

ITEM NO	DESCRIPTION	UNIT	QTY	RATE	AMOUNT
	<u>SECTION NO. 1</u>				
	<u>BILL NO. 1</u>				
	<u>PRELIMINARIES</u>				
	<u>FIXED CHARGES ITEMS</u>				
	<u>Establish Facilities on Site</u>				
1	Contractual Requirements	SUM	1	R	-
2	Site Offices and Storage Sheds including temporary fencing.?	SUM	1	R	-
3	Ablution and latrine facilities?	SUM	1	R	-
4	Tools and Equipment?	SUM	1	R	-
5	Establishment of Plant on Site?	SUM	1	R	-
6	Electrical power and communications	SUM	1	R	-
	<u>OTHER FIXED CHARGES</u>				
7	Remove contractor's site establishment on completion including making good and restoring the site to the satisfaction of the Client/Engineer.	SUM	1	R	-
	<u>TIME RELATED ITEMS</u>				
	<u>Operate and maintain facilities on site for the duration of construction facilities for contractor</u>				
8	Site Offices and Storage Sheds?	Month	8	R	-
9	Security (24/7), two (2) security guards at all times ?	Month	8	R	-
	Carried Forward			R	-
	Section No.1 PRELIMINARIES				

Bill No.1

Preliminaries

ESKOM ROSHERVILLE TSS SPRAY BOOTH

Brought Forward

R

-

10 Ablution and latrine facilities²

Month

8

R

-

11 Tools and Equipment²

Month

8

R

-

12 Water Supply²

Month

8

R

-

13 Electric power and communications / cell phones etc²

Month

8

R

-

14 Company/head office overhead cost.²

Month

8

R

-

15 Living accomodation

Month

8

R

-

16 Supervision

Month

8

R

-

HEALTH AND SAFETY

19 Prepare, submit and obtain approval of safety plan/file and lodge same on site.

SUM

1

R

-

20 Personal Protective Equipment

SUM

1

R

-

21 Transportation of Employees

Month

8

R

-

22 Medicals and competency Trainings

Sum

1

R

-

Carried Forward

R

-

Section No.1

PRELIMINARIES

Bill No.1

Preliminaries

ESKOM ROSHERVILLE TSS SPRAY BOOTH

Brought Forward

R

-

COC CERTIFICATES



23	On completion of each distribution board installation etc. as required in terms of the regulations, issue a Certificate of Compliancefor each of the installations provided.	item	1		R	-
24	As-built Drawings (Sets of Drawings to Scale)	set	3		R	-
Preliminary and General Carried to Main Summary					R	-
PART 1: SPRAYBOOTH STRUCTURAL AND CIVIL WORKS						
ITEM NO	DESCRIPTION	UNIT	QTY		AMOUNT	
<u>SECTION NO. 2</u> <u>BILL NO 1</u> <u>ALTERATIONS</u> For preambles see "Model Preambles for Trades (2008 Edition)" and Supplementary preambles as specified in the Trades. TENDERERS ARE TO NOTE THAT ALL WORK IS TO BE EXECUTED IN EXISTING BUILDINGS IN A COMBINATION OF NEW WORK, WORK IN PATCHES AND WORK IN SMALL QUANTITIES. <u>Site inspection</u> The Tenderer is advised to visit the site, inspect the existing premises and acquaint himself thoroughly with the nature of the work specified. <u>Sizes and dimensions</u> All sizes and dimensions stated herein are approximate and deemed only sufficient to identify the item of work concerned.						

No allowance for overbreak has been made to any of the adjoining structures, walls, finishes, etc., where removals or pockets occur (the nett opening size, etc., has been made good in later items of this bill where such making good has not been included with the item) and the Contractor must allow in his prices for making good any overbreak that may occur.

Materials

Old materials from alterations, except where described to be re-used or handed over, become the property of the contractor.

Old materials from the alterations, except where described to be re-used or handed over, as well as all rubbish, etc., must be regularly carted from the site and not be allowed to accumulate on or around the site.

None of the old materials are to be used for new work except where specifically described as being set aside for

Where certain materials or articles from demolitions or alterations are described as to be handed over by the Contractor to the Client, such materials or articles shall be properly stored by the Contractor, until handing over thereof. The Contractor must obtain an official receipt listing the materials or articles and dates of handing over. If the Contractor fails to submit the receipt when requested to do so, it shall be deemed that the materials or articles are still in his possession and he will be held liable to the Client for the full replacement value thereof, which amount will be deducted from any monies due to the Contractor.

General

All new finishes are measured in the relevant trades for new work.

Allow for watering the works sufficiently to prevent nuisance from dust.



All alteration works described hereunder shall imply the use of an approved screed or plaster repairing compound and preparing existing surfaces to receive new.

Provide all necessary propping, etc., required to ensure the safety and stability of the structure during the contract period and remove at completion.

Provide all necessary additional barricades, screens, overhead protections, etc., required to ensure the safety of persons, property, etc., and remove at completion.

All alteration work is within an existing facility. The contractor shall take utmost care to minimise damage to existing completed works in the vicinity of the alteration

REMOVAL OF EXISTING WORK

Temporary barriers, screens, etc including removal

1	Dust screen 3000mm high between concrete floor and ceiling formed of suitable timber framing with 250 micron polyethylene sheeting / net stapled on including corners, ends, etc	m	80	R	-
---	--	---	----	---	---

REMOVAL OF EXISTING WORK

Breaking up and removing mass concrete

2	250mm Thick surface bed	m ²	10	R	-
---	-------------------------	----------------	----	---	---

Breaking down and removing brickwork etc

3	One brick wall	m ²	88	R	-
---	----------------	----------------	----	---	---

Taking out and removing doors, windows, etc including thresholds, sills, etc, set aside for later re-use at same position.

4	Steel roller shutter door	No	2	R	-
---	---------------------------	----	---	---	---

Taking down and removing roofs, floors, panelling, ceilings, partitions, etc

5	Roof covering	m ²	200	R	-
---	---------------	----------------	-----	---	---

6	Roof cladding	m ²	200	R	-
7	Steel structure	m ²	200	R	-
<u>TRANSPORT OF MATERIALS</u>					
8	Transport removed materials, debris etc to dumping site (Provisional).	SUM	1	R	-
Carried Forward to Summary of Section No. 2				R	-
<u>SECTION NO.2</u>					
<u>BUILDING WORK</u>					
<u>BILL NO.2</u>					
<u>EARTHWORKS</u>					
For preambles see "Model Preambles for Trades (2008 Edition)" and Supplementary preambles as specified in the					

<u>SUPPLEMENTARY PREAMBLES</u>					
<u>Nature of ground</u>					
The nature of the ground is assumed to be sandy weathered granite, therefore "earth", but possibly interspersed with "hard rock"					
<u>Excavation for working space in rock</u>					
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					
<u>Site Clearance</u>					



1	Digging up and removing rubbish, debris, vegetation, hedges, shrubs and trees not exceeding 200mm girth, bush, etc.	m ²	105	R	-
	Carried Forward			R	-
	Brought Forward			R	-
	<u>Carting away of excavated material</u>				
	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				
	<u>Filling</u>				
	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				
	<u>Soil poisoning</u>				
	Ant and weed poisoning will be applied in accordance to SABS specifications by Registered and Approved Specialists who will issue a five (5) year guarantee. The contractor will only be paid for this items once they have produced the said certificate to the Principal Agent				
	<u>EXCAVATION, FILLING, ETC</u>				
	<u>Excavate in all materials and use for embankment or backfill or dispose, as ordered?</u>				
1	Foundation Based?	m ³	5	R	-
2	Strip Foundations?	m ³	10	R	-

3	Bases	m ³	2	R	-
	<u>Extra-over for</u>				
4	Intermediate excavation	m ³	10	R	-
5	Hard rock excavation	m ³	1	R	-
	Carried Forward			R	-
	Brought Forward			R	-
	<u>Restricted excavation</u>				
	<u>Excavate for restricted foundations, footings and pipe trenches in all materials and use for backfill or embankment or dispose</u>				
6	Bases Near Existing Structure	m ³	5	R	-
	<u>Importing of materials</u>				
	Extra-over for importation of materials from commercial sources or from borrow pits				
7	From commercial source	m ³	10	R	-
	<u>Existing services</u>				
	<u>Location</u>				
8	Supply (unless hired under item below) of specialist equipment for detection	SUM	1	R	-
9	The use or hire of specialist equipment for detection (unit may also be sum)	Hrs	10	R	-
10	Excavate by hand in soft material to expose Existing service (als o measured as day work)	m ³	20	R	-
	Carried Forward to Summary of Section No. 2			R	-

SECTION NO.2

BUILDING WORK

BILL NO.3

CONCRETE, FORMWORK AND REINFORCEMENT

For preambles see "Model Preambles for Trades (2008 Edition)" and Supplementary preambles as specified in the

SUPPLEMENTARY PREAMBLES

Cost of tests

The costs of making, storing and testing of concrete test cubes as required under clause 7 "Tests" of SABS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests to the architect. The testing shall be undertaken by an independent firm or institution nominated by the contractor and to the approval of the

Breeze concrete shall consist of twelve parts clean dry furnace ash, free from coal or other foreign matter, to one part cement (12:1), the ash graded up to particles which will pass a 16,5mm ring from a minimum which fails to pass a 4,75mm mesh. The finer materials from the screening are to be first mixed with the cement into a mortar and the ash added afterwards and thoroughly incorporated

Formwork

Description of formwork shall be deemed to include use and waste only (except where described as "left in" or "permanent"), for fitting together in the required forms, wedging, plumbing and fixing to true angles and surfaces as necessary to ensure easy release during stripping and for reconditioning as necessary before re-use



The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damage and shall remain in position until the newly constructed work is able to support itself

Formworks to soffits of solid slabs etc shall be deemed to be slabs not exceeding 250mm thick unless otherwise

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

15MPa/19mm concrete

1 50mm thick Blinding layer on Plinths

m³

6

R

-

REINFORCED CONCRETE

30 MPa/19mm concrete

2 Strip footing

m³

20

R

-

Carried Forward

R

-

Brought Forward

R

-

3 Strip foundation

m³

10

R

-

4 Floor Slab

m³

28

R

-



<u>JOINTS</u>					
5	Saw cut joint on floors	m	204	R	-
6	Expansion joints between concrete and walls	m	94	R	-
<u>FORMWORK</u>					
<u>ROUGH FORMWORK (DEGREE OF ACCURACY II)</u>					
<u>Rough formwork to vertical sides</u>					
7	Edge of Strip Foundation	m ²	30	R	-
	Carried Forward			R	-
	Brought Forward			R	-
<u>Smooth formwork to horizontal</u>					
8	Power floating on floor slab	m ²	265	R	-
9	Underside of concrete floor slab	m ²	30	R	-
<u>REINFORCEMENT</u>					
<u>Steel Reinforcement</u>					
<u>High tensile steel reinforcement to structural concrete work</u>					
10	All diameters Mild steel reinforcement	t	2	R	-
11	All diameters High-tensile reinforcement	t	2	R	-
<u>Mild steel reinforcement to structural concrete work</u>					
12	Type 395 fabric reinforcement in concrete surface beds, slabs, etc	m2	50	R	-
	Carried Forward to Summary of Section No. 2			R	-

SECTION NO.2

BUILDING WORK

BILL NO. 4

MASONRY

For preambles see "Model Preambles for Trades (2008 Edition)" and Supplementary preambles as specified in the

SUPPLEMENTARY PREAMBLES

BRICKWORK

Sizes in descriptions

Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width

Brick sizes shall be 220mm x 110mm x 75mm.

Linings to concrete

Descriptions of linings to concrete, unless otherwise described, shall be deemed to include wire ties

Hollow walls etc

Descriptions of hollow walls shall be deemed to include wire ties and leaving every fifth perpend of the bottom course of the external skin open as a weep hole

Reinforced brick lintels

Lintels shall bear at least 160mm onto adjacent walling. Where such bearing cannot be obtained due to the proximity of adjacent openings the lintel shall be continuous

Face bricks



Bricks shall be ordered timeously to obtain uniformity in size and colour

Pointing

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

SUPERSTRUCTURE

Brickwork of Cement bricks in class II mortar

1	One and half brick walls	m ²	210	R	-
---	--------------------------	----------------	-----	---	---

Brickwork reinforcement

2	230mm Wide reinforcement built in horizontally	m	1 559	R	-
---	--	---	-------	---	---

"Allied Concrete" prestressed fabricated lintels

3	110 x 75mm Lintels in lengths not exceeding 3m including 150mm overlapping at both sides over opening (Provisional).	m	20	R	-
---	--	---	----	---	---

	Carried Forward to Summary of Section No. 2			R	-
--	---	--	--	---	---

SECTION NO.2

BUILDING WORK

BILL NO.5

ROOF COVERINGS ETC

For preambles see "Model Preambles for Trades (2008 Edition)" and Supplementary preambles as specified in the Trades.



SUPPLEMENTARY PREAMBLES

General

All roof coverings, etc., to be with a covering of Z275 galvanising. All holes to be drilled and not punched

Where described as with "Chromadek" finish, all sheets, flashings, etc., shall be with "Chromadek" silicone polyester paint for exterior use

Sizes

All items are measured net unless otherwise described

Flashings, trimming plates, etc.

Prices to include for all cutting and waste and relevant fixing material, unless otherwise described

All rates for flashings, trimmings, etc., to include for forming drips and closed ends to troughs of sheet steel roof covering where applicable

All items are unless otherwise described measured net

PROFILED METAL SHEETING AND ACCESSORIES

0,58mm "Brownbuilt Klip-Lok Light Industrial" galvanised troughed sheeting steel with "Chromadek - Traffic Green" finish on one side, in single lengths fixed to steel purlins or rails and 0,6mm galvanised steel accessories with "Chromadek" finish on one side, fixed to roof members by a firm of Specialists who will give a five (5) year guarantee, all in accordance with the manufacturer's instructions

1 Roof covering with pitch not exceeding 50 degrees

m²

250

R

-

<u>ROOF DECKING</u>					
2	1,2mm Brown Build Bond Deck System	m ²	90	R	-
ROOF AND WALL LINING AND INSULATION					
3	Insulation laid taut over purlins (at approximately 760mm centres) and fixed concurrent with roof covering including galvanised steel straining wires	m ²	43	R	-
PREAMBLES					
For preambles refer to "Model Preambles for Trades"					
SUPPLEMENTARY PREAMBLES					
Descriptions:					
Items described as nailed shall be deemed to be fixed with hardened steel nails or pins or 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 600mm centres, and where described as bolted the bolts have been given.					
Boards must be stacked on a level surface in a dry place on a timber platform. Boards must be carried on edge.					
Skimmed ceilings must be plastered the same day that the 'Rhinoboard' has been erected.					
NAILED UP AND SCREW UP CEILINGS					
Gypsum plasterboard with 50mm cover strips of mesh scrim					

1	Ceilings fixed to and including 38 x 38mm sawn softwood brander at 400mm centres fixed to timber trusses	m ²	36	R	-
	Gypsum plasterboard cornices:				
2	70mm Coved cornices	m	42	R	-
	Carried Forward to Summary of Section No. 2			R	-
	<u>SECTION NO.2</u>				
	<u>BUILDING WORK</u>				
	<u>BILL NO.6</u>				
	<u>STRUCTURAL STEELWORK</u>				
	For preambles see "Model Preambles for Trades (2008 Edition)" and Supplementary preambles as specified in the Trades.				
	<u>SUPPLEMENTARY PREAMBLES</u>				
	<u>Descriptions</u>				
	Descriptions of bolts shall be deemed to include nuts and washers				
	Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete				
	Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete				

Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete. Where anchor bolts are described as embedded in sides or soffits of concrete it shall be deemed to include holes through formwork.

Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete.

CORROSION PROTECTION OF STRUCTURAL STEELWORK

1	Surface dressing and repairs at place of fabrication	t	1.00	R	-
---	--	---	------	---	---

Carried Forward

R	-
---	---

Brought Forward

R	-
---	---

Surface preparation and coating application

2	On site	t	19.50	R	-
---	---------	---	-------	---	---

Supply and fabrication of steelwork

3	Hot-rolled Steel section	t	1.00	R	-
---	--------------------------	---	------	---	---

4	Cold Formed Steel Section	t	1.00	R	-
---	---------------------------	---	------	---	---

DELIVERY TO SITE

Normal delivery

5	Hot-rolled Steel section	t	1.00	R	-
---	--------------------------	---	------	---	---

6	Cold Formed Steel Section	t	1.00	R	-
---	---------------------------	---	------	---	---

Erection on site, etc

7	Hot-rolled and cold formed sections	t	1.00	R	-
---	-------------------------------------	---	------	---	---

Bolts to trusses etc



8	High tensile bolts	t	0.25	R	-
9	Holding down bolts	t	0.10	R	-
Carried Forward to Summary of Section No. 2				R	-
<u>SECTION NO.2</u>					
<u>BUILDING WORK</u>					
<u>BILL NO. 7</u>					
<u>METALWORK</u>					
For preambles see "Model Preambles for Trades (2008 Edition)" and Supplementary preambles as specified in the Trades.					

<u>Descriptions</u>					
<p>Descriptions of bolts shall be deemed to include nuts and washers Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete Metalwork described as"holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described</p>					
<u>Drawings</u>					
Tenderers are referred to architect's drawings annexed to this document for full details of the windows, doors, etc					
<u>STEEL ROLLER SHUTTERS ETC</u>					
<u>"Thermoteck" or Equal Approved Industrial roller shutters fixed to brickwork or concrete</u>					

1	Industrial roll up shutter door to suit opening size 5300 x 5500mm high button or remote operated, including roller box and opening mechanism, rubber weather strips, handles, Roll-A-Guides, hinges, fixing bolts, tracks, 2 no bolts and pad locks, etc, fixed to brickwork or concrete with a minimum of 100mm side room and 350mm headroom and pre-paint to match roof sheeting..	No	1	R	-
2	Provisional sum of Hundred and Fifty Thousand Rands (R 150 000) to refurbish and service the existing Crane.	Item	1	R	-
	Carried Forward			R	-
	Brought Forward			R	-
	Carried Forward to Summary of Section No. 2			R	-
	<u>SECTION NO.2</u>				
	<u>BUILDING WORK</u>				
	<u>BILL NO. 8</u>				
	<u>PLASTERING</u>				
	For preambles see "Model Preambles for Trades (2008 Edition)" and Supplementary preambles as specified in the Trades.				

	<u>INTERNAL PLASTER</u>				
	<u>Cement plaster on brickwork</u>				
1	On walls	m ²	35	R	-
2	On narrow widths	m ²	15	R	-
	Carried Forward to Summary of Section No. 2			R	-

SECTION NO.2

BUILDING WORK

BILL NO.9

PLUMBING AND DRAINAGE

For preambles see "Model Preambles for Trades (2008 Edition)" and Supplementary preambles as specified in the Trades.

SUPPLEMENTARY PREAMBLES

Wire gratings

Descriptions of gutter outlets etc shall be deemed to include wire balloon gratings

Exposed concrete surfaces

Exposed surfaces of concrete stormwater channels, cover slabs, inspection eye marker slabs, gulley tops, cleaning eye tops, catchpits, inspection chambers, etc shall be finished smooth with plaster

Excavations

No claim for rock excavation will be entertained unless the contractor has timeously notified the quantity surveyor thereof prior to backfilling

"Soft rock" and "hard rock" shall be as defined in "Earthworks"

Laying, backfilling, bedding, etc. of pipes

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



Where no manufacturers' instructions exist pipes shall be laid in accordance with clauses 5.1 and 5.2 of each of the following: SABS 1200 L : Medium-pressure pipelines LD : Sewers LE : Stormwater drainage Pipe trenches etc shall be backfilled in accordance with clauses 3, 5.5, 5.6, 5.7 and 7 of SABS 1200 DB : 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 1200 LB : Bedding (Pipes). Unless otherwise described bedding of rigid pipes shall be class B bedding

7 Waste Course

Concrete lined (600mm x 300mm) open channel

m

13

R

-

25 mm galvanized mentis grating (600mm wide)

m

13

R

-

Carried Forward to Summary of Section No. 2

R

-

SECTION NO.2

BUILDING WORK

BILL NO. 10

PAINTWORK

For preambles see "Model Preambles for Trades (2008 Edition)" and Supplementary preambles as specified in the Trades.

SUPPLEMENTARY PREAMBLES

All paint, complete with undercoat, primer, etc, to be used strictly in accordance with the manufacturer's specification.

PAINTWORK ETC TO NEW WORK

ON FLOATED PLASTER

One coat alkali resistance primer, one under coat and two coats eggshell paint.



1	On internal walls	m ²	435	R	-
	<u>ON METAL</u>				
	<u>Plascon Velvaglo Satin to exterior new mild steel (NW 683).Surface to be clean and dry. Remove surface contaminants using Plascon Aquasolv Degreaser (GR 1) with bristle brush or Brillo pads. Rinse thoroughly with tap water until surface is water break-free. Remove rust and millscale by abrasive blasting to ISO 8501 - 01:1988 - Sa2½ or by hand/mechanical wire brushing to St3of the same standard. Allow to dry completely and prime within 4 hours of cleaning. Prime with one coat of Metal Primer (UC 501) with an overcoating time of 16 hours and finish with two coats of Velvaglo Satin (VLO) with 16 hours drying time between coats, for a maintenance cycle of 3 years in a C1 - inland environment.</u>				
	Carried Forward			R	-
	Brought Forward			R	-
2	On roof trusses	m ²	145	R	-
	<u>ON CELINGS</u>				
	Prepare surface and rmove all loose material apply one coat primer and to coats paint				
4	Ceilings	m ²	48	R	-
	Carried Forward to Summary of Section No. 2			R	-
	Section No.2				
	BUILDING WORKS				
	SECTION SUMMARY-BUILDING WORKS				
Bill No					Amount
1	Alterations			R	-

2	Earthworks				R	-
3	Concrete, Formwork and Reinforcement				R	-
4	Masonry				R	-
5	Roof Coverings, etc				R	-
6	Structural Steelwork				R	-
7	Metalwork				R	-
8	Plastering				R	-
9	Plumbing and Drainage				R	-
10	Paintwork				R	-
Carried to Final Summary					R	-

ELECTRICAL WORKS

ITEM No	DESCRIPTION	UNIT	QTY		AMOUNT
	SECTION 3				
	BILL NO. 1				
	BULK SUPPLY				
3	The complete installation must comply SANS10142 specifications and the Quality specification in this document. Therefore Tenders are advised to study the specification and drawings before the Bill is to be price.				
	<u>LV RETICULATION</u>				
	Supply and install a 400A , 380V Tripple Pole feeder circuit breaker in main LV Panel in the miniature substation to provide power supply to the distribution board to be located in the Spray Booth.	each	1		R -
	CABLES, CONDUCTORS & SLEEVES				

Supply and install PVC insulated amoured copper cables240mm² 4 x core PVC insulated copper cable (For supply cables from substation to DB-SBO - Spray booth)

meter

100

R

-

95mm² 4 x core PVC insulated copper cable (For supply cables from DB-SBO Spray booth to DB-SBL Sand blast)

meter

40

R

-

50mm² 4 x core PVC insulated copper cable

meter

20

R

-

10mm² 4 x core PVC insulated copper cable (For supply cables from DB-SBO Spray booth to 3 Phase sockets, heat pump, high pressure washers, fresh air fans and spray booths Panels)

meter

280

R

-

10mm² 4 x core PVC insulated copper cable (For supply cables from DB-SBL Sand blast to 3 Phase sockets)

meter

100

R

-

4mm² 3 x core PVC insulated copper cable (For supply cables from DB-SBO Spray booth to water tank, circulation pump panels)

meter

60

R

-

Supply and install bare copper earth conductor185mm² bare copper earth cable

meter

100

R

-

70mm² bare copper earth cable

meter

40

R

-

35mm² bare copper earth cable

meter

20

R

-

6mm² bare copper earth cable

meter

280

R

-

4mm² bare copper earth cable

meter

60

R

-

GLANDS AND SHROUDS240mm² 4 x core PVC insulated copper cable

each

2

R

-

95mm² 4 core PVC insulated copper cable

each

2

R

-

50mm² 4 core PVC insulated copper cable

each

5

R

-

10mm² 4 core PVC insulated copper cable

each

14

R

-

4mm² 3 core PVC insulated copper cable

each

6

R

-

GLANDS AND SHROUDS (Earth bare)185mm² bare copper earth cable

each

2

R

-

70mm² bare copper earth cable

each

2

R

-

35mm² bare copper earth cable

each

5

R

-

6mm² bare copper earth cable

each

14

R

-

4mm² bare copper earth cable

each

6

R

-

CABLE MARKERS & WARNING TAPES

Cable markers for cable routes indication

each

50

R

-

Cable warning tape

meter

20

R

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SUPPLY & INSTALL PVC SLEEVES

110 diameter

meter

40

R

-

50 diameter

meter

40

R

-

TRENCHING AND EXCAVATIONS (600mm wide & 800mm deep). Rate to include bedding and backfilling

Pickable soil

meter

100

R

-

Provision for removal and re-instating of existing paving

meter

30

R

-

Provision for cutting and re-instating of existing road way

meter

20

R

-

PERFORATED CABLE TRAY WITH RETURN FLANGE				
Supply and install galvanized metal cable wire ways including all fixing material, <u>trapeze hangers for single threaded rod</u> , splices, bonding conductors and other accessories required. Prices to include items such as cable ties, nuts, bolts, earthing and bonding, cold galvanising raw cuts, etc.				
Cabstrut or O-line 300mm wide medium duty perforated cable tray with return flanges (50mm rail height, 1,6mm thickness and 375mm rung spacing) medium duty cable ladder including all bolts, screws, clips, P4000 trapeze hanger, threaded rod and other material necessary for fixing:	meter	100	R	-
TOTAL CARRIED TO SECTION SUMMARY			R	-

SECTION 3				
BILL No 2				
Supply and install pipes including short lengths jointing, sweeping bends, buses, locknuts, roundboxes etc.:	meter	300	R	-
20mm diameter PVC pipe cast into concrete, brick work, suspended in ceiling voids or surface mounted on wall	meter	400	R	-
25mm diameter PVC pipe cast into concrete, brick work, suspended in ceiling voids or surface mounted on wall	meter	20	R	-
20mm diameter copex conduit				
Supply and install steel galvanised walls boxes complete with all accessories	each	10	R	-
100mm x 50mm x 50mm deep	each	12	R	-
100mm x 100mm x 50mm deep	meter	720	R	-
Supply and install 1,6mm diameter steel galvanised draw wires drawn into conduit/sleeves:	each	20	R	-
Supply and install 100mm x 100mm blank cover plates	each	120	R	-
Supply and install 4 way PVC round boxes	each	30	R	-
Supply and install 100mm X 50 blank plates				
ELECTRICAL CABLE MANAGEMENT & TRUNKING				
Supply, Install, Test and Commission				
Galvanised unistrut suspended from structure in the roof. Fixings not to exceed 4m including galvanized steel cover (Rates to include: Tees, Bends, 4 ways, ends and all other accessories)	m	100	R	-
P9000 Unistrut	m	100	R	-
P8000 Unistrut	m	60	R	-
P2000 Unistrut		40	R	-

DISTRIBUTION BOARDS (Refer to schematic diagrams)		
Refurbish and modify existing main distribution boards as per the schematic diagram. The distribution boards will be surface mounted on wall. The distribution board doors must have a neat and professionally manufactured cut-out, with reinforced and properly finished edges, so that the main isolator of the distribution board can be switched without opening the door in case of emergency. . Distribution boards must be lockable and padlocks must be supplied with the distribution board	each	1
DB-SBO (Spray Booth Distribution Board)	each	1
DB-SDO-1 (HVAC Controller unit)		
CONDUCTORS		
Supply and install 600/1000Volt PVC insulated stranded copper conductors drawn into conduits, etc. (Wiring for lighting circuits is to be carried out with 2,5mm ² conductors and 2,5mm ² earth conductors. For socket outlet circuits the wiring shall comprise of 4 mm ² conductors with 2, 5mm ² earth conductors)	meter	1200
2.5mm ²	meter	600
4mm ²	meter	300
6mm ²		
Earth Wire	meter	300
2.5mm ²	meter	150
4mm ²		
SOCKETS OUTLETS		
Supply, install and connect socket outlets in flush wall mounted boxes, power skirting, trunking or surface if required complete with cover plates and all necessary accessories:	each	10
Supply and install 230V, 16A combination switched socket outlets (with 1 x standard 16A round 3 pin socket + 1 x 3 pin ZA plug socket combined) flush mounted on the wall c/w steel cover plate (white) suitable to accommodate SANS 164-1 & SANS 164-2 socket outlets. Outlets should be explosion proof.	each	2
Supply and install 400V, 63A 3Phase switched socket outlets with weatherproof (IP44) box surface mounted on the wall c/w explosion proof capabilities.		
SWITCHES		
Supply, install and connect light switches in flush wall mounted boxes, complete with cover plates and all necessary accessories:	each	2
Supply and install 16A one lever one way light switch flush mounted on the wall	each	2
Supply and install 16A one lever two way light switch flush mounted on the wall	each	1

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Supply and install motion detectors		
ISOLATORS		
Supply, install and connect isolators in flush wall mounted boxes or surface, complete with cover plates and all necessary accessories (Isolators to be mounted within one meter of the equipment to be controlled).	each	2
Supply and install 230V, 10A double pole isolator surface mounted weatherproof IP64. Rates to include 4 inch x 4 inch extension box	each	6
Supply and install 230V, 20A double pole isolator surface mounted weatherproof IP64. Rates to include 4 inch x 4 inch extension box	each	4
LUMINAIRES		
Supply, install and connect luminaires complete with lamps, fixings, brass screws, washers, etc. All recessed light fittings should be supplied with 3m connection lead	each	
Type B (Ceiling mounted 21W LED round bulkhead IP65 light fitting with prismatic acrylic diffuser)	each	15
Type C (Wall mounted 18W LED round bulkhead IP65 light fitting with prismatic acrylic diffuser)	each	10
Type D (Surface mounted bulkhead 18W LED with 2400LM, 4000K die-cast aluminium body and high-impct acrylic diffuser.)	each	25
Type F (Explosion proof light, 100W, White steel frame mounted from roof with stainless steel wire)	each	10
Type L (Suspended LED Industrial High Bay luminaire IP64 150W, 4000K colour IP64)	each	8
Type G (Surface mounted Vapourproof 48W LED Luminaire IP66 BEKA VAPOURLINE OR SIMILAR APPROVED)		10
TESTING AND COMMISSIONING	item	1
Inspections, testing and handing over of the complete installation in the presence of the Engineer and certify the results on the <i>Certificate of compliances by an accredited person.</i>		
EARTHING		
Earthing of all buildings to comply with the latest SANS1 0142, <i>Code of Practice for The Wiring of Premises</i> as amended. Bonding of all hot, cold and waste pipes complete with 12,5mm x 1mm thick solid or perforated copper tape including fixings, brass screws, nuts, washers etc.: Also include for the earth mat with earth spikes	item	2

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	TOTAL CARRIED TO SECTION SUMMARY				R	-

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MECHANICAL WORKS

ITEM No	DESCRIPTION	UNIT	QTY		AMOUNT
	PAINT BAY				
	MECHANICAL EQUIPMENT				
	Supply and installation of fresh air plenums c/w filters and bifurcated fans for 16m ³ /s @1000 Pa c/w flame/ explosion proof isolators, 2 x 1.5D sound attenuators to suit. Power: 400V/3PH/50Hz. Plenums must structurally designed to carry weight of fan, sound attenuators, ducting etc.	No.	2	R	-
	Supply and installation of extract air plenums c/w filters and bifurcated fans for 16m ³ /s @1000 Pa c/w flame/ explosion proof isolators, 2 x 1.5D sound attenuators to suit. Power: 400V/3PH/50Hz. Plenums must structurally designed to carry weight of fan, sound attenuators, ducting etc.	No.	2	R	-
	Supply and installation of supply air and extract air ducting for ventilation of paint booth. Ducting to be supplied c/w supports from walls/ roof. Duct labelling and colour coding as per client specs.	No.	4	R	-
	Supply and installation of Exhaust Filter Manometer for monitoring pressure drop across the exhaust filters, indicating the filters' condition (Pressure Differential Gauge with accessories). [Maximum Pressure - 200 kPa (2 Bar), Permissible Temperature - -40°C to +60°C]	No.	2	R	-
	Supply and installation of Air Solenoid valve to cut off the supply of compressed air to painting equipment under specific conditions and prevent painting when the booth is not functioning correctly or if any booth doors are open. [Working Pressure - 1 to 10 Bar, Temperature Range - Max +60°C]	No.	2	R	-
	Supply and installation of Control Panel to regulate and monitor airflow, temperature, and other settings.	No.	2	R	-
	Supply and installation of Air Curtain to direct a stream of air downward and prevent contaminants and other debris from infiltrating interior space. Air Flow - 15900 m ³ /h, 4.20 kw, 18 A, 69 dB(A), 211 kg]	No.	2	R	-

Supply and installation of Door Limit Switch to signal when a door is open in the booth.	No.	2	R	-
Roller Shutter Doors - 3729mm (W) x 5668mm (H). [3mm thick cold rolled galvanised steel] - 120 minute fire rated roller shutter door c/w decent control, fusible links and dust seals.	No.	1	R	-
Roller Shutter Doors - 5035mm (W) x 7293mm (H). [3mm thick cold rolled galvanised steel] - 120 minute fire rated roller shutter door c/w decent control, fusible links and dust seals.	No.	1	R	-
FIRE PROTECTION EQUIPMENT				
25mm Dia Fire Hose Reels SANS approved and supplied and fitted including, stop valves,hose reel base, clamps,nozzle brackets,fixing brackets,pressure gauge etc including length of 30m connecting pipe per reel as per the specification and tender drawings.	No.	1	R	-
Supply and install fire extinguishers SANS approved. Complete with meranti backing boards, steel bases,mounting brackets and wall anchors as per the detailed specifications. 4.5 kg DCP	No.	2	R	-
Supply and install fire extinguishers SANS approved. Complete with meranti backing boards, steel bases,mounting brackets and wall anchors as per detailed specifications. 5 kg CO2	No.	2	R	-
Fire detection system c/w 1 loop panel, devices, mcps, sirens, stobes, etc. System to be class A wired and linked to ventilation equipment, roller shutter doors, etc	No.	1	R	-
Deluge System c/w 150mm deluge valve, extinguishant panel, piping nozzles, pilot sprinklers, etc. Entire system to be installed over existing crane. All access equipment, included. Connection point almost 160m away	No.	1	R	-
Supply and install SABS approved fire and evacuation signage as per drawing	Item	Lot	R	-
CARRIED TO SECTION SUMMARY			R	-
WASH BAY & HOT WATER STORAGE				
MECHANICAL EQUIPMENT				

1200 Litre vertical storage water heater c/w heat pump and circulating pump, safety valves, thermostat, Anode, manhole, vacuum breakers and all accessories and mounting brackets. Heat Pump unit c/w onboard circulation pump. Heat pump power Input: 2 x 7.5kW 400V/3PH/50Hz each aircooled units, Max Temp 65°C. Working pressure, 400kPa and tesing pressure, 600kPa.Storage to meet the requirements of SANS347 or equal approved. Storage tank to be plumbed directly into the cold water inlet, hot water supply piping and waste water reticulation. Backup heating elements, 48kW, 400V/3PH/50Hz	No.	1		R	-
Hot water circulation pump c/w corrosion-free stainless-steel housing for 0.5 l/s @ 2.0 Bar. 0.165kW 230V/1PH/50Hz. Pump guard dual circulation pump controller,	No.	1		R	-
High pressure washer - 6 kW, Pressure - 2 Bar, Airflow - 15 L/min @ 150Bar	No.	2		R	-
Hot water piping, copper class 2 installed complete	No.	1		R	-
Spray Gun, Hoses and Fittings	No.	2		R	-
FIRE PROTECTION EQUIPMENT					
25mm Dia Fire Hose Reels SANS approved and supplied and fitted including, stop valves,hose reel base, clamps,nozzle brackets,fixing brackets,pressure gauge etc including length of 30m connecting pipe per reel as per the specification and tender drawings.	No.	1		R	-
Supply and install fire extinguishers SANS approved. Complete with meranti backing boards, steel bases,mounting brackets and wall anchors as per the detailed specifications. 4.5 kg DCP	No.	2		R	-
Supply and install fire extinguishers SANS approved. Complete with meranti backing boards, steel bases,mounting brackets and wall anchors as per detailed specifications. 5 kg CO2	No.	1		R	-
TOTAL CARRIED TO SECTION SUMMARY				R	-

PART 2 SAND BLASTING

SECTION NO. 2 SAND BLASTING

BILL NO 1

ALTERATIONS

For preambles see "Model Preambles for Trades (2008 Edition)" and Supplementary preambles as specified in the Trades.

TENDERERS ARE TO NOTE THAT ALL WORK IS TO BE EXECUTED IN EXISTING BUILDINGS IN A COMBINATION OF NEW WORK, WORK IN PATCHES AND WORK IN SMALL QUANTITIES.

Site inspection

The Tenderer is advised to visit the site, inspect the existing premises and acquaint himself thoroughly with the nature of the work specified.

Sizes and dimensions

All sizes and dimensions stated herein are approximate and deemed only sufficient to identify the item of work concerned.

No allowance for overbreak has been made to any of the adjoining structures, walls, finishes, etc., where removals or pockets occur (the nett opening size, etc., has been made good in later items of this bill where such making good has not been included with the item) and the Contractor must allow in his prices for making good any overbreak that may occur.

Materials

Old materials from alterations, except where described to be re-used or handed over, become the property of the contractor.

Old materials from the alterations, except where described to be re-used or handed over, as well as all rubbish, etc., must be regularly carted from the site and not be allowed to accumulate on or around the site.



Carried Forward

Section No.2

BUILDING WORKS

Bill No.1

Alterations

ESKOM ROSHERVILLE TSS SANDBLASTING ROOM

Brought Forward

None of the old materials are to be used for new work except where specifically described as being set aside for re-use.

Where certain materials or articles from demolitions or alterations are described as to be handed over by the Contractor to the Client, such materials or articles shall be properly stored by the Contractor, until handing over thereof. The Contractor must obtain an official receipt listing the materials or articles and dates of handing over. If the Contractor fails to submit the receipt when requested to do so, it shall be deemed that the materials or articles are still in his possession and he will be held liable to the Client for the full replacement value thereof, which amount will be deducted from any monies due to the Contractor.

General

All new finishes are measured in the relevant trades for new work.

Allow for watering the works sufficiently to prevent nuisance from dust.

All alteration works described hereunder shall imply the use of an approved screed or plaster repairing compound and preparing existing surfaces to receive new.

Provide all necessary propping, etc., required to ensure the safety and stability of the structure during the contract period and remove at completion.



	Provide all necessary additional barricades, screens, overhead protections, etc., required to ensure the safety of persons, property, etc., and remove at completion.				
	All alteration work is within an existing facility. The contractor shall take utmost care to minimise damage to existing completed works in the vicinity of the alteration works.				
	<u>REMOVAL OF EXISTING WORK</u>				
	<u>TEMPORARY BARRIERS, SCREENS, ETC</u>				
	Carried Forward				
	Section No.2 BUILDING WORKS Bill No.1 Alterations ESKOM ROSHERVILLE TSS SANDBLASTING ROOM				
	Brought Forward				
	<u>Temporary barriers, screens, etc including removal</u>				
1	Dust screen 3000mm high between concrete floor and ceiling formed of suitable timber framing with 250 micron polyethylene sheeting / net stapled on including corners, ends, etc	m	150	R	-
	<u>REMOVAL OF EXISTING WORK</u>				
	<u>Breaking up and removing mass concrete</u>				
2	250mm Thick surface bed	m ²	100	R	-
	<u>Taking out and removing doors, windows, etc including thresholds, sills, etc, set aside for later re-use at same position.</u>				
3	Steel roller shutter door	SUM	1	R	-
4	Railway track	SUM	1	R	-
	<u>Taking down and removing roofs, floors, panelling, ceilings, partitions, etc</u>				
5	Roof covering	m ²	400	R	-

6	Roof cladding	m ²	120	R	-
<u>TRANSPORT OF MATERIALS</u>					
7	Transport removed materials, debris etc to dumping site (Provisional).	SUM	1	R	-
Carried Forward to Summary of Section No. 2				R	-
<u>SECTION NO.2</u>					
<u>BUILDING WORK</u>					
<u>BILL NO.2</u>					
<u>EARTHWORKS</u>					
<u>EARTHWORKS</u>					
For preambles see "Model Preambles for Trades (2008 Edition)" and Supplementary preambles as specified in the Trades.					

<u>SUPPLEMENTARY PREAMBLES</u>					
<u>Nature of ground</u>					
The nature of the ground is assumed to be sandy weathered granite, therefore "earth", but possibly interspersed with "hard rock"					
<u>Excavation for working space in rock</u>					
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					
Carried Forward				R	-

Bill No.2
Earthworks

Brought Forward

R

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Carting away of excavated material

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

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

Soil poisoning

Ant and weed poisoning will be applied in accordance to SABS specifications by Registered and Approved Specialists who will issue a five (5) year guarantee. The contractor will only be paid for this items once they have produced the said certificate to the Principal Agent

EXCAVATION, FILLING, ETC

Excavate in all materials and use for embankment or backfill or dispose, as ordered

1	Existing Fill Material Between Existing Building and Access Road	m ³	105	R	-
2	Foundation Based	m ³	50	R	-
<u>Extra-over for</u>					
3	Intermediate excavation	m ³	50	R	-
4	Hard rock excavation	m ³	10	R	-



	Carried Forward			R	-
	Bill No.2 Earthworks				
	Brought Forward			R	-
	<u>Restricted excavation</u>				
	<u>Excavate for restricted foundations, footings and pipe trenches in all materials and use for backfill or embankment or dispose</u>				
5	Bases Near Existing Structure	m ³	25	R	-
	<u>Importing of materials</u>				
	<u>Extra-over for importation of materials from commercial sources or from borrow pits</u>				
6	From commercial source	m ³	194	R	-
	Carried Forward to Summary of Section No. 2			R	-
	<u>SECTION NO.2</u>				
	<u>BUILDING WORK</u>				
	<u>BILL NO.3</u>				
	<u>CONCRETE, FORMWORK AND REINFORCEMENT</u>				
	For preambles see "Model Preambles for Trades (2008 Edition)" and Supplementary preambles as specified in the Trades.				

	<u>SUPPLEMENTARY PREAMBLES</u>				
	<u>Cost of tests</u>				

The costs of making, storing and testing of concrete test cubes as required under clause 7 "Tests" of SABS 1200 G shall include the cost of providing cube moulds necessary for the purpose, for testing costs and for submitting reports on the tests to the architect. The testing shall be undertaken by an independent firm or institution nominated by the contractor and to the approval of the architect. (Test cubes are measured separately)

Breeze concrete shall consist of twelve parts clean dry furnace ash, free from coal or other foreign matter, to one part cement (12:1), the ash graded up to particles which will pass a 16,5mm ring from a minimum which fails to pass a 4,75mm mesh. The finer materials from the screening are to be first mixed with the cement into a mortar and the ash added afterwards and thoroughly incorporated

Carried Forward

R

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Bill No.3

Concrete, Formwork and Reinforcement

Brought Forward

R

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Formwork

Description of formwork shall be deemed to include use and waste only (except where described as "left in" or "permanent"), for fitting together in the required forms, wedging, plumbing and fixing to true angles and surfaces as necessary to ensure easy release during stripping and for reconditioning as necessary before re-use

The vertical strutting shall be carried down to such construction as is sufficiently strong to afford the required support without damage and shall remain in position until the newly constructed work is able to support itself

Formworks to soffits of solid slabs etc shall be deemed to be slabs not exceeding 250mm thick unless otherwise described



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

15MPa/19mm concrete

1	50mm thick Blinding layer	m ³	55	R	-
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Carried Forward

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Bill No.3
Concrete, Formwork and Reinforcement

Brought Forward

R -

2	Floor Slab	m ³	78	R	-
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3	Floor screed	m ³	40	R	-
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JOINTS

4	Saw cut joint on floors	m	64	R	-
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5	Expansion joints between concrete and walls	m	55	R	-
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FORMWORK

ROUGH FORMWORK (DEGREE OF ACCURACY II)

Rough formwork to horizontal

6	Hand floating on top of plinths	m ²	100	R	-
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		Carried Forward			R	-
	Bill No.3 Concrete, Formwork and Reinforcement					
		Brought Forward			R	-
	<u>Smooth formwork to horizontal</u>					
7	Power floating on floor slab	m ²	208		R	-
	<u>REINFORCEMENT</u>					
	<u>Steel Reinforcement</u>					
	<u>High tensile steel reinforcement to structural concrete work</u>					
8	All diameters Mild steel reinforcement	t	1		R	-
9	All diameters High-tensile reinforcement	t	2		R	-
	Carried Forward to Summary of Section No. 2				R	-
	Bill No.3 Concrete, Formwork and Reinforcement					
	<u>SECTION NO.2</u>					
	<u>BUILDING WORK</u>					
	<u>BILL NO. 4</u>					
	<u>MASONRY</u>					
	For preambles see "Model Preambles for Trades (2008 Edition)" and Supplementary preambles as specified in the Trades.					

	<u>SUPPLEMENTARY PREAMBLES</u>					
	<u>BRICKWORK</u>					

Sizes in descriptions

Where sizes in descriptions are given in brick units, "one brick" shall represent the length and "half brick" the width of a brick

Brick sizes shall be 220mm x 110mm x 75mm.

Linings to concrete

Descriptions of linings to concrete, unless otherwise described, shall be deemed to include wire ties

Hollow walls etc

Descriptions of hollow walls shall be deemed to include wire ties and leaving every fifth perpend of the bottom course of the external skin open as a weep hole

Reinforced brick lintels

Lintels shall bear at least 160mm onto adjacent walling. Where such bearing cannot be obtained due to the proximity of adjacent openings the lintel shall be continuous

Carried Forward

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Bill No.4
Masonry

Brought Forward

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"Allied Concrete" prestressed fabricated lintels

1 110 x 75mm Lintels in lengths not exceeding 3m including m
150mm overlapping at both sides over opening
(Provisional).

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Carried Forward to Summary of Section No. 2

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Bill No.4
Masonry

SECTION NO.2

BUILDING WORK

BILL NO.5

ROOF COVERINGS ETC

For preambles see "Model Preambles for Trades (2008 Edition)" and Supplementary preambles as specified in the Trades.

SUPPLEMENTARY PREAMBLES

General

All roof coverings, etc., to be with a covering of Z275 galvanising. All holes to be drilled and not punched

Where described as with "Chromadek" finish, all sheets, flashings, etc., shall be with "Chromadek" silicone polyester paint for exterior use

Sizes

All items are measured net unless otherwise described

Flashings, trimming plates, etc.

Prices to include for all cutting and waste and relevant fixing material, unless otherwise described

All rates for flashings, trimmings, etc., to include for forming drips and closed ends to troughs of sheet steel roof covering where applicable

All items are unless otherwise described measured net



	<u>PROFILED METAL SHEETING AND ACCESSORIES</u>				
	Carried Forward			R	-
	Bill No.5 Roof Coverings,etc				
	Brought Forward			R	-
	<u>0,58mm "Brownbuilt Klip-Lok Light Industrial" galvanised troughed sheeting steel with "Chromadek - Traffic Green" finish on one side, in single lengths fixed to steel purlins or rails and 0,6mm galvanised steel accessories with "Chromadek" finish on one side, fixed to roof members by a firm of Specialists who will give a five (5) year guarantee, all in accordance with the manufacturer's instructions</u>				
1	Roof covering with pitch not exceeding 50 degrees	m²	278	R	-
	Carried Forward to Summary of Section No. 2			R	-
	Bill No.5 Roof Coverings,etc				
	<u>SECTION NO.2</u>				
	<u>BUILDING WORK</u>				
	<u>BILL NO.6</u>				
	<u>CARPENTRY AND JOINERY</u>				
	For preambles see "Model Preambles for Trades (2008 Edition)" and Supplementary preambles as specified in the Trades.				

		Carried Forward			R	-
	Bill No.6 Carpentry and Joinery					
		Brought Forward			R	-
	<u>FIRE DOORS AND FRAMES, ETC</u>					
	<u>"Bitcon Industrial" fire doors with commercial veneer</u>					
1	Rubidor Class B, fire double door size 813 x 2032mm high with timber veneer and rebated meeting stiles, viewing panel of 100 x 300mm including pressed steel frame for 230mm brick wall and including door closer and lockset.	No	1		R	-
	Carried Forward to Summary of Section No. 2				R	-
	Bill No.6 Carpentry and Joinery					
	<u>SECTION NO.2</u>					
	<u>BUILDING WORK</u>					
	<u>BILL NO.7</u>					
	<u>STRUCTURAL STEELWORK</u>					
	For preambles see "Model Preambles for Trades (2008 Edition)" and Supplementary preambles as specified in the Trades.					
	<u>SUPPLEMENTARY PREAMBLES</u>					
	<u>Descriptions</u>					
	Descriptions of bolts shall be deemed to include nuts and washers					

	Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete				
	Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete				
	Descriptions of L-shaped and U-shaped anchor bolts shall be deemed to include bending, threading, nuts and washers and embedding in concrete. Where anchor bolts are described as embedded in sides or soffits of concrete it shall be deemed to include holes through formwork.				
	Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete.				
	<u>CORROSION PROTECTION OF STRUCTURAL STEELWORK</u>				
1	Surface dressing and repairs onsite	t	4.00	R	-
	Carried Forward			R	-
	Bill No.7 Structural Steelwork				
	Brought Forward			R	-
	<u>Surface preparation and coating application</u>				
2	On site	t	4.00	R	-
	Carried Forward to Summary of Section No. 2			R	-
	Bill No.7 Structural Steelwork				

SECTION NO.2

BUILDING WORK

BILL NO. 8

METALWORK

For preambles see "Model Preambles for Trades (2008 Edition)" and Supplementary preambles as specified in the Trades.

Descriptions

Descriptions of bolts shall be deemed to include nuts and washers Descriptions of expansion anchors and bolts and chemical anchors and bolts shall be deemed to include nuts, washers and mortices in brickwork or concrete Metalwork described as "holed for bolt(s)" shall be deemed to exclude the bolts unless otherwise described

Drawings

Tenderers are referred to architect's drawings annexed to this document for full details of the windows, doors, etc

STEEL ROLLER SHUTTERS ETC

"Thermoteck" or Equal Approved Industrial roller shutters fixed to brickwork or concrete

1	Industrial roll up shutter door to suit opening size 3500 x 7000mm high button or remote operated, including roller box and opening mechanism, rubber weather strips, handles, Roll-A-Guides, hinges, fixing bolts, tracks, 2 no bolts and pad locks, etc, fixed to brickwork or concrete with a minimum of 100mm side room and 350mm headroom and pre-paint to match roof sheeting..	No	1	R	-
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Carried Forward

R -

Bill No.8



	Metalwork					
	Brought Forward			R	-	
	Carried Forward to Summary of Section No. 2			R	-	
	Bill No.8 Metalwork					
	<u>BUILDING WORK</u>					
	<u>BILL NO. 9</u>					
	<u>PLASTERING</u>					
	For preambles see "Model Preambles for Trades (2008 Edition)" and Supplementary preambles as specified in the Trades.					

	<u>INTERNAL PLASTER</u>					
	<u>Cement plaster on brickwork</u>					
1	On walls	m²	550	R	-	
2	On narrow widths	m²	40	R	-	
	<u>WALL PROTECTIVE COVERING</u>					
3	Provisional sum of Hundrend and fifty Thousand rands (R150 000) Industrial protective rubber mats	sum	1	R	-	
	Carried Forward to Summary of Section No. 2			R	-	
	Bill No.9 Plastering					
	Section No.2					
	BUILDING WORKS					
	SECTION SUMMARY-BUILDING WORKS					
Bill No						Amount



1	Alterations				R	-
2	Earthworks				R	-
3	Concrete, Formwork and Reinforcement				R	-
4	Masonry				R	-
5	Roof Coveringss, etc				R	-
6	Capentry and Joinery				R	-
7	Structural Steelwork				R	-
8	Metalwork				R	-
9	Plastering				R	-
Carried to Final Summary					R	-
ELECTRICAL WORKS						
SECTION 3						
BILL NO 1						
The complete installation must comply SANS10142 specifications and the Quality specification in this document. Therefore Tenders are advised to study the specification and drawings before the Bill is to be price.						
1	<u>LV RETICULATION</u> Supply and install a 250A , 380V Tripple Pole feeder circuit breaker in the existing nearby distribution board to provide power supply to the new Sand Blast distribution board location as shown on drawings.	each	1		R	-
1.2						
2	CABLES, CONDUCTORS & SLEEVES Supply and install PVC insulated amoured copper cables					
2.1						
2.1.1	95mm ² 4 x core PVC insulated copper cable (For supply cables from DB-SBO Spray booth to DB-SBL Sand blast)	meter	30		R	-
2.1.4	50mm ² 4 x core PVC insulated copper cable (For supply cables from DB-SBL Sand blast to 3ph Isolator, compressor, blasting equipment compressor Panel)	meter	60		R	-
2.1.5	10mm ² 4 x core PVC insulated copper cable (For supply cables from DB-SBL Sand blast to 3 Phase sockets)	meter	100		R	-
2.1.5	10mm ² 4 x core PVC insulated copper cable (For supply cables from DB-SBL Sand blast to Blasting Pots)	meter	60		R	-

2.2	Supply and install bare copper earth conductor					
2.2.1	70mm ² bare copper earth cable	meter	30		R	-
2.2.2	50mm ² bare copper earth cable	meter	60		R	-
2.2.3	6mm ² bare copper earth cable	meter	160		R	-
2.3	GLANDS AND SHROUDS					
2.3.1	95mm ² 4 x core PVC insulated copper cable	each	2		R	-
2.3.3	50mm ² 4 core PVC insulated copper cable	each	2		R	-
2.3.4	10mm ² 4 core PVC insulated copper cable	each	2		R	-
2.4	GLANDS AND SHROUDS (Earth bare)					
2.4.1	70mm ² bare copper earth cable	each	2		R	-
2.4.3	50mm ² bare copper earth cable	each	2		R	-
2.4.4	6mm ² bare copper earth cable	each	2		R	-
3	CABLE MARKERS & WARNING TAPES					
3.1	Cable markers for cable routes indication	each	0		R	-
3.2	Cable warning tape	meter	0		R	-
4	SUPPLY & INSTALL PVC SLEEVES					
4.1	110 diameter	meter	0		R	-
4.2	50 diameter	meter	0		R	-
5	TRENCHING AND EXCAVATIONS (600mm wide & 800mm deep). Rate to include bedding and backfilling					
5.1	Pickable soil	meter	25		R	-
5.2	Provision for removal and re-instating of existing paving	m ²	155		R	-
5.3	Provision for cutting and re-instating of existing road way	m ²	201		R	-
5	PERFORATED CABLE TRAY WITH RETURN FLANGE					
5.1	Supply and install galvanized metal cable wire ways including all fixing material, <u>trapeze hangers for single threaded rod</u> , splices, bonding conductors and other accessories required. Prices to include items such as cable ties, nuts, bolts, earthing and bonding, cold galvanising raw cuts, etc. Cabstrut or O-line 300mm wide medium duty perforated cable tray with return flanges (50mm rail height, 1,6mm thickness and 375mm rung spacing) medium duty cable ladder including all bolts, screws, clips, P4000 trapeze hanger, threaded rod and other material necessary for fixing:	meter	100		R	-
	TOTAL CARRIED TO SECTION SUMMARY				R	-
	SECTION 3					
	BILL NO 2					
	The complete installation must comply SANS 10142 specifications and the Quality specification in this document. Therefore Tenders are advised to study the specification and drawings before the Bill is to be price.					
1	CONDUITS					
1.1	Supply and install pipes including short lengths jointing, sweeping bends, buses, locknuts, roundboxes etc.:					

1.1.1	20mm diameter PVC pipe cast into concrete, brick work, suspended in ceiling voids or surface mounted on wall	meter	200	R	-
1.1.2	25mm diameter PVC pipe cast into concrete, brick work, suspended in ceiling voids or surface mounted on wall	meter	100	R	-
1.1.3	20mm diameter copex conduit	meter	20	R	-
1.2	Supply and install steel galvanised walls boxes complete with all accessories				
1.2.1	100mm x 50mm x 50mm deep	each	5	R	-
1.2.2	100mm x 100mm x 50mm deep	each	5	R	-
1.2.3	Supply and install 1,6mm diameter steel galvanised draw wires drawn into conduit/sleeves:	meter	320	R	-
1.2.4	Supply and install 100mm x 100mm blank cover plates	each	5	R	-
1.2.5	Supply and install 4 way PVC round boxes	each	60	R	-
1.2.6	Supply and install 100mm X 50 blank plates	each	20	R	-
2	ELECTRICAL CABLE MANAGEMENT & TRUNKING				
	Supply, Install, Test and Commission				
	Galvanised unistrut suspended from structure in the roof. Fixings not to exceed 4m including galvanized steel cover (Rates to include: Tees, Bends, 4 ways, ends and all other accessories) .				
2.1					
2.1.1	P9000 Unistrut	m	60	R	-
2.1.2	P8000 Unistrut	m	60	R	-
2.1.3	P2000 Unistrut	m	30	R	-
2.2	Power Skirting Aluminium:(To include All: elbows, corners sections, T-sections & end caps)				
2.2.1	Cabstrut N8/P803, 2-way with 2 cover plates & divider	m	0	R	-
3	DISTRIBUTION BOARDS (Refer to schematic diagrams)				
	Supply and install main distribution boards as per the schematic diagram. The distribution boards will be surface mounted on wall. The distribution board doors must have a neat and professionally manufactured cut-out, with reinforced and properly finished edges, so that the main isolator of the distribution board can be switched without opening the door in case of emergency. . Distribution boards must be lockable and padlocks must be supplied with the distribution board				
3.1					
3.1.1	DB-SBL (Sand Blast)	each	1	R	-
4	CONDUCTORS				
	Supply and install 600/1000Volt PVC insulated stranded copper conductors drawn into conduits, etc.				
	(Wiring for lighting circuits is to be carried out with 2,5mm ² conductors and 2,5mm ² earth conductors. For socket outlet circuits the wiring shall comprise of 4 mm ² conductors with 2, 5mm ² earth conductors)				
4.1					
4.1.1	2.5mm ²	meter	800	R	-
4.1.2	4mm ²	meter	300	R	-
4.1.3	6mm ²	meter	300	R	-
4.2	Earth Wire				
4.2.1	2.5mm ²	meter	150	R	-
4.2.2	4mm ²	meter	150	R	-
5	SOCKETS OUTLETS			R	-

	Supply, install and connect socket outlets in flush wall mounted boxes, power skirting, trunking or surface if required complete with cover plates and all necessary accessories:					
5.1	Supply and install 230V, 16A combination switched socket outlets (with 1 x standard 16A round 3 pin socket + 1 x 3 pin ZA plug socket combined) flush mounted on the wall c/w steel cover plate (white) suitable to accommodate SANS 164-1 & SANS 164-2 socket outlets. Outlets should be explosion proof.	each	6		R	-
5.2	Supply and install 400V, 63A 3Phase switched socket outlets with weatherproof (IP44) box surface mounted on the wall c/w explosion proof capabilities.	each	2		R	-
6	SWITCHES					
	Supply, install and connect light switches in flush wall mounted boxes, complete with cover plates and all necessary accessories:					
6.1	Supply and install 16A one lever one way light switch flush mounted on the wall	each	2		R	-
6.2	Supply and install 16A two lever two way light switch flush mounted on the wall	each	5		R	-
6.3	Supply and install 16A one lever two way light switch flush mounted on the wall	each	22		R	-
6.5	Supply and install motion detectors	each	16		R	-
7	ISOLATORS					
	Supply, install and connect isolators in flush wall mounted boxes or surface, complete with cover plates and all necessary accessories (Isolators to be mounted within one meter of the equipment to be controlled).					
7.1	Supply and install 230V, 20A double pole isolator surface mounted weatherproof IP64. Rates to include 4 inch x 4 inch extension box	each	2		R	-
7.2	Supply and install 380V, 20A tripple pole isolator surface mounted weatherproof IP64. Rates to include 4 inch x 4 inch extension box	each	2		R	-
7.2	Supply and install 380V, 150A tripple pole isolator surface mounted weatherproof IP64. Rates to include 4 inch x 4 inch extension box	each	1		R	-
8	LUMINAIRES					
	Supply, install and connect luminaires complete with lamps, fixings, brass screws, washers, etc. All recessed light fittings should be supplied with 3m connection lead					
8.1	Type B (Ceiling mounted 21W LED round bulkhead IP65 light fitting with prismatic acrylic diffuser)	each	5		R	-
8.2	Type C (Wall mounted 18W LED round bulkhead IP65 light fitting with prismatic acrylic diffuser)	each	4		R	-
8.3	Type D (Surface mounted bulkhead 18W LED with 2400LM, 4000K die-cast aluminium body and high-impct acrylic diffuser.)	each	22		R	-
8.4	Type F (Explosion proof light, 100W, White steel frame mounted from roof with stainless steel wire)	each	13		R	-
8.5	Type L (Suspended LED Industrial High Bay luminaire IP64 150W, 4000K colour IP64)	each	10		R	-

8.6	Type G (Surface mounted Vapourproof 48W LED Luminaire IP66 BEKA VAPOURLINE OR SIMILAR APPROVED)	each	3		R	-
9	TESTING AND COMMISSIONING					
9.1	Inspections, testing and handing over of the complete installation in the presence of the Engineer and certify the results on the <i>Certificate of compliances by an accredited person.</i>	item	1		R	-
10	EARTHING				R	-
					R	-
10.1	Earthing of all buildings to comply with the latest SANS1 0142, <i>Code of Practice for The Wiring of Premises</i> as amended. Bonding of all hot, cold and waste pipes complete with 12,5mm x 1mm thick solid or perforated copper tape including fixings, brass screws, nuts, washers etc.: Also include for the earth mat with earth spikes	item	2		R	-
	TOTAL CARRIED TO SECTION SUMMARY				R	-
	MECHANICAL WORKS					
	SECTION 4					
	BILL NO.1					
	SANDBLASTING					
	MECHANICAL EQUIPMENT					
0.001	Supply and installation of Dust Collection System to remove airborne dust and pollutants by channelling fresh air from one end of the room towards exhaust plenums on the opposite side.[Filter area up to 266 m ² and airflow up to approx. 30.000 m ³ /h (depending on duct characteristics), High temperature versions up to 200°C]	No.	1		R	-
0.002	Supply and installation of Breathing Air Compressor to provide operators with access to clean breathing air while working. [10 L/s]	No.	1		R	-
0.003	Supply and installation of Blast Machine Air Compressor. Nominal effective working pressure - 10 Bar, Sound pressure level (LpA) at 7 m for 50Hz - 50 dB(A), Max. ambient temperature - 50°C, Power - 75 kW, Voltage - 400 V/3Ph/50Hz	No.	1		R	-
					R	-

0.004	Supply and installation of Blast Pot or Pressure Blast Tank. [Blasting pressure - 0 to 12 Bar, Operating temperature - 0°C to 50°C]	No.	2		R	-
0.005	Supply and installation of Blast Nozzle.	No.	2		R R R	- - -
0.006	Supply and installation of Blast Hose, Couplings and Safety Cables.	No.	2		R	-
0.007	Supply and installation of Moisture trap and separator. [Rated for up to 23m³/min airflow volume at 10 Bar]	No.	1		R R	- -
0.008	Supply and installation of Deadman Switch. [Blasting pressure of 0-12 bar and an operating temperature range of -15°C to +50°C]	No.	2		R	-
0.009	Supply and installation of Operators Breathing Filter. [Maximum air pressure - 8 Bar, Restrictions - no carbon monoxide (CO)]	No.	1		R	-
0.010	Air Storage Vessel (Air Receiver)(To supply air to blast pot). [0.8 m³]	No.	1		R	-
0.011	Air Compressor Dryer. [Capacity - 2.75 kW, Pressure - 1 Bar, Airflow - 125 L/s]	No.	1		R	-
0.012	Roller Shutter Doors - 5236mm (W) x 7000mm (H). [3mm thick cold rolled galvanised steel] - 120 minute fire rated roller shutter door c/w decent control, fusible links and dust seals.	No.	1		R	-
FIRE PROTECTION EQUIPMENT						
0.013	25mm Dia Fire Hose Reels SANS approved and supplied and fitted including, stop valves, hose reel base, clamps, nozzle brackets, fixing brackets, pressure gauge etc including length of 30m connecting pipe per reel as per the specification and tender drawings.	No.	1		R	-
0.014	Supply and install fire extinguishers SANS approved. Complete with meranti backing boards, steel bases, mounting brackets and wall anchors as per the detailed specifications. 4.5 kg DCP	No.	2		R	-

0.015	Supply and install fire extinguishers SANS approved. Complete with meranti backing boards, steel bases, mounting brackets and wall anchors as per detailed specifications. 5 kg CO2	No.	1		R	-
	CARRIED TO FINAL SUMMARY				R	-
	PROVISIONAL SUM					
	Provisoional sum of Five hundred and fity thousand rands for unforseen and or unclear information during tender stage.	sum	1		R	-
	CARRIED TO FINAL SUMMARY				R	-
	FINAL SUMMARY					
1	PRELIMINARY AND GENERAL				R	-
2	PART 1: PAINT BAY					
2.1	Building works				R	-
	Electrical Works				R	-
	Mechanical Works				R	-
3	PART 2:SAND BLASTING					
	Building works				R	-
	Electrical Works				R	-
	Mechanical Works				R	-
4	PROVISIONAL SUM				R	-
	SUBTOTAL				R	-