300 to Ø200	No	1		
G	Flexible connection between attenuator and ducting suction side.	No	1		
H	Fan, FAF-04, TD 800/200 SIL complete with anti-vibration mounting brackets flanged and hard connection to attenuators	No	1		
J	Variable speed drive to be included for FAF-04	No	1		
K	Flexible connection between attenuator and Ducting	No	1		
	<u>Ducting, galvanied sheet metal, uninsulated</u>				
	Sheetmetal ductwork shall be manufactured in accordance with SANS 1238, and installed, balanced and tested as set out in SANS 10173.				
L	Ducting, galvanised sheet metal, Ø200	m	3		
M	90° Bend Ø200	No	1		
	Carried to Abstract				R
	Bill No. 2 SECTION 2 - VENTILATION AIR SYSTEM 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES				

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SECTION 2 - VENTILATION AIR SYSTEM

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SECTION 2 - VENTILATION AIR SYSTEM

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PROVISIONAL BILLS OF QUANTITIES

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	<u>SECTION 3 - EXTRACT AIR SYSTEMS</u>			
	The bill of quantities must be read together with the tender specifications and drawings forming part of this tender			
	<u>DRAWINGS</u>			
	528-DWG-HVAC-01-R0: ADMIN BUILDING GROUND STOREY HVAC PLAN			
	528-DWG-HVAC-02-R0: ADMIN BUILDING HVAC LAYOUT: SECTIONS AND ELEVATIONS			
	528-DWG-HVAC-03-R0: TRUCK PORT AND WORKSHOP HVAC LAYOUT			
	528-DWG-HVAC-05-R0: GUARD HOUSE AND REFUSE HVAC LAYOUT			
	<u>EQUIPMENT SCHEDULE</u>			
	528-SCH-HVAC-01-R0			
	<u>SPECIFICATIONS</u>			
	528-SPEC-HVAC-01-R0			
	<u>SECTION 3: EXTRACT VENTILATION</u>			
	<u>EAF-01 (Bathroom Ventilation)</u>			
A	Wire mesh screen (Ø350 duct at 45 degree)	No	1	
B	Ducting, galvanised sheet metal, Ø350	m	1	
C	Flexible connection between attenuator and ducting discharge side.	No	1	
D	AMS P2-035 Podded Attenuator, Size Ø355x600L, Discharge side, complete with mounting brackets	No	1	
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	Bill No. 3 SECTION 3 - EXTRACT AIR SYSTEMS 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES			
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Ducting, galvanised sheet metal, uninsulated

Sheetmetal ductwork shall be manufactured in accordance with SANS 1238, and installed, balanced and tested as set out in SANS 10173.

A	Transformation piece, round to square from Ø350 to 400x250	No	1
B	Ducting, galvanised sheet metal, 400x250	m	4
C	Transformation piece from (Shoe) 400x250 to 350x250	No	1
D	Ducting, galvanised sheet metal, 350x250	m	2
E	Transformation piece from 350x250 to 200x250	No	1
F	Ducting, galvanised sheet metal, 250x200	m	3
G	Transformation piece from (Shoe) 400x250 to 150x250	No	1
H	Transformation piece from (Shoe) 350x250 to 150x250	No	1
J	Transformation piece from (Shoe) 200x250 to 150x250	No	1
K	Ducting, galvanised sheet metal, 150x250	m	6
L	90° Bend 150x250	No	1
M	Ducting, galvanised sheet metal, Ø200	m	4
N	90° Bend Ø200	No	1
P	Acoustic Flexible duct, 25mm Fibre glass insulation blanket with outer vapour barrier, Ø200	m	11
<u>Extract air diffusers / grilles</u>			
Q	EAV-01 (Ø200,LVS)	No	7

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Bill No. 3
SECTION 3 - EXTRACT AIR SYSTEMS
176Q/2023/24
PROVISIONAL BILLS OF QUANTITIES

EAF-04 (Exhaust Ventilation)

The duty of each fan has been indicated on the Equipment schedule in Annexure B

A Fan, EAF-04, Silent 300, unit and wall sleeve, complete with mounting hardware.

No

1

Weather Louvre

B WL-04 (157x157)

No

1

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Bill No. 3
SECTION 3 - EXTRACT AIR SYSTEMS
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SECTION 3 - EXTRACT AIR SYSTEMS

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Bill No. 3

SECTION 3 - EXTRACT AIR SYSTEMS

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VRF-01: Refrigerant Piping and miscellaneous items

Refrigerant Piping

Refrigerant Piping lengths and routes to be confirmed on site, contractor to provide a drawing of suggested routes

A	6.35(1/4")	m	45	
B	9.52(3/8")	m	50	
C	12.7(1/2")	m	55	
D	15.88(5/8")	m	35	
E	19.05(3/4")	m	15	
F	28.58(1 1/8")	m	10	

Refnet (Y-Joint)

Refnets to be installed according to Samsung's installation manuals, minimum straight lengths before and after the joint, correct vertical or horizontal alignments

G	MXJ-YA1509M	No	4	
H	MXJ-YA2512M	No	4	

Additional Cost

J	Bluechem treatment to condensor coils of all units			SUM
K	Condensing unit galvanised steel cage complete			SUM

Condensate drain piping

L	Supply and install all condensate drain pipes between indoor units and drain connections all as specified; P-trap at all units			SUM
---	--	--	--	-----

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Bill No. 4
SECTION 4 - VRF (DMV) EQUIPMENT
176Q/2023/24
PROVISIONAL BILLS OF QUANTITIES

Transport and Rigging

A Transport/ Delivery of Condensing Unit and Indoors units to site

SUM

B Rigging and Moving Condensing Unit into place

SUM

Commissioning and Certification

C Supply Certificate of compliance for the VRF system. To be issued by a representative of Samsung

SUM

D Commissioning of units done by a qualified Samsung technician

SUM

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Bill No. 4
SECTION 4 - VRF (DMV) EQUIPMENT
176Q/2023/24
PROVISIONAL BILLS OF QUANTITIES

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Bill No. 4

SECTION 4 - VRF (DMV) EQUIPMENT

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Bill No. 4

SECTION 4 - VRF (DMV) EQUIPMENT

176Q/2023/24

PROVISIONAL BILLS OF QUANTITIES

A	Wall Mounted Controller, to be mounted at specified location	No	2		
B	Stainless steel drip tray to be mounted underneath unit, complete with mounting brackets, 50mm drainage piping and insulation to prevent condensation build up				SUM
C	Condensing unit galvanised steel cage complete				SUM
	<u>Condensate drain piping</u>				
D	Supply and install all condensate drain pipes between indoor unit and drain connections all as specified; P-trap at all units				SUM
	<u>Transport and Rigging</u>				
E	Transport/ Delivery of Condensing Unit and Indoors units to site				SUM
	<u>Commissioning and Certification</u>				
F	Supply Certificate of compliance installation.				SUM
	<u>AC-11</u>				
G	AC-11, Midwall inverter split unit 5,2kW , Supply, install and commission indoor unit, complete As specified CU-03, Supply, install and commission Outdoor unit, Complete with unistrut mounting brackets and Anti-vibration mounts.				SUM
	<u>Additional Cost</u>				
H	Bluechem treatment to condensor coils of all units				SUM
J	Wall Mounted Controller, to be mounted at specified location	No	2		
K	Stainless steel drip tray to be mounted underneath unit, complete with mounting brackets, 50mm drainage piping and insulation to prevent condensation build up				SUM
L	Condensing unit galvanised steel cage complete				SUM
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	Bill No. 5 SECTION 5 - DX SPLIT UNIT 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES				

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Bill No. 5

SECTION 5 - DX SPLIT UNIT

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Bill No. 5

SECTION 5 - DX SPLIT UNIT

176Q/2023/24

PROVISIONAL BILLS OF QUANTITIES

Item No		Quantity	Rate	Amount
	<p><u>SECTION NO 01D - C</u></p> <p><u>SECTION 6 - SOUND CONTROL EQUIPMENT</u></p> <p>The bill of quantities must be read together with the tender specifications and drawings forming part of this tender</p> <p><u>DRAWINGS</u></p> <p>528-DWG-HVAC-01-R0: ADMIN BUILDING GROUND STOREY HVAC PLAN</p> <p>528-DWG-HVAC-02-R0: ADMIN BUILDING HVAC LAYOUT: SECTIONS AND ELEVATIONS</p> <p>528-DWG-HVAC-03-R0: TRUCK PORT AND WORKSHOP HVAC LAYOUT</p> <p>528-DWG-HVAC-05-R0: GUARD HOUSE AND REFUSE HVAC LAYOUT</p> <p><u>EQUIPMENT SCHEDULE</u></p> <p>528-SCH-HVAC-01-R0</p> <p><u>SPECIFICATIONS</u></p> <p>528-SPEC-HVAC-01-R0</p> <p><u>SECTION 7: ELECTRICAL INSTALLATION</u></p> <p>A Certificate of compliance on completion of the installation</p> <p>NOTE: Electrical Contractor to install power supply & isolators to all condensing units, with conduits, draw-wires and junction boxes</p> <p>NOTE: Electrical Contractor to install power supply & isolators to all indoor units of VRF system within 1 meter of unit, with conduits, draw-wires and junction boxes</p> <p>NOTE: Electrical Contractor to install power supply & isolators within 1m of fan. DB mounted electronic timer to be installed for switching fans ON/OFF</p> <p style="text-align: right;">Carried Forward to Summary of Section No.</p> <p>Bill No. 7 SECTION 7 - ELECTRICAL INSTALLATION 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES</p>			
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3	SECTION 3 - EXTRACT AIR SYSTEMS	285	
4	SECTION 4 - VRF (DMV) EQUIPMENT	290	
5	SECTION 5 - DX SPLIT UNIT	295	
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7	SECTION 7 - ELECTRICAL INSTALLATION	297	
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	<u>SECTION NO 01D - D</u>			
	<u>SECTION 1: GENERAL</u>			
	The bill of quantities must be read together with the tender specifications and drawings forming part of this tender			
	<u>DRAWINGS</u>			
	528-DWG-WATER-01-R0			
	528-DWG-WATER-03-R0			
	528-DWG-WATER-05-R0			
	<u>EQUIPMENT SCHEDULE</u>			
	528-SCH-WATER-01-R0			
	<u>SPECIFICATIONS</u>			
	528-SPEC-WATER-01-R0			
	<u>SECTION 1: GENERAL (REFER TO THE SPECIFICATIONS)</u>			
A	Item 6: Provide all scaffolding, lifting and plant equipment needed for the duration of the contract	Item		
B	Item 12: Provide all drawings as specified	Item		
C	Item 13: Provide operation and maintenance and guarantee as specified	Item		
D	Item 14: Provide maintenance and guarantee as specified	Item		
E	Item 20: Commissioning as specified and required	Item		
F	Item 21: Training as specified	Item		
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<u>Main Water Supply</u>					
A	ø42 mm Isolating ball valve	No	4		
B	Pressure reducing valve dia 42mm				SUM
C	Connecting to underground installation				SUM
D	DN 40mm electronic water meter by Sensus, model MeiStream (RF)	No	1		
E	ø40 mm Float valve	No	1		
F	JOJO type vertical storage tank; 2400 litre; colour winter grass; manufactured with virgin quality LLDPE; UV stabilised; BPA free; food grade layer; black internal layer to prevent algae growth. Complete with all fittings, overflow, drain, inspection lid	No	1		
G	ø20 mm Drain tap fitted to tank	No	1		
H	ø42 mm Copper pipe	m	10		
J	Pump with pressure start / stop control; duty 1.3 l/s @ 400 kpa. Similar to Grundfos CMBE Twin 3-62, 220V, complete with control panel and inlet and discharge manifold	No	1		
K	ø42 mm Non-return valve	No	1		
<u>Copper piping, Shut-off valves (Stop cocks)</u>					
L	ø28 mm Isolating ball valve	No	2		
M	ø22 mm Isolating ball valve	No	2		
N	ø15 mm Isolating ball valve	No	4		
P	ø15 mm angle valve built in at all final fittings	No	27		
Q	ø22 mm angle valve built in at all final fittings	No	2		
<u>GUARD HOUSE</u>					
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Bill No. 2					
SECTION 2 COLD WATER					
176Q/2023/24					
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<u>Copper class 2 piping with capillary fittings</u>				
A	ø22 mm Piping	m	15	
B	ø15 mm Piping	m	8	
<u>Capillary fittings:</u>				
C	Elbow 90°, ø 22mm	No	10	
D	Elbow 90°, ø 15mm	No	6	
E	T-piece ø 22.22.22 mm	No	4	
F	Reducer ø 22.15 mm	No	4	
<u>Copper piping chased in wall</u>				
Class 2 copper piping with capillary couplings				
G	ø15 mm Pipes chased into brickwork	m	8	
<u>Main Water Supply</u>				
H	ø22 mm Isolating ball valve	No	1	
J	Pressure reducing valve dia 22mm			SUM
K	Connecting to underground installation			SUM
L	DN 40mm electronic water meter by Sensus, model MeiStream (RF)	No	1	
<u>Copper piping, Shut-off valves (Stop cocks)</u>				
M	ø22 mm Isolating ball valve	No	1	
N	ø15 mm Isolating ball valve	No	2	
P	ø15 mm angle valve built in at all final fittings	No	4	
Q	ø15 mm wall mounted tap	No	1	
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SECTION 2 COLD WATER				
176Q/2023/24				
PROVISIONAL BILLS OF QUANTITIES				

TRUCK PORT & WORKSHOP

Copper class 2 piping with capillary fittings

A	ø22 mm Piping	m	20	
---	---------------	---	----	--

Capillary fittings:

B	Elbow 90°, ø 22mm	No	10	
---	-------------------	----	----	--

Copper piping chased in wall

Class 2 copper piping with capillary couplings

C	ø22 mm Pipes chased into brickwork	m	20	
---	------------------------------------	---	----	--

Main Water Supply

D	ø22 mm Isolating ball valve	No	2	
---	-----------------------------	----	---	--

E	Connecting to underground installation			SUM
---	--	--	--	-----

F	DN 40mm electronic water meter by Sensus, model MeiStream (RF)	No	1	
---	--	----	---	--

Copper piping, Shut-off valves (Stop cocks)

G	ø22 mm Isolating ball valve	No	1	
---	-----------------------------	----	---	--

H	ø22 mm wall mounted tap	No	2	
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SECTION 2 COLD WATER
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SECTION 2 COLD WATER

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SECTION 2 COLD WATER

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A	Elbow 90°, ø 22mm	No	25		
B	Elbow 90°, ø 15mm	No	30		
C	T-piece ø 28.28.28 mm	No	2		
D	T-piece ø 22.22.22 mm	No	13		
E	T-piece ø 15.15.15 mm	No	2		
F	Reducer ø 28.22 mm	No	2		
G	Reducer ø 22.15 mm	No	15		
<u>Copper piping chased in wall</u>					
<u>Class 2 copper piping with capillary couplings</u>					
H	ø15 mm Pipes chased into brickwork	m	32		
J	ø20 mm Pipes chased into brickwork	m	6		
<u>Main Water Supply</u>					
K	ø28 mm Isolating ball valve	No	2		
L	ø15 mm angle valve built in at all final fittings	No	16		
M	ø20 mm angle valve built in at all final fittings	No	1		
<u>Geyser Installation</u>					
<u>Geyser</u>					
N	Hot water geyser, 400kPa, 250 litre, 4,0 kW with drip tray, fittings and all safety valves	No	2		
P	Hot water geyser, 400kPa, 50 litre, 1,0 kW with drip tray, fittings and all safety valves	No	2		
<u>Heat pump</u>					
Q	Heat pump, 7.2 kW heating capacity; 155 l/h				SUM
R	Heat pump galvanised steel cage complete				SUM
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Bill No. 3 SECTION 3 HOT WATER 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES					

<u>Circulation Pump</u>				
A	Kwikot Pump (IND-CPN-25-6-BR), 220V, 100W	No	1	
B	Timer and thermostat installation to provide pump control as specified	No	1	
C	Dial type, glycerine filled, 100mm diameter pressure gauges; complete with pipe tie-in and isolating valve	No	1	
D	Test points for temperature probe in return line and hot water supply line	No	1	
<u>Safety valve discharge & Overflow drainage</u>				
<u>Copper piping and installation</u>				
E	ø22 mm Piping	m	20	
<u>Fittings:</u>				
F	Elbow 90°, ø 22mm	No	4	
<u>GUARD HOUSE</u>				
<u>Copper class 2 piping with capillary fittings</u>				
G	ø15 mm Piping	m	4	
<u>Capillary fittings:</u>				
H	Elbow 90°, ø 15mm	No	4	
<u>Copper piping chased in wall</u>				
<u>Class 2 copper piping with capillary couplings</u>				
J	ø15 mm Pipes chased into brickwork	m	1	
<u>Main Water Supply</u>				
K	ø15 mm angle valve built in at all final fittings	No	1	
L	ø15 mm shut off valve	No	2	
Carried to Abstract				
Bill No. 3 SECTION 3 HOT WATER 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES				R

Geyser Installation

Geyser

A Hot water geyser, 400kPa, 10 litre, 1,0 kW with drip tray, fittings and all safety valves

No

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SECTION 3 HOT WATER

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2	SECTION 2 COLD WATER	305	
3	SECTION 3 HOT WATER	310	
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DAYWORK

(a) Vehicles, plant and equipment:

A	3) Hydraulic excavator (backacter), more than 60 kW with bucket at least 500 mm wide	Hrs	10.00
B	6) Tipper truck, more than 5m ³ capacity	Hrs	10.00
C	8) Flat bed truck equipped with hydraulic crane of more than 2 t capacity	Hrs	10.00
<u>9) Water trucks:</u>			
D	(i) Up to 12 kl capacity	Hrs	20.00
<u>(11) Compressors:</u>			
E	(i) Up to 10m ³ /minute	Hrs	10.00
<u>(12) Concrete mixer:</u>			
F	ii) Over 400 l capacity	Hrs	10.00
<u>13) Water pump:</u>			
G	(i) Up to 600 l/minute capacity	Hrs	10.00
H	ii) Up to 200 l/minute capacity	Hrs	10.00

Labour:

(a) Labour:

J	(1) Labourer	Hrs	10.00
K	(2) Semi-skilled	Hrs	10.00
L	(3) Skilled	Hrs	10.00
M	(7) Surveyor	Hrs	10.00

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Bill No. 1
SCHEDULE A1 SITE SERVICES
176Q/2023/24
PROVISIONAL BILLS OF QUANTITIES

TEMPORARY WORKS

Accommodation of traffic

A	For all other construction	SUM
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Location and protection of existing services:

Provision of detecting devices for:

B	(a) Water and sewer pipes	SUM
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C	(b) Electrical and other cables	SUM
---	---------------------------------	-----

Dealing with water:

D	(a) Dealing with subsurface water	SUM
---	-----------------------------------	-----

E	(b) Dealing with surface water	SUM
---	--------------------------------	-----

F	Dust control	SUM
---	--------------	-----

G	Accommodating other Contractors	SUM
---	---------------------------------	-----

H	Compliance with the Occupational Health and Safety Act (Act No 85 of 1993) and Construction Regulations and specifications included in Part C5	SUM
---	--	-----

J	Compliance with the Environmental Management Plan and requirements included in Part C6.	SUM
---	---	-----

K	Photographic record	SUM
---	---------------------	-----

L	Liaison with residents and the local authority	SUM
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M	Record of test results and related administration	SUM
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Bill No. 1
SCHEDULE A1 SITE SERVICES
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SCHEDULE A1 SITE SERVICES

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Bill No. 1

SCHEDULE A1 SITE SERVICES

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PROVISIONAL BILLS OF QUANTITIES

Item No		Quantity	Rate	Amount
	<u>SECTION NO 01E - A</u>			
	<u>BILL NO 3</u>			
	<u>EARTHWORKS</u>			
	As specified in SABS 1200 D and in the project specifications			
	<u>SCHEDULED ITEMS</u>			
	<u>Bulk Excavation:</u>			
A	Excavate in all materials and use for fill	m ³	2,000	
B	Excavate in all materials and dispose off site	m ³	100	
C	Excavate in all materials, temporary stockpile and maintain	m ³	100	
D	Cut to spoil	m ³	6,000	
	<u>(b)Extra over items 8.3.2.2 above for:</u>			
E	(1) Intermediate excavation	m ³	100	
	<u>Restricted excavation:</u>			
	<u>a) Excavate for stormwater pond in all materials and use for backfill or embankment, or dispose:</u>			
F	Depth up to 1,0 m	m ³	800	
G	Depth over 1,0 m and up to 2,0 m	m ³	200	
H	(c) Extra over item 8.3.3 (a) for hand excavation	m ³	50	
J	Importing of materials from commercial sources and use for fill (clean sand, G7, compacted to 100% Mod AASHTO)	m ³	800	
K	Compact in-situ material (500mm deep)	m ³	5,500	
	Carried to Abstract			R
	Bill No. 3 SCHEDULE A3 EARTHWORKS 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES			

A	Rip and scarify	m ²	5,500		
B	Trim and "blade" to correct level as G7 layer below building floor, hardstand and parking	m ²	5,500		
<u>Additional tests and surveys required by the Engineer</u>					
<u>3m x 3m grid survey with accuracy to 10mm</u>					
C	Top of bulk earthworks (5500m ²)				SUM
D	Top of G7 layer (5500m ²)				SUM
<u>DCP tests up to 3m deep</u>					
E	DCP tests by contractor for fill	No	50		
F	DCP tests by independent laboratory for fill	No	50		
<u>Compaction test (Troxlér)</u>					
G	By Contractor	No	50		
H	By independent Laboratory	No	50		
<u>Material Classification test by independent laboratory</u>					
J	CBR	No	5		
K	Grading	No	5		
L	Plate bearing test 600mm dia plate with up to 200kN loading	No	10		
Carried to Abstract					R
Bill No. 3 SCHEDULE A3 EARTHWORKS 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES					

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SCHEDULE A3 EARTHWORKS

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Bill No. 3

SCHEDULE A3 EARTHWORKS

176Q/2023/24

PROVISIONAL BILLS OF QUANTITIES

Reducing Y-Junctions (PVC)					
A	160mm x 110mm dia	No	2		
Fibre cement precast manholes as per detail: S2 for depths:					
Cover and frame of sewer manholes shall be hinged heavy duty Ductile Iron cover and frame in compliance with EN124 D400, Rexel or equivalent approved. A sample of cover and frame to be delivered for approval by Local Authority.					
B	Up to 1,5m	No	4		
C	Over 1,5m up to 2,5m	No	3		
D	Over 2.5m up to 3.5m	No	2		
Grease trap:					
E	Chamber complete (refer to dwg. 22206-C-003-100)	No	1		
Connection to existing sewer by:					
Breaking into existing sewer manhole, connect pipe and make good for depths:					
(Rate for tie-in includes breaking into manhole and installing pipe according to detail 2 on dwg no. 22206-C-003-100)					
F	2.5m - 3.0m deep	No	1		
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Bill No. 4 SCHEDULE A4 SEWERAGE 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES					

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SCHEDULE A4 SEWERAGE

176Q/2023/24

PROVISIONAL BILLS OF QUANTITIES

<u>Supply and installation of manholes, catchpits and the like:</u>				
<u>Precast concrete ring manholes (Refer to dwg. SW2.2A and SW2.2B)</u>				
<u>Cover and frame for manholes heavy duty ductile iron, hinged EN124, D400</u>				
<u>Precast concrete ring manholes for pipes up to 600mm dia, for depths</u>				
A	0m - 1,5m	No	12	
B	1,5m - 2,5m	No	2	
<u>Stormwater outlet structure for stormwater pipes complete as shown on the drawings: dwg no. SW5.3 Reinforced concrete in Pond:</u>				
C	For pipes up to 450mm dia	No	1	
<u>Gully's for building downpipes up to 450mm as per detail dwg. 22206-C-005-100 (Detail A) size for depths:</u>				
D	0m - 1.5m	No	11	
<u>Gully's for building downpipes up to 450mm as per detail dwg. 22206-C-005-100 (Detail B) size for depths:</u>				
E	0m - 1.5m	No	12	
<u>Double kerb grid inlet for pipes up to 450mm as per detail drawing SW3.1 size for depths:</u>				
F	0 m - 1,5 m	No	4	
<u>Gully grid inlet for pipes up to 450mm as per detail drawing SW3.5 for depths</u>				
G	0 m - 1,5 m	No	5	
H	Supply and install subsurface drains in Pond complete (Including excavation) refer to drawings 22206-C-005-01 and SW1.1)	m	150	
J	Reducing Y-junctions: 160mm x 110mm	No	6	
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Bill No. 5 SCHEDULE A5 STORMWATER 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES				R

A	Supply and install rodding eye for subsurface drains as per detail SW1.2	No	13	
B	Pond outlet manhole complete as per dwg no. 22206-C-005-101	No	1	
C	Pre-cast concrete channel (cut off channel) as per A-A on dwg no. 22206-C-005	m	110	
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Bill No. 5

SCHEDULE A5 STORMWATER

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PROVISIONAL BILLS OF QUANTITIES

BEDDING

As specified in SABS 1200 LB and in the project specifications

Provision of bedding from trench excavations:

A	(a) Selected granular material	m ³	20
B	(b) Selected fill material	m ³	40

Supply only of bedding by importation:

From other necessary excavations:

C	(a) Selected granular material	m ³	10
D	(b) Selected fill material	m ³	10

From commercial sources

E	(a) Selected granular material	m ³	197
F	(b) Selected fill material	m ³	186

MEDIUM PRESSURE PIPELINES

As specified in SABS 1200 L and in the project specifications

Supply, lay and bed on bedding for flexible pipes, complete with couplings:

G	25mm dia HDPE Class 16	m	50
H	40mm dia HDPE Class 16	m	185

PVC-U Class 16 (SANS 966 : PART 1:2000 PVC-U) using spigot and socket rubber ring joints

J	75mm dia	m	235
K	90mm dia	m	15
L	110mm dia	m	210
M	160mm dia	m	450

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Bill No. 6
SCHEDULE A6 WATER
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PROVISIONAL BILLS OF QUANTITIES

Extra over item 8.2.1 for the supplying, laying and bedding of uPVC specials and fittings

11,25 degree bends

A	110mm dia	No	1
B	160mm dia	No	2

22,5 degree bends:

C	110mm dia	No	1
D	160mm dia	No	2

45 degree bends

E	110mm dia	No	3
F	160mm dia	No	2

90 degree bends :

G	110mm dia	No	2
H	160mm dia	No	2

Extra over item 8.2.1 for the supplying, laying and bedding of magnum saddle with brass insert or similar approved on main pipelines for:

J	75mm dia	No	3
K	40mm dia	No	3

Extra over item 8.2.1 for Klamflex Black dedicated adaptors, to suit OD of PVC and AC pipes.

L	75mm dia	No	14
M	110mm dia	No	6
N	160mm dia	No	9

DI Reducers socketed

P	75mm x 110mm dia	No	1
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SCHEDULE A6 WATER
176Q/2023/24
PROVISIONAL BILLS OF QUANTITIES

<u>Extra over item 8.2.1 for the supply and installation of ball valves for irrigation connections including all fittings to connect to 40mm HDPE pipe and plastic meter box to suit</u>				
A	40mm ø COBRA Dezintified brass (DZR) ball valve PN25 or similar approved	No	1	
<u>Supply Bosal and fix to external building wall for water connection to roof</u>				
B	50mm ø	m	20	
C	Supply and install 25mm ø HDPE Class 16 pipe in Bosal including all fittings	m	20	
<u>Thrust blocks:</u>				
D	25MPa/19mm concrete	m ³	10	
E	Valve chamber as per dwg W1	No	18	
F	Pedestal fire hydrant in accordance with SANS 1128 Part 1 and detail dwg 22206-C-004-101	No	1	
<u>Marker blocks/pipeline route markers :</u>				
G	Purpose made 300mm long BK2 kerbs with recessed markings and colour painted.	No	5	
<u>Connection to existing watermains as per details and dwg no. 22206-C-004:</u>				
H	75mm dia	No	3	
J	150mm dia	No	1	
<u>Provide chamber complete with all fittings as per detail</u>				
K	Bulk water meter chamber including all fittings as per detail 22206-C-004-104 (80mm meter size)	No	1	
L	Fire booster and water connection chamber including all fittings as per dwg 22206-C-004-100	No	1	
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ERF CONNECTIONS (WATER)

As specified in SABS 1200 LF and in the project specifications

Provide erf connections complete as per detail drawing 22206-C-004-103 (including excavation, but excluding ferrule and ball valve)

Single erf connections as per Dwg No 22206-C-004-103, for length:

10m to 20m long

A 25mm dia

No

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SCHEDULE A6 WATER

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PROVISIONAL BILLS OF QUANTITIES

Class 34 heavy duty using spigot and socket rubber ring joints:

For PV:

A	50mm dia	m	16
B	110mm dia	m	66

Supply, lay, bed and prove duct:

C	Extra over item 8.2.5 for the supplying, laying and bedding of plastic warning (Danger tape) tape 200mm above sleeves	m	850
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Extra over 8.2.5 for the supplying, lay and bedding of spigot and socket end caps with rubber ring joints

D	110mm dia	No	16
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Draw pits/manholes:

E	Electrical and electronics draw box (800mm x 800mm) as per drawing 22206-C-006-102	No	4
F	PV draw box (600mm x 600mm) as per dwg no. 22206-C-006-101	No	4
G	Fibre manhole complete as per dwg no. 22206-C-006-100	No	16

Cable markers

H	(b) Kerb markers (300mm long kerb with recessed description)	No	10
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SCHEDULE A7 CABLE DUCTS
176Q/2023/24
PROVISIONAL BILLS OF QUANTITIES

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SCHEDULE A7 CABLE DUCTS

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PROVISIONAL BILLS OF QUANTITIES

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	<u>SECTION NO 01E - A</u>			
	<u>BILL NO 8</u>			
	<u>ROADS</u>			
	<u>EARTHWORKS (ROADS, SUBGRADE)</u>			
	As specified in SABS 1200 DM and in the project specifications			
	<u>Treatment of roadbed:</u>			
	<u>(a) Roadbed preparation and compaction of material to:</u>			
A	(2) Minimum of 93% MDD (100% for sand) (Sidewalks, 150mm depth)	m ³	160	
B	(2) Minimum of 93% MDD (100% for sand) (Roads, 300mm depth) (areas not previously done)	m ³	1,290	
	<u>Cut to fill, borrow to fill (minor amendments to top of crushed layer)</u>			
	<u>(a) Cut to to fill</u>			
C	(1) In road prism, compacted to 93% MDD (100% for sand)	m ³	50	
D	(2) Cut to spoil off site	m ³	10	
	<u>Selected layer using material from commercial sources:</u>			
	<u>(a) 150mm G7 material to use as upper selected layer compacted to 93% MDD (100% for sand) under roads and parking areas (only on instruction of Engineer)</u>			
E	1) 150mm under building	m ³	230	
F	2) 150mm under sidewalk	m ³	180	
G	3) 150mm under paving in roadways	m ³	390	
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<u>Stabilization agent</u>				
<u>As specified in SABS 1200 ME and in the project specifications</u>				
A	(3) CEM1 Portland cement 32,5N ()	t	27.00	
B	(a) Survey existing building working layers to confirm shortfall/excess material before placing concrete			SUM
C	Soil pesticide/ant poison for building platform s			SUM
<u>SEGMENTED PAVING</u>				
As specified in SABS 1200 MJ and in the project specifications				
<u>Construction of paving complete with 25mm bedding sand, including all cutting, compaction etc.</u>				
<u>(a) Concrete/brick pavers and cobbles in Roadway and Sidewalks</u>				
<u>(1) 60mm Class 30/2.0 type S-C red concrete pavers complying with SANS 1058:2012 (Sidewalks)</u>				
D	90° Herringbone	m ²	1,080	
<u>(2) 80mm 40 MPa interlocking light grey concrete pavers type S-A, Class 40MPa/2.6 complying with SANS 1058:2012</u>				
E	45° Herringbone	m ²	2,500	
<u>(3) 60mm charcoal Class 30/2.0 concrete pavers type S-C complying with SANS 1058:2012 (parking) in herringbone pattern</u>				
F	90° Herringbone	m ²	380	
G	Demarcate parking bays with different colour interlocking paver.	m	500	
<u>KERBING AND CHANNELLING</u>				
As specified in SABS 1200 MK and in the project specifications				
<u>Concrete kerbing:</u>				
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<u>(a) In roadway and sidewalks</u>				
<u>(1) Edging (E1) for sidewalks or in parking interface with concrete/paving (Dwg RD1.3)</u>				
A	Radius over 4m up to 20m	m	20	
B	Radius over 20m and straight sections	m	120	
<u>(2) Edging (E3) in parking interface with concrete/paving, between various pavings types and edge restraints (Dwg RD1.3)</u>				
C	Radius over 20m and straight sections	m	35	
<u>(3) Barrier kerb (BK2) (Dwg RD1.1)</u>				
D	Radius over 4m and up to 20m	m	30	
E	Radius over 20m and straight sections	m	180	
<u>Concrete kerbing and channelling combined:</u>				
<u>(a) In roadway and sidewalks</u>				
<u>(1) Barrier kerb and channel combined (BK2 + C1) (Dwg RD1.1)</u>				
F	Radius over 4m and up to 20m	m	20	
G	Radius over 20m and straight sections	m	90	
<u>(2) Dropped Kerb and Channel combined (BK 2 and C1) (Dwg RD2.1) (Type A: 40mm step)</u>				
H	Radius over 20m and straight sections	m	10	
J	V-channel (2xC1) (Dwg RD1.4)	m	110	
K	Transition between BK2 + C1 channel and inlet kerbs for stormwater inlets	No	10	
L	W1 Water channel as per dwg RD1.7	m	150	
M	Mole Barrier (1m deep HDPE perforated sheet) (Dwg RD14)	m	360	
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<u>Kerb markings</u>			
A	E-Electrical	No	10
B	Water (Blue)	No	5
C	Sewer (Brown)	No	5
<u>ANCILLARY ROADWORKS</u>			
<u>as specified in SABS 1200 MM and in the project specifications</u>			
<u>PERMANENT ROADSIGNS</u>			
<u>(600 mm complete, including posts and bracings) (Dwg RM3)</u>			
D	R1-Stop	No	4
E	R201 (30km/h)	No	3
<u>ROAD MARKINGS</u>			
<u>Non reflectorized paint applied at nominal rate of 0.42 l/m◆: (White lines)</u>			
F	100mm wide	m	150
G	300mm wide	m	15
H	White characters and symbols	m ²	20
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SCHEDULE A9 ROADS

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SCHEDULE A9 ROADS

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Bill No. 10

SCHEDULE A11 RETAINING WALL

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SCHEDULE A11 RETAINING WALL

176Q/2023/24

PROVISIONAL BILLS OF QUANTITIES

JOINTS

Saw cut joints

A 3 x 45mm saw cut joints with top 10mm increased to 6
to 10mm wide

m

15

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Bill No. 11
SCHEDULE A12: POND FOREBAY, HEADWALLS & OVERFLOW
176Q/2023/24
PROVISIONAL BILLS OF QUANTITIES

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SCHEDULE A12: POND FOREBAY, HEADWALLS & OVERFLOW

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SCHEDULE A12: POND FOREBAY, HEADWALLS & OVERFLOW

176Q/2023/24

PROVISIONAL BILLS OF QUANTITIES

Item No		Quantity	Rate	Amount
	<u>SECTION NO 01E - A</u>			
	<u>BILL NO 12</u>			
	<u>GENERAL</u>			
	As specified in SABS 1200 A and in the project specifications			
	<u>FIXED CHARGES AND VALUE RELATED ITEMS</u>			
A	Fixed preliminary and general charges		SUM	
B	Value related preliminary and general charges		SUM	
	<u>Cost of survey in terms of Land Survey Act:</u>			
C	Locate, record, protect and reinstate pegs		SUM	
	<u>SCHEDULED TIME RELATED ITEMS</u>			
	<u>Time related preliminary and general charges :</u>			
D	The contract period during the normal industry working period (outside public holidays and the industry shutdown period during December and January)		SUM	
E	Public Holidays	No	1	
	<u>PRIME COST SUMS</u>			
	<u>(1) Additional testing of materials required by Engineer:</u>			
F	(a) Cost of testing		SUM	
G	(b) Charge required by Contractor on sub-item (a) above		%	
	<u>(2) As built surveys:</u>			
H	(a) Cost of as built surveys		SUM	
J	(b) Charge required by Contractor on sub-item (a) above		%	
	Carried to Abstract		R	
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	SCHEDULE B: ACCESS ROAD AND APPURTENANT WORKS			
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<u>SITE CLEARANCE</u>			
<u>CLEAR SITE</u>			
<u>Clear and grub (minimum 100mm deep):</u>			
A	Road Reserve	m ²	12,500
<u>Remove and grub large trees and tree stumps of girth over and up to</u>			
B	Up to 1.0m	No	2
C	Over 1,0 m up to and including 2,0 m	No	2
<u>Dismantle and remove existing pipelines (not encased in concrete)</u>			
D	300 mm dia. RC Class 100D stormwater pipe	m	40
E	650 mm dia. RC Class 100D stormwater pipe	m	20
F	900 mm dia. RC Class 100D stormwater pipe	m	40
<u>Dismantle and remove pipelines encased in concrete</u>			
G	Up to 250 mm dia	m	5
H	Demolish and remove existing stormwater catchpit structure up to 2,0 m deep		
			SUM
<u>Remove and dispose of kerbing</u>			
J	BK2 + C1 (1m)	m	150
K	BK2	m	50
L	Rip and clear tarred and paved areas	m ²	800
<u>Relocation of existing services</u>			
M	Fire Hydrant	No	1
N	Water valve and chamber	No	1
P	Streetlight pole	No	1
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Bill No. 12 SCHEDULE B: ACCESS ROAD AND APPURTENANT WORKS 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES			

<u>EARTHWORKS (ROADS, SUBGRADE)</u>				
As specified in SABS 1200 DM and in the project specifications				
<u>Treatment of roadbed:</u>				
<u>(a) Roadbed preparation and compaction of material to:</u>				
A	Minimum of 93% of modified AASHTO maximum density (100% for sand) in roads	m ³	1,250	
B	Minimum of 93% of modified AASHTO maximum density (100% for sand) in sidewalks	m ³	30	
<u>Cut to fill (in road prism):</u>				
C	(a) Compact to 93 % of modified AASHTO maximum density (100% for sand).	m ³	10	
<u>Selected layer using material from approved commercial sources:</u>				
D	(a) 150mm G7 material to use as upper selected layer, compacted to 93% of modified AASHTO density (100% for sand) in roads	m ³	1,250	
E	(a) 150mm G7 material to use as selected layer, compacted to 93% of modified AASHTO density (100% for sand) in sidewalks	m ³	30	
F	(b) 150mm G9 material to use as lower selected layer, compacted to 93% of modified AASHTO density (100% for sand)	m ³	100	
<u>Extra-over items 8.3.4 and 8.3.5 for excavating and breaking down material in:</u>				
G	(a) Intermediate excavation	m ³	10	
H	(b) Hard excavation	m ³	5	
<u>Cut to spoil from:</u>				
J	(a) Soft excavation	m ³	4,400	
K	(b) Intermediate excavation	m ³	10	
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DRAINAGE

EARTHWORKS (PIPE TRENCHES)

As specified in SABS 1200 DB and in the project specifications

PIPELINE TRENCHES

(a) Pipes over 125 mm dia up to 525 mm dia for depths:

A	Up to 1,5 m	m	95
B	Over 1,5 m up to 2,5 m	m	5

(3) Hand excavation and backfill where directed by the Employer's Agent

C	(a) Soft material	m ³	5
D	(c) Excavate and dispose of unsuitable material from trench bottom	m ³	5

Excavation ancillaries

E	Compaction in road reserves	m ³	50
---	-----------------------------	----------------	----

BEDDING (PIPES)

As specified in SABS 1200 LB and in the project specifications

Supply only of bedding by importation:

From commercial sources:

F	(a) Selected granular material	m ³	10
G	(b) Selected fill material	m ³	40

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SCHEDULE B: ACCESS ROAD AND APPURTENANT WORKS
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DRAINAGE

As specified in SABS 1200 LE and in the project specifications

Supply and lay concrete pipe culverts on class B bedding using spigot and socket type with rubber ring joints:

RC Class 100 D pipes:

A	300mm dia	m	100
---	-----------	---	-----

Supply, lay, joint, bed on bedding for flexible pipes and test pipeline:

PVC-U Class 34 pipes: (heavy duty) complying with SANS 966 using spigot and socket rubber ring joints

B	110mm dia	m	280
---	-----------	---	-----

Supply and lay Class 75S portal and rectangular culverts:

Complete with precast invert slab:

C	2400 mm x 1200 mm	m	60
---	-------------------	---	----

Supply and installation of manholes, catchpits and the like:

Brickwork headwall structure (Ordinary Inlet/Outlet structure) as shown on City of Cape Town Detail Drawing no. SW5.3 for depth:

D	0,0m - 1,5m	No	8
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E	Construct enhanced swale complete as shown on drawing no 22206-C-002-203	m	1,800
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F	Construct swale outlet structure as shown on drawing no 22206-C-002-203	m	500
---	---	---	-----

SUBBASE

As specified in SABS 1200 ME and in the project specifications

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SCHEDULE B: ACCESS ROAD AND APPURTENANT WORKS
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PROVISIONAL BILLS OF QUANTITIES

	<u>Dismantling and re-erection of road signs having a surface area of :</u>				
A	Up to 2m ²	m ²	5		
	<u>ROAD MARKINGS</u>				
	<u>Non-reflectorized road marking paint applied at nominal rate of 0.42 l/m:</u>				
	<u>White lines (broken or unbroken):</u>				
B	100mm wide	m	60		
C	300mm wide	m	20		
D	Traffic island markings (any colour)	m ²	20		
E	Alternating black and white kerb markings on barrier kerbs	m	50		
	<u>Variation in rate of application from that stated in item 8.4.1</u>				
F	White paint	l	5		
G	Yellow paint	l	5		
H	Glass beads	kg	1		
J	Tree rings	No	1		
K	Provision and installation of mole barriers complete as per City of Cape Town Detail Drawing RD14	m	2,000		
	<u>PEDESTRIAN FACILITIES</u>				
L	(a) Supply and install 450 x 450 precast warning blocks on 30mm bedding and 100mm thick 25MPa concrete as per City of Cape Town typical details RD4.7 and specifications including cuttings if required	m ²	15		
M	(b) Supply and install 450 x 450 precast directional concrete blocks on 30mm bedding and 100mm thick 25MPa concrete as per City of Cape Town typical details RD4.7 and specifications including cuttings if required	m ²	10		
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A	(c) 100mm thick 25Mpa Concrete infill around warning and directional blocks as per City of Cape Town typical details RD4.7 and specifications, including ramp wings	m ²	20	
B	(d) Supply and install C2 precast concrete channel on 100mm 20MPa concrete bedding at pedestrian crossings as per City of Cape Town typical details RD4.7 and specifications	m	12	
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SCHEDULE B: ACCESS ROAD AND APPURTENANT WORKS

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SCHEDULE B: ACCESS ROAD AND APPURTENANT WORKS

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Bill No. 13

SCHEDULE C: RAPID IMPACT COMPACTION

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SCHEDULE C: RAPID IMPACT COMPACTION

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4	SCHEDULE A4 SEWERAGE	323	
5	SCHEDULE A5 STORMWATER	328	
6	SCHEDULE A6 WATER	335	
7	SCHEDULE A7 CABLE DUCTS	339	
8	SCHEDULE A9 ROADS	345	
9	SCHEDULE A10 GABIONS AND PITCHING	346	
10	SCHEDULE A11 RETAINING WALL	349	
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Item No		Quantity	Rate	Amount
	<u>SECTION NO 01E - B</u>			
	<u>BILL NO 1</u>			
	<u>TRAFFIC SIGNALS</u>			
	<u>Controller, Class CJ</u>			
A	Supply and installation of 16 phase MX Plus Controller equipped with licensed Sensys CPU, a Pedestrian Detector module, 3G Router, GPS clock card/module, Top-hat and Dual Antenna complete with concrete plinth, commission and test. Including the provision of a glanded PVC pipe for future installation of a fixed ADSL line.	No	1	
	<u>Uninterruptable Power Supply</u>			
B	Supply and installation of a 3.0 KVA inverter (220VAC) 48 VDC, 48VDC Energy storage module (Lithium Ion based Battery) complete with ultra secure Titanic UPS cabinet and testing.	No	1	
	<u>Pedestrian push buttons</u>			
C	Supply and installation of pedestrian push buttons (BPC Accessible)	No	2	
	<u>Signal face modules (210mm diameter aspects; normal intensity) Including mounting brackets & pole strapping</u>			
D	(a) S1 (LED optics), with background screen	No	1	
E	(b) S8 (LED optics), with background screen	No	1	
F	(c) S9 (LED optics), with background screen	No		
G	(d) S11 (LED optics), with background screen	No	2	
H	(e) S10L (LED optics), with background screen	No		
J	(f) Re-fitting S1 (LED optics), with background screen (labour only)	No		Rate Only
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**CONSTRUCTION OF NEW NOORDHOEK SATELLITE DEPOT
ERF 17949 FISH HOEK**

A	(ii) Extra over for item PS9.3.14(a) for laying cable in duct (duct itemized separately)	m	80	
B	(iii) Extra over for item PS9.3.14(a) for connecting to controller	No	1	
C	(iv) Extra over for item PS9.3.14(a) for connecting to distribution pillar	No	4	
D	(b) Signal lamp supply ring-circuit cable from controller to distribution pillars and between distribution pillars: PVC insulated, galvanized steel wire armoured, 19-core cable of minimum cross-sectional area 1.5mm ² with cable markers	m	200	
E	(i) Extra over for item PS9.3.14(b) for laying cable in trench	m	120	
F	(ii) Extra over for item PS9.3.14(b) for laying cable in duct (duct itemized separately)	m	80	
G	(iii) Extra over for item PS9.3.14(b) for connecting to controller	No		Rate Only
H	(iv) Extra over for item PS9.3.14(b) for connecting to distribution pillar	No		Rate Only
	<u>Signal lamp supply cable</u>			
J	(a) Signal lamp supply cable from distribution pillars to signal lights and pedestrian push buttons: PVC insulated, galvanized steel wire armoured, 19-core cable of minimum cross-sectional area 1.5mm ² with cable markers	m	190	
K	(i) Extra over item PS9.3.15(a) for laying cable trench	m	150	
L	(ii) Extra over item PS9.3.15(a) for laying cable in duct (duct itemized separately)	m	40	
M	(iii) Extra over for item PS9.3.15(a) for connecting to distribution pillar	No	13	
N	(iv) Extra over for item PS9.3.15(a) for connecting to signal head	No	16	
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A	(v) Extra over for item PS9.3.15(a) for connecting to pedestrian push button	No	2		
	<u>Extra over items for excavation and backfill</u>				
B	(a) Extra over items PS9.3.13(a)(i), PS9.3.14(a)(i), PS9.3.14(b)(i) and PS9.3.15(a)(i) for excavating and backfilling trenches, bedding cables including bedding material to replace unsuitable material	m ³	70		
C	(b) Extra over for excavating to expose cable duct ends and other services including backfilling	m ³	5		
	<u>Installation of earth wire</u>				
D	(a) Extra over for items PS9.3.14(a), PS9.3.14(b) and PS9.3.15(a) for the installation of bare copper earthwire of minimum cross sectional area of 10mm ² to be laid with SWA cables	m	590		
E	(i) Extra over for item PS9.3.25 (a) for laying cable in trench	m	390		
F	(ii) Extra over for item PS9.3.25 (a) for laying cable in duct (duct itemized separately)	m	200		
	<u>Cable matting</u>				
G	Supply and install cable matting	m	200		
	<u>Wireless sensors for magnetometer detection system</u>				
H	(a) Wireless sensor (VSN240-F) including clear plastic shells (VSN240-CS)	No	10		
J	(b) Epoxy tube (VSN240-EPX) for installation	No	10		
K	(c) Dual component epoxy applicator (VSN240-F-APP)	No	1		
L	(d) 100mm concrete coring bit (VSN240-CON)	No	1		
	<u>Wireless detection system</u>				
M	(a) SPP Digital Radio Antenna (APCC-SPP) including mounting (KIT-MTG)	No	2		
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A	(b) Repeaters (FLEX-RPT3-SLR-E), including battery pack and mounting (KIT-MTG)	No	5		
B	(c) 8m long galvanized mounting pole	No	3		
C	(d) FlexControl Card (FLEX-CTRL-M)	No	1		
D	(e) Flex Isolator Module (FLEX-ISOL-M)	No	1		
E	(f) Extra over item PS9.3.28(c) for excavating and backfilling holes for mounting poles for SPP radios and repeaters	m ³	4		
<u>CAT5 Ethernet cables for Wireless Detection System</u>					
F	(a) Outdoor cable from SPP radio to FlexIsolator, 20m Length	No	1		
G	(b) From FlexIsolator to FlexControl, 0.3m length	No	2		
H	(c) From FlexControl to Controller, 0.3m length	No	2		
J	Testing and commissioning of installation				SUM
K	Maintenance of installation during 12 month defects liability period				SUM
L	Connection to local authority's power source				SUM
M	Project administration, insurance, site establishment and PG's				SUM
N	Traffic Accommodation during installation, testing, commissioning and maintenance period				SUM
P	Removal of existing traffic signal equipment as agreed upon with the engineer, including cables, poles, stubbies, lanterns, TrafficCams, UPS, controller, including excavation, backfilling and reinstatement where necessary				SUM
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Bill 1: Traffic Signals

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Bill 1: Traffic Signals

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Provision for compost, soil additives may only be added if so required by water specialist

Wetland clearing & Rehabilitation area (7668m²)

A	Supply and dig in a 25mm layer of medium grade compost to new planting areas to a depth of 350mm (3834m ² ; 50% of area allowance)	m ³	96
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B	Supply and spread a 25mm layer of coarse grade compost as mulch to finished areas	m ³	96
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Fynbos Rehabilitation area (18,133m²)

C	Supply and dig in a 25mm layer of medium grade compost to new planting areas to a depth of 350mm (9066m ² ; 50% of area allowance)	m ³	226
---	---	----------------	-----

D	Supply and spread a 25mm layer of coarse grade compost as mulch to finished areas	m ³	226
---	---	----------------	-----

Wetland & River Bank area South(7410m²)

E	Supply and dig in a 25mm layer of medium grade compost to new planting areas to a depth of 350mm (7410m ²)	m ³	185
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F	Supply and spread a 25mm layer of coarse grade compost as mulch to finished areas	m ³	185
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Wetland Dune Slack area (7703m²)

G	Supply and dig in a 25mm layer of medium grade compost to new planting areas to a depth of 350mm (7703m ²)	m ³	192
---	--	----------------	-----

H	Supply and spread a 25mm layer of coarse grade compost as mulch to finished areas	m ³	192
---	---	----------------	-----

PLANTING

Unit rates of all plants to include excavation of plant holes, mixing of fertilisers and additives with in-situ soil, backfilling of mixture and all other labour-related costs. See Plant List and specifications. Final quantities and species to be confirmed.

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WETLAND & FYNBOS REHABILITATION
176Q/2023/24
PROVISIONAL BILLS OF QUANTITIES

REFER TO PLANT LIST

Allow for planting of SUDS approved species:

4lt, bulbs, splits & 6 pack plantlets (3/m²)

Wetland clearing & Rehabilitation area (7668m²) Allow for 50% of area: 3834m²

A	1lt plant @ 3/m ² 30% of area	No	3,450
B	6 pack plantlet @ 3/m ² 40% of area (1534m ²)	No	4,600
C	Open ground or plug plantlet (24 cavity) 30% of area	No	3,450

Fynbos Rehabilitation area (18,133m²) Allow for 50% of area : 9066m²

D	1lt plant @ 3/m ²	No	4,079
E	1lt plant @ 1/m ² :	No	1,813
F	6 pack plantlet @ 3/m ²	No	5,439
G	Open ground or plug plantlet (24 cavity) 3/m ²	No	4,079
H	4lt plant	No	453
J	Cuttings @ 3/m ²	No	1,813
K	bulbs @ 3/m ²	No	1,360

Wetland & River Bank area South(7410m²)

L	1lt plant @ 3/m ²	No	6,426
M	6 pack plantlet @ 3/m ²	No	8,892
N	Open ground or plug plantlet (24 cavity) 3/m ²	No	6,426

Wetland Dune Slack area (7703m²)

P	1lt plant @ 3/m ²	No	6,932
Q	6 pack plantlet @ 3/m ²	No	9,243

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A	Open ground or plug plantlet (24 cavity) 3/m ²	No	6,932		
<u>TREES TO FYNBOS REHABILITATION</u>					
B	10LT TREES	No	25		
C	20LT TREES	No	50		
<u>HARD LANDSCAPING</u>					
<u>Laterite walkway:</u>					
D	Supply material and install a 1500mm wide laterite walkway with running bond concrete paver edging as per detail drawing and Detail Specifications 9.1	m ²	3,000		
E	Supply material and install 110mm tan bond concrete paver on 75mm concrete haunch	l/m	4,000		
F	Supply and install concrete benches ex Modern Concrete Works or similar approved, 1500mm long x 650mm high; finished level 450 high as per Detail Specification 9.2	No	5		
<u>Sundries</u>					
<u>Tree staking</u>					
Allow for the supply of material and installation of single tree staking					
refer to Detail Spec 9.3 and detail in Appendix					
G	Single tree staking to 20lt trees	No	50		
<u>IRRIGATION</u>					
<u>Supply material and install a turf valve system to selected areas as per irrigaiton bill and specifications. Cost to be reflected in irrigation item under Depot bill</u>					
<u>MAINTENANCE</u>					
Allow for fully comprehensive maintenance as per standard and specific maintenance specifications and maintenance bill for a period of 12 months					
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Bill No. 1 WETLAND & FYNBOS REHABILITATION 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES					

PLANTING AREAS:

A	Weeding of agricultural weeds & kikuyu in planting areas (1x/mnth for 12 mnths)	m ²	31,847
B	Typha capensis & Phragmites control to allow for faunal movement and stormwater movement (allow 1 event)	months	1

PESTS AND DISEASE

C	Monitoring & spraying with approved pesticides/ herbicides as per specifications or approval from LA. (1x per month)	months	12
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LITTER

D	Litter removal from landscape areas (4x per month)	months	12
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IRRIGATION

E	Hand Watering (as required - rate only for monthly handwatering) Summer months (4x per month)	months	7
F	Automatic irrigation system - monitoring and adjusting	months	12

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WETLAND & FYNBOS REHABILITATION
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Section No. 11

Bill No. 1

WETLAND & FYNBOS REHABILITATION

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Bill No. 1

WETLAND & FYNBOS REHABILITATION

176Q/2023/24

PROVISIONAL BILLS OF QUANTITIES

Item No		Quantity	Rate	Amount
	<u>IRRIGATION</u>			
	<u>MAINLINE</u>			
A	WATER CONNECTION TO MUNICIPAL WATER	No	6	
B	63MM PE 100 PN 10 HDPE SABS PIPE	m	400	
C	63MM PERLA COUPLING	No	4	
D	63MM PERLA ELBOW	No	6	
E	63MM PERLA TEE	No	4	
F	63MM PERLA PLUG	No	4	
G	63MM X 1' SAB HIGH PRESSURE SADDLE (PN16)	No	20	
H	63MM X 2" PERLA MALE ADAPTOR	No	4	
J	50MM HYDROSTATIC PRESSURE REDUCING VALVE PN16 ,SETTING 0.5 - 7.0 BAR	No	1	
K	50MM GALVANISED BARREL NIPPLE	No	2	
L	50MM CHROME PLATED BALL VALVE (FULL BORE)	No	2	
M	RAINBIRD 430 X 300MM X 300MM DEEP VALVE BOX ECONO	No	2	
N	SPRAYLINE RAINBIRD RB 1812 POP UP C/W RAINBIRD VAN NOZZLES OR SIMILAR	No	17	
P	32MM X 1/2" SAB SADDLE	No	17	
Q	SPIRED BARBED ELBOW 15MM	No	34	
R	6300 SHRUB ADAPTOR C/W RAINBIRD VAN NOZZLES OR SIMILAR	No	22	
S	32MM X 1/2" SAB SADDLE	No	22	
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	Bill No. 2 DEPOT AUTOMATED IRRIGATION 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES			

**CONSTRUCTION OF NEW NOORDHOEK SATELLITE DEPOT
ERF 17949 FISH HOEK**

A	15MM X 0.750M PVC RISER (BLACK)	No	22
B	15MM SOCKET	No	22
C	SPIRED BARBED ELBOW 15MM	No	44
D	RAINBIRD RB 1812 POP UP C/W RAINBIRD R-VAN-24 ROTATING NOZZLE OR SIMILAR	No	5
E	32MM X 1/2" SAB SADDLE	No	5
F	SPIRED BARBED ELBOW 15MM	No	10
G	SHRUB ADAPTOR C/W RAINBIRD R-VAN-24 ROTATING NOZZLE OR SIMILAR	No	106
H	32MM X 1/2" SAB SADDLE	No	106
J	15MM X 0.750M PVC RISER (BLACK)	No	106
K	15MM SOCKET	No	106
L	SPIRED BARBED ELBOW 15MM	No	212
M	RAINBIRD RB 5012 300MM HI POP UP GEAR DRIVE SPRINKLER OR SIMILAR	No	3
N	32MM X 3/4" SAB SADDLE	No	3
P	SPIRED BARBED ELBOW 20MM	No	6
Q	RAINBIRD RB 5000 GEAR DRIVE SHRUB SPRAYER OR SIMILAR	No	12
R	32MM X 3/4" SAB SADDLE	No	12
S	20MM X 0.750M PVC RISER (BLACK)	No	12
T	20MM SOCKET	No	12
U	SPIRED BARBED ELBOW 20MM	No	24
V	50MM X 1/2" SAB SADDLE	No	10
W	SPIRED BARBED ELBOW 15MM	No	10

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A	50MM X 3/4 SAB SADDLE	No	2
B	SPIRED BARBED ELBOW 20MM	No	2
<u>DRIP FOR ROOF PLANTERS</u>			
C	25MM HYDROSTATIC PRESSURE REDUCING VALVE PN16 ,SETTING 0.5 - 7.0 BAR	No	5
D	25MM GALVANISED BARREL NIPPLE	No	5
E	RIVILUS TECHLINE 17MM X 0.4M SPACING	m	1,100
F	BLANK DRIP PIPE	m	100
G	DRIPPER PEGS (100 PER BUNDLE)	No	11
H	32MM X 1/2" SAB SADDLE	No	60
J	17mm X 1/2" DRIP MALE ADAPTOR BSP - BROWN	No	60
K	17MM DRIPPER TEES	No	60
L	17MM DRIPPER COUPLINGS	No	11
M	17MM DRIPPER TEES	No	60
N	17MM DRIPPER ELBOWS	No	50
P	17MM X 1/2" DRIP MALE ADAPTOR	No	5
Q	15MM NYLON SOCKETS (BK 50)	No	5
R	15MM BALL VALVE	No	5
S	17MM X 1/2" FEMALE DRIP TEE	No	5
T	15MM VACUUM BREAKER	No	5
U	17MM X 1/2" FEMALE DRIP TEE	No	5
V	15MM X 0.300 PVC RISER	No	5
W	15MM SOCKET	No	5

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DEPOT AUTOMATED IRRIGATION
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PROVISIONAL BILLS OF QUANTITIES

<u>REDUCER FROM 50MM TO 32MM PIPE</u>				
A	50MM X 1 1/4 PERLA FEMALE ADAPTOR	No	4	
B	32MM X 1 1/4 PERLA MALE TEE	No	4	
C	50MM X 1 1/4 PERLA FEMALE ADAPTOR	No	4	
D	32MM X 1 1/4 PERLA MALE ADAPTOR	No	4	
E	50MM X 1" SAB SADDLE	No	5	
F	32MM X 1" PERLA MALE ADAPTOR	No	5	
G	32MM PERLA TEE	No	20	
H	32MM PERLA ELBOW	No	20	
<u>VALVE FITTINGS</u>				
J	50MM X 1 1/4 PERLA FEMALE ELBOW	No	4	
K	32MM X 25MM POLYPROP REDUCING NIPPLE	No	4	
L	50MM PERLA TEE	No	4	
M	50MM PERLA ELBOW	No	4	
N	32MM X 1" PERLA MALE ELBOW	No	16	
P	32MM PERLA TEE	No	16	
Q	32MM PERLA ELBOW	No	16	
R	32MM PERLA END PLUG	No	50	
S	32MM PE 100 PN 8 SABS PIPE	No	1,100	
T	32MM PERLA COUPLING	No	11	
U	50MM PE 100 PN 8 SABS PIPE	m	200	
V	50MM PERLA COUPLING	No	2	
W	SAB COMPRESSION ALUMINIUM SPANNER	No	1	
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CONSTRUCTION OF NEW NOORDHOEK SATELLITE DEPOT
ERF 17949 FISH HOEK

A	1,5MM SOLENOID CABLE	m	3,200	
B	50MM HDPE CABLE DUCTING	m	600	
C	9V ENERGIZER ALKALINE SQUARE BATTERIES	No	1	
D	SURGE PLUG	No	1	
E	WATERPROOF CONNECTORS CONNECTORS	No	100	
	<u>AIR VALVES AND TURF VALVES</u>			
F	63MM X 2" SAB HIGH PRESSURE SADDLE (PN16)	No	2	
G	50MM NELSON TRIPLE ACTING AIRVALVE C/W CONTINUOUS AIR RELIEF FUNCTION 200PSI OR SIMILAR	No	2	
H	50MM X 0.30M GALVANISED RISER PIPE	No	2	
J	50MM BALL VALVE	No	2	
K	CONSUMABLES			SUM
L	250MM ROUND VALVE BOX	No	2	
M	63MM X 3/4" SAB HIGH PRESSURE SADDLE (PN16)	No	11	
N	20MM TURF VALVES	No	11	
P	20MM COMPACT BALL VALVES THREADED	No	11	
Q	20MM SWING JOINT RISERS	No	11	
R	TURF VALVE KEY	No	3	
S	250MM ROUND VALVE BOX	No	11	
T	LABOUR P & G site establishment ,health and safety etc	No	1	
U	12 Months maintainence for landscaping and irrigation	No	1	
V	Locate water connection points	No	6	
W	Locate & open sleeves	No	11	
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	Bill No. 2 DEPOT AUTOMATED IRRIGATION 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES			

A	Trench , install , backfill and compact PVC-U/ HDPE mainline pipes & cable sleeve - 600mm cover	m	400	
B	Trench , install , backfill and compact HDPE/ LDPE lateral pipes - 400mm cover	m	1,300	
C	Installation of Solenoid Valves	No	15	
D	Installation of Dripper Pipe	No	1,100	
E	Installation of Battery Operated Solenoid Valves	No	5	
F	Installation of Air Valves and turf valves	No	13	
G	Site inspection during implementation and final site visit on completion of installation/hand over	No	1	
H	Commissioning of system	No	1	
J	Design Fee payable to Controlled Irrigation (Should all materials be purchased from Controlled Irrigation Design fee is waived)	No	1	
K	Preparation of as built documentation (It is the Irrigation Contractors responsibility to produce accurate as-built drawings. The contractor shall keep a continuous record on site of all changes made to the design, as the installation progresses. These changes shall be recorded in an electronic as-built drawing to scale at the end of the installation and/or at the end of each phase of the installation)	No	1	
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Bill No. 2 DEPOT AUTOMATED IRRIGATION 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES				

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PROVISIONAL BILLS OF QUANTITIES

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Item No		Quantity	Rate	Amount
	<u>IRRIGATION</u>			
	<u>MAINLINE</u>			
A	WATER CONNECTION EXISTING MAINLINE IN DEPOT	No	2	
B	50MM PE 100 PN 10 HDPE SABS PIPE	m	300	
C	50MM PERLA COUPLING	No	3	
D	50MM PERLA ELBOW	No	4	
E	50MM PERLA TEE	No	2	
F	50MM PERLA PLUG	No	2	
G	63MM X 50MM PERLA REDUCING COUPLING	No	2	
H	50MM X 2" PERLA MALE ADAPTOR	No	4	
J	50MM GALVANISED BARREL NIPPLE	No	2	
K	50MM CHROME PLATED BALL VALVE (FULL BORE)	No	2	
L	RAINBIRD 430 X 300MM X 300MM DEEP VALVE BOX ECONO	No	2	
	<u>AIR VALVES AND TURF VALVES</u>			
M	50MM X 3/4" SAB HIGH PRESSURE SADDLE (PN16)	No	12	
N	20MM TURF VALVES	No	12	
P	20MM COMPACT BALL VALVES THREADED	No	12	
Q	20MM SWING JOINT RISERS	No	12	
R	TURF VALVE KEY	No	2	
S	250MM ROUND VALVE BOX	No	12	
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WETLAND IRRIGATION TURF VALVES

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WETLAND IRRIGATION TURF VALVES

176Q/2023/24

PROVISIONAL BILLS OF QUANTITIES

Item No		Quantity	Rate	Amount
	<u>2.1 EMBANKMENT</u>			
	<u>CONDITIONS OF CONTRACT, PRELIMINARY AND GENERAL ITEMS.</u>			
A	Allow for compliance with specifications, all the conditions of contract and preliminary and general items. Allowance for site establishment and liaison with other contractors on site. Refer to Preliminaries in this document for pricing.			SUM
	<u>SCREENING EMBANKMENT PLANTING (1318m²)</u>			
	<u>SOIL PREPARATION</u>			
	Unit rates of all soil preparation to include supply, transport, ripping, tilling, placement, cultivation, mixing, excavation, backfilling of various soil layers, all other labour related costs and all items as per the General and Detail Specifications.			
	<u>Compost</u>			
B	Supply and dig in a 50mm layer of medium grade compost to embankment and dig in to a depth of 350mm (1320m ²)	m ³	66	
C	Supply and install a mix of topsoil (70%) and medium grade compost (30%) as backfill to retaining blocks	m ³	40	
D	Supply and lay a 25mm layer of coarse grade compost to completed planting areas (1320m ²)	m ³	33	
E	Import and mix medium grade compost into backfill of tree holes at 30% per tree hole. Sample to be approved prior to imporation to the site.	m ³	5	
	<u>FERTILISERS</u>			
	Allow for the supply, spreading and dig in to a depth of 350mm of Fertilisers during the soil preparation process. Manufacturer specification to be followed.			
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	Bill No. 2 EMBANKMENT 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES			

A	cuttings @ 8/m ²	No	1,267	
B	4lt ground covers @ 5/m ²	No	1,188	
	<u>Retaining block planting (every second block)</u>			
C	6 pack plantlets as per plant list	No	2,410	
	<u>Tree staking</u>			
	Allow for the supply of material and installation of single and double tree staking units with cross braces as per tree staking details to all trees.			
D	Single tree staking	No	9	
E	Double tree staking	No	12	
	<u>HARD LANDSCAPING</u>			
F	The contractor shall supply and install geojute/soil saver to approved sample to embankment. Refer to Detail Specifications 9.3	m ²	1,320	
G	The contractor shall supply material and install log stabilisation to slope with tanalith treated poles, 100mm diameter, spaced 2m apart horizontally. Logs to be secured with 40mm diameter tanalith treated droppers, 600mm long, driven into the ground. Refer to detail drawing and Detail Specification 9.3	l/m	668	
	<u>IRRIGATION</u>			
	Supply and install irrigation as per irrigation specifications and bill of quantities			
	Attendance fee on item 4.1 for irrigation sub-contract if applicable			
	<u>MAINTENANCE</u>			
	Allow for fully comprehensive maintenance as per maintenance specifications & maintenance bill of quantities (12 Months)			
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<u>PLANTING AREAS:</u>			
A	Weeding of bed areas & retaining block wall (2x/mnth for 12 mnths)	m ²	2,000
<u>Pruning</u>			
B	Trees	months	12
C	Shrubs	months	12
D	Composting (25 mm layer in August) : 30% of area depending on growth; bed areas only	m ³	66
<u>Fertilisers</u>			
E	Rapid Raiser (3:3:3) organic fertiliser @ 50g/m ²	kg	100
F	Tree stakes and ties (12 Mnths)	No	21
<u>LAWN</u>			
G	Mowing (June-Oct x 1/mnth; Nov-May x 2/mnth)	m ²	
<u>Fertilisers (Ex Neutrog)</u>			
H	UPSURGE @ 100g/m ² (May & Sep)	kg	
J	BLADE RUNNER(3:1:2) @ 100g/m ² (July & Nov)	kg	
K	Weeding	m ²	
L	Topdressing	m ³	
<u>PESTS AND DISEASE</u>			
M	Monitoring	months	12
N	Spraying: as required; IF ANY	months	12
<u>LITTER</u>			
P	Litter removal from landscape areas (1 x per month)	months	12
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Bill No. 2 EMBANKMENT 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES			

IRRIGATION

A	Hand Watering	months	1
B	Automatic irrigation system - monitoring and adjusting By irrigation contractor as per irrigation and maintenance specifications	months	12

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EMBANKMENT
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EMBANKMENT

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EMBANKMENT

176Q/2023/24

PROVISIONAL BILLS OF QUANTITIES

<u>IRRIGATION</u>				
A	Supply material and install a drip irrigation system with battery operated valves to roof planters as per irrigation bill and specifications			SUM
B	Attendance fee on sub-contract		%	
<u>MAINTENANCE</u>				
Allow for fully comprehensive maintenance as per maintenance specifications allowance for maintenance at heights; refer to maintenacne bill of quantities (12 Months)				
<u>PLANTING AREAS:</u>				
C	Weeding of bed areas & Planters (2x/mnth for 12 mnths)	m ²	310	
<u>Pruning</u>				
D	Trees	months		
E	Shrubs & ground covers : allowance if required	months	1	
F	Composting (25 mm layer in August) : allow for raking peach pips depending on coverage and cover area with mulch	m ³	8	
<u>Fertilisers</u>				
G	Rapid Raiser (3:3:3) organic fertiliser @ 50g/m ²	kg	16	
H	Tree stakes and ties (12 Mnths)	No		
<u>LAWN</u>				
J	Mowing (June-Oct x 1/mnth; Nov-May x 2/mnth)	m ²		
K	Fertilisers (Ex Neutrog) UPSURGE @ 100g/m ² (May & Sep)	kg		
L	BLADE RUNNER(3:1:2) @ 100g/m ² (July & Nov)	kg		
M	Weeding	m ²		
N	Topdressing	m ³		
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Bill No. 3 ROOF GARDENS 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES				

PESTS AND DISEASE

A	Monitoring	months	12
B	Spraying: as required; IF ANY	months	12

LITTER

C	Litter removal from landscape areas (1 x per month)	months	12
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IRRIGATION

D	Hand Watering	months	1
E	Automatic irrigation system - monitoring and adjusting By irrigation contractor; dripper lines to be checked and secured ; battery valves: provision for battery replacement	months	12

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ROOF GARDENS
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ROOF GARDENS

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Bill No. 3

ROOF GARDENS

176Q/2023/24

PROVISIONAL BILLS OF QUANTITIES

Item No		Quantity	Rate	Amount
	<u>2.3 GENERAL PLANTING AREAS GROUND LEVEL (232m²)</u>			
	<u>CONDITIONS OF CONTRACT, PRELIMINARY AND GENERAL ITEMS.</u>			
A	Allow for compliance with specifications, all the conditions of contract and preliminary and general items. Allowance for site establishment and liaison with other contractors on site. Refer to Preliminaries in this document for pricing.		SUM	
	<u>SOIL PREPARATION</u>			
	Unit rates of all soil preparation to include supply, transport, ripping, tilling, placement, cultivation, mixing, excavation, backfilling of various soil layers, all other labour related costs and all items as per the General			
	<u>Compost</u>			
B	Supply and dig in a 50mm layer of medium grade compost to planters and planting beds;dig in to a depth of 350mm (232m ²)	m ³	12	
C	Supply and install a mix of topsoil (70%) and medium grade compost (30%) as backfill to built planters (500mm depth) 10% settlement allowance	m ³	24	
D	Supply and lay a 25mm layer of coarse grade compost to completed planting areas (232m ²)	m ³	6	
E	Import and mix medium grade compost into backfill of tree holes at 30% per tree hole. Sample to be approved prior to importation to the site.	m ³	2	
	<u>Fertilisers</u>			
	Allow for the supply, spreading and dig in to a depth of 350mm of Fertilisers during the soil preparation process. Manufacturer specification to be followed.			
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	Bill No. 4 GENERAL PLANTING 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES			

<u>Trees (6No)</u>					
A	Rapid Raiser (3:3:3) organic fertiliser @ 100g/tree	kg	1		
B	Bonemeal @ 150g/tree	kg	1		
<u>Shrubs and ground covers (232m²)</u>					
C	Rapid Raiser (3:3:3) organic fertiliser @ 100g/m ²	kg	23		
D	Bonemeal @ 100g/m ²	kg	23		
<u>Fine Grading</u>					
E	Fine grading and final finishing off of all planting areas	m ²	232		
<u>PLANTING</u>					
Unit rates of all plants to include excavation of plant holes, mixing of fertilisers and additives with in-situ soil, backfilling of mixture and all other labour-related costs. See Plant List, Plant Plans and specifications.					
REFER TO PLANT LIST					
<u>Trees:</u>					
F	100lt trees	No	6		
<u>Shrubs & ground covers (232m²)</u>					
<u>SHRUBS (30% of area = 70m²)</u>					
G	4lt shrubs @ 2/m ²	No	140		
<u>Ground covers (70% of area = 162m²)</u>					
H	6 pack plants @ 5/m ²	No	324		
J	bulbs interplanted (3/m ²)	No	20		
K	4lt ground covers @ 5/m ²	No	486		
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Bill No. 4 GENERAL PLANTING 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES				R	

<u>Tree staking</u>				
Allow for the supply of material and installation of single and double tree staking units with cross braces as per tree staking details to all trees.				
A	Single tree staking	No		
B	Double tree staking	No	6	
<u>IRRIGATION</u>				
C	Supply and intall irrigation to ALL areas as per irrigation bill of quantities and specifications, refer to Irrigation layout	m ²		
D	Attendance fee on sub-contract		%	
<u>MAINTENANCE</u>				
E	Allow for fully comprehensive maintenance as per maintenance specifications & maintenance bill of quantities (12 Months)	months	12	
<u>PLANTING AREAS:</u>				
F	Weeding of bed areas & Planters (2x/mnth for 12 mnths)	m ²	232	
<u>Pruning</u>				
G	Trees	months	12	
H	Shrubs & ground covers : allowance if required	months	12	
J	Composting (25 mm layer in August) : 30% of area	m ³	2	
<u>Fertilisers</u>				
K	Rapid Raiser (3:3:3) organic fertiliser @ 50g/m ²	kg	12	
L	Tree stakes and ties (12 Mnths)	No	6	
<u>LAWN</u>				
M	Mowing (June-Oct x 1/mnth; Nov-May x 2/mnth)	m ²		
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GENERAL PLANTING

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Bill No. 4

GENERAL PLANTING

176Q/2023/24

PROVISIONAL BILLS OF QUANTITIES

<u>PLANTING</u>				
Unit rates of all plants to include excavation of plant holes, mixing of fertilisers and additives with in-situ soil, backfilling of mixture and all other labour-related costs. See Plant List, Plant Plans and specifications.				
REFER TO PLANT LIST				
A	Supply and lay Cynodon dactylon sods in a checker board fashion to pond slopes (685m ²)	m ²	343	
<u>Supply and plant polishing plants to floor of detention pond (125m²)</u>				
B	plugs @ 5/m ²	No	372	
C	4lt @ 3/m ²	No	150	
<u>IRRIGATION</u>				
D	Supply and install a turf valve system as per irrigation bill of quantities, specifications and layout			SUM
E	Attendance fee on item 4.1 for irrigation sub-contract if applicable		%	
MAINTENANCE Allow for fully comprehensive maintenance as per maintenance specifications - period of 12 months.				
<u>PLANTING AREAS: FLOOR OF POND</u>				
F	Weeding of floor (12 Months)	m ²	125	
<u>LAWN SODS TO POND SLOPES</u>				
G	Brush cutting of Cynodon (1x/2 mnth)	m ²	685	
<u>Fertilisers</u>				
<u>Bio Ganic Lawn, ex Atlantic Fertilisers @ 100g/m² (May & Sep)</u>				
H	a) May application	kg		
J	b) September application	kg		
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Bill No. 5 DETENTION POND 176Q/2023/24 PROVISIONAL BILLS OF QUANTITIES				

**CONSTRUCTION OF NEW NOORDHOEK SATELLITE DEPOT
ERF 17949 FISH HOEK**

A	Weeding (1 x month)	m ²	685	
B	Topdressing: 5mm in August	m ³		
<u>PESTS AND DISEASE</u>				
C	Monitoring	months	12	
D	Spraying: as required; if any (kikuyu & weeds)	months	12	
<u>LITTER</u>				
E	Litter removal from pond area and bays (2 x per month)	months	12	
<u>IRRIGATION</u>				
F	Hand Watering of banks and floor (allow as required)	months	12	
G	Automatic irrigation system - monitoring and adjusting	months	12	
<u>POND INLETS/BAYS</u>				
H	Cleaning stormwater channels and inlets	months	12	
J	Allow for the spraying of herbicide on paved sidewalks	months	6	
K	SEDIMENT CLEARING Allow for removal of any sediment buildup and Typha/Phragmites present in the stormwater inlets & bays (2 x per month)			SUM
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Bill No. 5
DETENTION POND
176Q/2023/24
PROVISIONAL BILLS OF QUANTITIES

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Bill No. 5

DETENTION POND

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Bill No. 5

DETENTION POND

176Q/2023/24

PROVISIONAL BILLS OF QUANTITIES

<u>Shrubs and ground covers (1994m²)</u>				
A	Rapid Raiser (3:3:3) organic fertiliser @ 100g/m ²	kg	195	
B	Bonemeal @ 100g/m ²	kg	195	
<u>Fine Grading</u>				
C	Fine grading and final finishing off of all planting areas	m ²	1,994	
<u>PLANTING</u>				
Unit rates of all plants to include excavation of plant holes, mixing of fertilisers and additives with in-situ soil, backfilling of mixture and all other labour-related costs. See Plant List, Plant Plans and specifications.				
REFER TO PLANT LIST				
<u>Trees:</u>				
D	20lt	No	30	
E	50lt	No	20	
<u>Shrubs & ground covers (1994m²)</u>				
<u>SHRUBS (40% of area = 797m²)</u>				
F	4lt shrubs @ 2/m ²	No	797	
G	4lt shrubs @ 1/m ²	No	398	
<u>Ground covers (60% of area = 1196m²)</u>				
H	6 pack plants @ 5/m ²	No	2,691	
J	bulbs interplanted (3/m ²)	No	179	
K	cuttings @ 8/m ²	No	1,913	
L	4lt ground covers @ 5/m ²	No	1,794	
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Allow for the supply of material and installation of single and double tree staking units with cross braces as per tree staking details to all trees.

A	Single tree staking	No	30
B	Double tree staking	No	20

IRRIGATION

Supply and install irrigation as per irrigation specifications and bill of quantities

Attendance fee on item 4.1 for irrigation sub-contract if applicable

MAINTENANCE

Allow for fully comprehensive maintenance as per maintenance specifications & maintenance bill of quantities (12 Months)

PLANTING AREAS:

C	Weeding of bed areas & Planters (2x/mnth)	m ²	1,994
D	Pruning Trees	months	12
E	Shrubs & ground covers : allowance if required	months	12
F	Composting (25 mm layer in August) : 30% of area	m ³	15

Fertilisers

G	Rapid Raiser (3:3:3) organic fertiliser @ 50g/m ²	kg	100
H	Tree stakes and ties	No	50

LAWN

J	Mowing (June-Oct x 1/mnth; Nov-May x 2/mnth)	m ²	
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Fertilisers (Ex Neutrog)

K	UPSURGE @ 100g/m ² (May & Sep)	kg	
L	BLADE RUNNER(3:1:2) @ 100g/m ² (July & Nov)	kg	

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Bill No. 6
SCREEN PLANTING
176Q/2023/24
PROVISIONAL BILLS OF QUANTITIES

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Bill No. 6

SCREEN PLANTING

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Bill No. 6

SCREEN PLANTING

176Q/2023/24

PROVISIONAL BILLS OF QUANTITIES

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Item No		Quantity	Rate	Amount
	<u>PLANT LIST</u>			
	<u>WETLAND REHABILITATION SPECIES</u>			
	(NOTE: species to be approved)			
A	Berzelia abrotanoides (3/m ²) - Size 1lt	No		RATE ONLY
B	Carex clavata (3/m ²) - Size 1lt	No		RATE ONLY
C	Cliffortia strobilifera (3/m ²) - Size 6 pack	No		RATE ONLY
D	Ficinia nodosa (3/m ²) - Size 6 pack	No		RATE ONLY
E	Juncus effusus (3/m ²) - Size 1lt	No		RATE ONLY
F	Morella quercifolia (3/m ²) - Size 6 pack	No		RATE ONLY
G	Orphium frutescens (3/m ²) - Size 1lt	No		RATE ONLY
H	Plecostachus serpyllifolia (1/m ²) - Size 1lt	No		RATE ONLY
J	Psoreala pinnata (3/m ²) - Size 6 pack	No		RATE ONLY
K	Villarsia capensis (1/m ²) - Size 6 pack	No		RATE ONLY
L	Bolboschoenus maritimus (3/m) - Size o/g	No		RATE ONLY
M	Schoenoplectus scirpoides (3/m) - Size o/g	No		RATE ONLY
N	Zantedeschia aethiopica (3/m ²) - Size 1lt	No		RATE ONLY
P	Falkia repens (3/m ²) - Size 6 pack	No		RATE ONLY
	<u>Fynbos Rehabilitation area (18,133m²)</u>			
	(NOTE: species to be approved)			
Q	Asparagus capensis (3/m ²) - Size 6 pack	No		RATE ONLY
R	Asparagus rubicundus (3/m ²) - Size 6 pack	No		RATE ONLY
S	Brunsvigia orientalis (1/m ²) - Size o/g	No		RATE ONLY
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**CONSTRUCTION OF NEW NOORDHOEK SATELLITE DEPOT
ERF 17949 FISH HOEK**

A	<i>Capporotus acinaciformis</i> (3/m) - Size cuttings	No			RATE ONLY
B	<i>Carpobrotus edulis</i> (3/m) - Size cuttings	No			RATE ONLY
C	<i>Chasmanthe aethiopica</i> (3/m ²) - Size bulb	No			RATE ONLY
D	<i>Elegia tectorum</i> (1/m) - Size 1lt	No			RATE ONLY
E	<i>Eriocephalus africanus</i> (1/m ²) - Size 1lt	No			RATE ONLY
F	<i>Euclea racemosa</i> (1/m ²) - Size 1lt	No			RATE ONLY
G	<i>Haemanthus snaguineus</i> (1/m ²) - Size bulb	No			RATE ONLY
H	<i>Helichrysum pandurifolium</i> (2/m ²) - Size 1lt	No			RATE ONLY
J	<i>Jordaaniella dubia</i> (3/m ²) - Size 6 pack	No			RATE ONLY
K	<i>Metalasia muricata</i> (1/m ²) - Size 1lt	No			RATE ONLY
L	<i>Monopsis lutea</i> (3/m) - Size 6 pack	No			RATE ONLY
M	<i>Morella cordifolia</i> (2/m) - Size 1lt	No			RATE ONLY
N	<i>Muraltia spinosa</i> (1/m ²) - Size 1lt	No			RATE ONLY
P	<i>Osteospermum moniliferum</i> (1/m ²) - Size 6 pack	No			RATE ONLY
Q	<i>Pelargonium capitatum</i> (1/m ²) - Size 6 pack	No			RATE ONLY
R	<i>Pteroclasturs tricuspidatus</i> - Size 4lt	No			RATE ONLY
S	<i>Ruschia macowanii</i> (3/m) - Size 6 pack	No			RATE ONLY
T	<i>Salvia africana-lutea</i> (1/m) - Size 1lt	No			RATE ONLY
U	<i>Searsia crenata</i> (1/m ²) - Size 1lt	No			RATE ONLY
V	<i>Searsia glauca</i> (1/m ²) - Size 1lt	No			RATE ONLY
W	<i>Searsia lucida</i> - Size 4lt	No			RATE ONLY
X	<i>Thamnochortus spicigerus</i> (1/m ²) - Size 1lt	No			RATE ONLY
Y	<i>Trachyandra divaricata</i> (3/m) - Size 6 pack	No			RATE ONLY

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Bill No. 1
MASTER PLANT LIST
176Q/2023/24
PROVISIONAL BILLS OF QUANTITIES

TREES: FYNBOS REHABILITATION

A	Sideroxylon inerme - Size 20lt	No	RATE ONLY
B	Tarchonanthus camphoratus - Size 10lt	No	RATE ONLY
C	Olea europaea subsp. Africana - Size 20lt	No	RATE ONLY

EMABANKMENT PLANTING

TREES

D	Sideroxylon inerme - Size 50lt	No	RATE ONLY
E	Tarchonanthus camphoratus - Size 20lt	No	RATE ONLY
F	Olea europaea subsp. Africana - Size 50lt	No	RATE ONLY
G	Buddleya saligna 'single stem - Size 20lt	No	RATE ONLY

SHRUBS & GROUND COVERS

H	Asparagus capensis (3/m ²) - Size 4lt	No	RATE ONLY
J	Caprporotus acinaciformis (3/m) - Size cuttings	No	RATE ONLY
K	Carpobrotus edulis (3/m)	No	RATE ONLY
L	Chasmanthe aethiopica (3/m ²) - Size bulb	No	RATE ONLY
M	Elegia tectorum (1/m) - Size 4lt	No	RATE ONLY
N	Eriocephalus africanus (1/m ²) - Size 4lt	No	RATE ONLY
P	Euclea racemosa (1/m ²) - Size 4lt	No	RATE ONLY
Q	Helichrysum pandurifolium (2/m ²) - Size 4lt	No	RATE ONLY
R	Jordaaniella dubia (3/m ²) - Size 6 pack	No	RATE ONLY
S	Metalasia muricata (1/m ²) - Size 4lt	No	RATE ONLY
T	Morella cordifolia (2/m) - Size 4lt	No	RATE ONLY
U	Muraltia spinosa (1/m ²) - Size 4lt	No	RATE ONLY

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Bill No. 1
MASTER PLANT LIST
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A	Osteospermum moniliferum (1/m ²) - Size 4lt	No		RATE ONLY
B	Pelargonium capitatum (1/m ²) - Size 4lt	No		RATE ONLY
C	Ruschia macowanii (3/m) - Size 6 pack	No		RATE ONLY
D	Salvia africana-lutea (1/m) - Size 4lt	No		RATE ONLY
E	Searsia crenata (1/m ²) - Size 4lt	No		RATE ONLY
F	Searsia glauca (1/m ²) - Size 4lt	No		RATE ONLY
G	Searsia lucida - Size 4lt	No		RATE ONLY
H	Thamnochortus spicigerus (1/m ²) - Size 4lt	No		RATE ONLY
<u>RETAINING BLOCK WALL PLANTS</u>				
J	1 plant per block Caprporotus acinaciformis - Size cuttings	No		RATE ONLY
K	Carpobrotus edulis - Size cuttings	No		RATE ONLY
L	Jordaaniella dubia - Size 6 pack	No		RATE ONLY
M	Dimorphoteca fruticosum - Size 6 pack	No		RATE ONLY
N	Arctotis acaulis 'pink' - Size 6 pack	No		RATE ONLY
P	Plectranthus neochilus - Size 6 pack	No		RATE ONLY
<u>ROOF GARDENS (306m²)</u>				
<u>SHRUBS & GROUND COVERS</u>				
Q	Caprporotus acinaciformis (6/m ²) - Size 6 pack	No		RATE ONLY
R	Carpobrotus edulis (6/m ²) - Size 6 pack	No		RATE ONLY
S	Jordaaniella dubia (6/m ²) - Size 6 pack	No		RATE ONLY
T	Ruschia macowanii (6/m ²) - Size 6 pack	No		RATE ONLY
U	Dimorphoteca fruticosum (6/m ²) - Size 6 pack	No		RATE ONLY

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MASTER PLANT LIST
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A	Arctotis acaulis 'pink' (6/m ²) - Size 6 pack	No		RATE ONLY
B	Plectranthus neochilus (6/m ²) - Size 6 pack	No		RATE ONLY
C	Pelargonium capitatum (1/m ²) - Size 4lt	No		RATE ONLY
D	Aristida junciformis (5/m ²) - Size 4lt	No		RATE ONLY
E	Helichrysum petiolare (3/m ²) - Size 4lt	No		RATE ONLY
F	Barleria repens Purple Prince (3/m ²) - Size 4lt	No		RATE ONLY
G	Chasmanthe aethiopica (3/m ²) - Size bulb	No		RATE ONLY
<u>GENERAL PLANTING AREAS GROUND LEVEL (232m²)</u>				
<u>TREES</u>				
H	Sideroxylon inerme - Size 100lt	No		RATE ONLY
J	Tarchonanthus camphoratus - Size 100lt	No		RATE ONLY
<u>SHRUBS & GROUND COVERS</u>				
K	Caprporotus acinaciformis (6/m ²) - Size 6 pack	No		RATE ONLY
L	Carpobrotus edulis (6/m ²) - Size 6 pack	No		RATE ONLY
M	Jordaniella dubia (6/m ²) - Size 6 pack	No		RATE ONLY
N	Ruschia macowanii (6/m ²) - Size 6 pack	No		RATE ONLY
P	Dimorphoteca fruticosum (6/m ²) - Size 6 pack	No		RATE ONLY
Q	Arctotis acaulis 'pink' (6/m ²) - Size 6 pack	No		RATE ONLY
R	Plectranthus neochilus (6/m ²) - Size 6 pack	No		RATE ONLY
S	Pelargonium capitatum (1/m ²) - Size 4lt	No		RATE ONLY
T	Aristida junciformis (5/m ²) - Size 4lt	No		RATE ONLY
U	Helichrysum petiolare (3/m ²) - Size 4lt	No		RATE ONLY
V	Barleria repens Purple Prince (3/m ²) - Size 4lt	No		RATE ONLY

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MASTER PLANT LIST
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PROVISIONAL BILLS OF QUANTITIES

**CONSTRUCTION OF NEW NOORDHOEK SATELLITE DEPOT
ERF 17949 FISH HOEK**

A	Metalasia muricata (1/m ²) - Size 4lt	No		RATE ONLY
B	Morella cordifolia (2/m) - Size 4lt	No		RATE ONLY
C	Muraltia spinosa (1/m ²) - Size 4lt	No		RATE ONLY
D	Osteospermum moniliferum (1/m ²) - Size 4lt	No		RATE ONLY
E	Pelargonium capitatum (1/m ²) - Size 4lt	No		RATE ONLY
F	Ruschia macowanii (3/m) - Size 6 pack	No		RATE ONLY
G	Salvia africana-lutea (1/m) - Size 4lt	No		RATE ONLY
H	Searsia crenata (1/m ²) - Size 4lt	No		RATE ONLY
J	Searsia glauca (1/m ²) - Size 4lt	No		RATE ONLY
K	Searsia lucida - Size 4lt	No		RATE ONLY
L	Thamnochortus spicigerus (1/m ²) - Size 4lt	No		RATE ONLY

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MASTER PLANT LIST

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MASTER PLANT LIST

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