

# JEWELLERY MANUFACTURING PRECINCT

## SUPERBLOCK BUILDING NO. 4

### NEW BUILDING



# GIDZ IT, DATA & TELEPHONE BILL OF QUANTITIES

18 FEBRUARY 2021 - REVISION 0

**CONSULTING ELECTRICAL ENGINEER:**

SILVER HORNS CONSULTING  
Consulting Electrical Engineers

Contact Person: Mr Mashudu Netshisumbewa

# JEWELLERY MANUFACTURING PRECINCT

## SUMMARY PAGE

| ITEM | DESCRIPTION                                    | AMOUNTS       |
|------|--|---------------|
|      | CABINETS AND FIBRE OPTIC CABLE                 | R 0,00        |
|      | CABINETS ACCESSORIES                           | R 0,00        |
|      | IT OUTLET POINTS                               |               |
|      | TEMPORARY / PHASING WORKS                      |               |
|      | <b>SUB-TOTAL A</b>                             |               |
|      | TIME RELATED PRELIMINARY AND GENERAL ITEMS     |               |
|      | <b>SUB-TOTAL B (SUB-TOTAL A + P&amp;G)</b>     |               |
|      | ADD CONTINGENCY AMOUNT (10%)                   |               |
|      | <b>SUB-TOTAL C (SUB-TOTAL B + CONTINGENCY)</b> |               |
|      | ADD PROFESSIONAL FEES                          |               |
|      | <b>SUB-TOTAL D (SUB-TOTAL C + PROF FEES)</b>   | <b>R 0,00</b> |
|      | ADD 15% VAT                                    | R 0,00        |
|      | <b>TOTAL</b>                                   | <b>R 0,00</b> |

### EXCLUSIONS / CONDITIONS



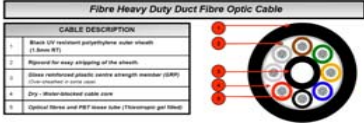

1 IT & DATA: Allowance is made for an IP system including CAT6A network cabling & Switches, Fibre backbone from the service provider to the building not included.

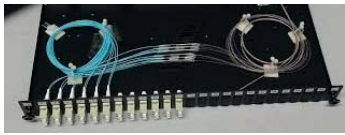
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| ITEM   | DESCRIPTION   | UNIT | QTY | RATE | AMOUNT |
|--------|---|------|-----|------|--------|
|        | <b>BILL 1</b>   |      |     |      |        |
|        | <b>PRELIMINARY AND GENERAL</b>  |      |     |      |        |
| 1.1    | <b>PRELIMINARY AND GENERAL ITEMS</b>  |      |     |      |        |
|        | <b>CONDITIONS OF CONTRACT</b>   |      |     |      |        |
|        | The conditions applicable to this contract are the Notes to Bidders, Preferential Procurement, Conditions of Contract, Addendum to Conditions of Contract, Contract Form, Bid Form, Technical Specifications and Preliminaries as attached:   |      |     |      |        |
| (a)    | Insurance   | item | 1   |      |        |
| (b)    | Surety  | item | 1   |      |        |
| (c)    | Construction Guarantee  | item | 1   |      |        |
| 1.3    | <b>SITE OFFICE</b>  |      |     |      |        |
|        | The IT / DATA contractor shall establish on site and provide a temporary site office, for his own use, where all the drawings and specifications shall be kept. The office must be at least 6m x 3m to allow two tables. One table with four chairs must be dedicated for the discussions and meetings with the Electrical Engineer. Allow for the site office including de-establishment of site, cleaning and tidying up in the course of the contract. |      |     |      |        |
| 1.3.1  |   | item | 1   |      |        |
| 1.4    | <b>SITE MATERIAL STORE</b>  |      |     |      |        |
|        | The IT / DATA contractor shall provide a safe and adequate storing space for all material and equipment brought to site. The minimum acceptable allowance is 1x 6m x 3m steel container. This container must be on site 14 days after contract awarding. Allow for storage space including -de-establishment of site, cleaning and tidying up in the course of the contract   |      |     |      |        |
| 1.4.1  |   | item | 1   |      |        |
| 1.5    | <b>TRANSPORT OF MATERIALS</b>   |      |     |      |        |
| 1.5.1  | Provide and arrange for all necessary transport including off loading of all material and equipment to the site stores.   | item | 1   |      |        |
| 1.6    | <b>OUT OF TOWN / "COUNTRY" ALLOWANCE</b>  |      |     |      |        |
| 1.6.1  | Allowance for accommodation and travelling to and from site<br>Allowance for accommodation  | item | 1   |      |        |
| 1.7    | <b>COMMUNICATION</b>  |      |     |      |        |
| 1.7.1  | Allow for a telephone, cell phone, fax and e-mail facilities for the full duration of the contract  | item | 1   |      |        |
| 1.8    | <b>SECURITY</b>   |      |     |      |        |
| 1.8.1  | Security for the full contract period   | item | 1   |      |        |
| 1.9    | <b>HEALTH AND SAFETY PLAN</b>   |      |     |      |        |
| 1.9.1  | Provide a Health and Safety Plan in accordance with the OHS Act Construction Regulations, attend H&S meetings called by the Main Contractor, report on compliance with H&S Plan, appoint H&S representative and manage H&S Plan for the duration of the contract  | item | 1   |      |        |
| 1.10   | <b>CONTRACT MANAGEMENT</b>  |      |     |      |        |
| 1.10.1 | Full time contract management and supervision of the works including liaison with Principal Contractor, other Subcontractors, meetings and submission of installation programme including weekly revisions thereto from time to time or as may be required by the Principal Contractor or Employer.   | item | 1   |      |        |
| 1.11   | <b>LIAISON</b>  |      |     |      |        |
| 1.11.1 | Liaison with Main Contractor of works to be done on a regular basis   | item | 1   |      |        |
| 1.12   | <b>CLEANING OF SITE - DAILEY</b>  |      |     |      |        |
| 1.12.1 | Cleaning and restoration of the site at the end of every working day to the satisfaction of the Engineer and client.  | item | 1   |      |        |

|  |   |       |   |  |  |
|--|---|-------|---|--|--|
| 1.13   | <b>ADDITIONAL ITEMS</b>   |       |   |  |  |
| 1.13.1                                       | Ablution facilities   | item  | 1 |  |  |
| 1.13.2                                       | Site water and electrical services for duration of construction   | item  | 1 |  |  |
| 1.14.1                                       | <b>STAFF CLOTHING</b>   |       |   |  |  |
| 1.14.1                                       | The Bidder must price for his staff to wear distinctive YELLOW overalls, Reflective bibs, YELLOW hard hats and Safety shoes for the duration of the contract.   | item  | 1 |  |  |
| 1.15   | <b>PLANT AND SCAFFOLDING</b>  |       |   |  |  |
| 1.15.1                                       | Allow for plant, Hydraulic personnel lifting plant, scaffolding, etc. availability for the contract as specified  | item  | 1 |  |  |
| 1.16   | <b>COMMISSIONING AND TESTING</b>  |       |   |  |  |
|  | Supply of all test equipment and labour for testing, commissioning and adjustment of the final installation in accordance with the specification as well as being in attendance and giving assistance for any inspections and tests that the Engineer and/or the supply authority may call for.   | item  | 1 |  |  |
| 1.17   | <b>AS-BUILT DRAWINGS</b>  |       |   |  |  |
| 1.17.1                                       | Provide a complete set of As-build drawings.<br><small>The IT/DATA Contractor must mark a complete set of drawing with all changes made on the latest revised drawings issued by the Electrical Engineer.<br/>The contractor must arrange for a meeting with the Electrical Engineer to discuss the mark-up drawings. The IT/DATA contractor as well as the IT/DATA Foreman on site that was responsible for the works on site.</small> | item  | 1 |  |  |
| 1.18   | <b>OPERATIONS AND MAINTENANCE MANUALS</b>   |       |   |  |  |
|  | Provide three sets of O&M Manuals to the client.<br>These manuals must at least have the following:   |       |   |  |  |
| 1.18.1                                       | 1. Details including catalogues and contact numbers for all cables and equipment installed<br>2. Updated drawings &<br>3. Contact details of the IT contractor during maintenance period  | item  | 1 |  |  |
| 1.19   | <b>MAINTENANCE</b>  |       |   |  |  |
| 1.19.1                                       | Allow for a maintenance period of 12 months defects in equipment, material and workmanship excluding wear and tear and normal maintenance.  | item  | 1 |  |  |
| 1.20   | <b>GUARANTEE PERIOD</b>   |       |   |  |  |
| 1.20.1                                       | Allow for a 12 months guarantee period on all the equipment installed.  | item  | 1 |  |  |
| 1.21   | <b>OTHER ITEMS:</b>   |       |   |  |  |
|  |   | month |   |  |  |
| <b>TOTAL CARRIED FORWARD TO SUMMARY PAGE</b> |   |       |   |  |  |

| ITEM  | DESCRIPTION  | ADDITIONAL DESCRIPTION / SPECIFICATION   | UNIT   | TOTAL QTY | SUPPLY RATE | INSTALLATION RATE | SUPPLY AMOUNT | INSTALL AMOUNT | TOTAL AMOUNT |
|-------|--|--|--------|-----------|-------------|-------------------|---------------|----------------|--------------|
|       | <b>BILL 1</b>  |  |        |           |             |                   |               |                |              |
|       | <b>CABINETS AND FIBRE OPTIC CABLE</b>  |  |        |           |             |                   |               |                |              |
| 1.1   | <b>PRIMARY / SECONDARY SERVER ROOM CABINETS</b>  |  |        |           |             |                   |               |                |              |
|       | 43U 1200mm deep<br>Rack Configuration: Single<br>Rack Height: 43 U<br>Weight: 43U/1000 – 124kg<br>Width of rack: 800mm<br>Depth: 1000mm<br>Weight Capacity: 600kg  |   |        |           |             |                   |               |                |              |
|       | 1.6mm CRCQ Anti-Rust Zinc Phosphate welded frame/housing & 1.0mm CRCQ doors with a 75% open perforated steel door. Powder coated in two tone grey (RAL 7035/7037)<br>Warranty 1 Year, Standard ISO 9001:2000, IEC 297 1975, BS 5954:1980<br>Perforated front door with swing handle lock and rear camlock door |  |        |           |             |                   |               |                |              |
| 1.1.1 | 43U Cabinet as per above minimum Specifications  |  | each   | 5         |             |                   |               |                |              |
| 1.1.2 | Consumables associated to 43U Cabinet above  |  | each   | 1         |             |                   |               |                |              |
| 1.2   | <b>12U CABINETS</b>  |  |        |           |             |                   |               |                |              |
|       | 12U Swing Frame Cabinet as per Mediclinic Specification:   |  |        |           |             |                   |               |                |              |
| 1.2.1 | 12U Wall mounted Network cabinet.<br>Swing frame<br>Glass front door<br>Model: APOLLO CP412U.GLA.B<br>Supplier: CPS Technologies   |   | each   |           |             |                   |               |                |              |
| 1.2.2 | Consumables associated to 12U Cabinet above  |  | each   |           |             |                   |               |                |              |
| 1.3   | <b>FIBRE CABLE</b>   |  |        |           |             |                   |               |                |              |
|       | 1. Polyethylene water resistant sheath.<br>2. Core binder.<br>3. Aramid strength member.<br>4. Interstitial water blocking flooding compound.<br>5. Gel filled loose tubes.<br>6. Colour coded fibres.<br>7. GRP centre strength member  |  |        |           |             |                   |               |                |              |
| 1.3.1 | PRIMARY FEED TO SEVER ROOM<br>OM4 12-Core heavy duty fibre optic cable   |  | meters | 160       |             |                   |               |                |              |
| 1.3.2 | SECONDARY FEED TO SERVER ROOM<br>OM4 12-Core heavy duty fibre optic cable  |  | meters | 160       |             |                   |               |                |              |
| 1.3.3 | Consumables  |  | item   | 1         |             |                   |               |                |              |
| 1.4   | <b>FIBRE CABLE SPLICING</b>  |  |        |           |             |                   |               |                |              |
| 1.4.1 | Splicing of fibre optic cables - 43U cabinets  |  | item   | 30        |             |                   |               |                |              |
| 1.4.2 | Splicing of fibre optic cables - 12U cabinets  |  | item   | 15        |             |                   |               |                |              |
|       |   |  |        |           |             |                   |               |                |              |





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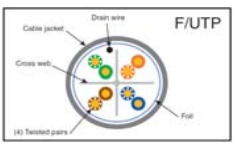
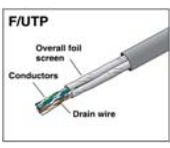

| ITEM                        | DESCRIPTION   | ADDITIONAL DESCRIPTION / SPECIFICATION  | UNIT | TOTAL QTY | SUPPLY RATE | INSTALLATION RATE | SUPPLY AMOUNT | INSTALL AMOUNT | TOTAL AMOUNT |
|-----------------------------|---|---|------|-----------|-------------|-------------------|---------------|----------------|--------------|
| <b>BILL 2</b>               |   |   |      |           |             |                   |               |                |              |
| <b>CABINETS ACCESSORIES</b> |   |   |      |           |             |                   |               |                |              |
| 2.1                         | Fibre Patch Panel   |   |      |           |             |                   |               |                |              |
|                             | 1U Fibre Patch Panel for 19" Racks<br>Port configurations: 1 - 24<br>Connector compatibility: STD SC, ST & LC<br>Thickness: 1.2mm mild steel<br>Preparation: Washed and Treated With FerroPhos Anti Rust Agent<br>Paint: Powder coated Falcon Black 694200  |    | each | 6         |             |                   |               |                |              |
| 2.1.1                       | OM4 Fibre cable - LC to LC Duplex patch lead  |   |      |           |             |                   |               |                |              |
|                             | The 50/125µm OM4 multimode bend insensitive fiber optic cable is less attenuation when bent or twisted compared with traditional optical fiber cables and this will make the installation and maintenance of the fiber optic cables more efficient. It can also save more space for your high density cabling in data centers, enterprise networks, telecom room, server farms, cloud storage networks, and any places fiber patch cables are needed.<br><br>This 50/125 OM4 multimode fiber optic cable is ideal for connecting 40G BIDI SR, 10G SR, QSFP+, SFP+ transceivers etc. for 10G/40G/100G Ethernet connections and is the preferred fiber specification for 40G/100G applications<br><br>Connector Type: LC to LC                      Polish Type: UPC to UPC<br>Fiber Mode: OM4 50/125µm                  Wavelength: 850/1300nm<br>40G Ethernet Distance: 150m at 850nm      100G Ethernet Distance: 100m at 850nm<br>Insertion Loss: ≤0.3dB                      Return Loss: ≥20dB<br>Fiber Grade: Bend Insensitive              Minimum Bend Radius: 7.5mm<br>Attenuation at 850nm: 3.0 dB/km              Attenuation at 1300nm: 1.0 dB/km<br>Fiber Count: Duplex                          Cable Diameter: 2.0mm<br>Cable Jacket: PVC                              Polarity: A(Tx) to B(Rx)<br>Operating Temperature: -20~80°C              Storage Temperature: -40~80°C |   | each | 12        |             |                   |               |                |              |
| 2.1.2                       | Fibre cable - LC Duplex Adaptors  |   |      |           |             |                   |               |                |              |
|                             | LC/UPC to LC/UPC 10G Duplex Multimode OM4 SC Type<br>Plastic Fiber Optic Adapter/Mating Sleeve with Flange.<br>By linking two connectors precisely, fiber optic adapters allow the light sources to be transmitted at most and lower the loss as much as possible. At the same time, fiber optic adapters have the merits of low insertion loss, good interchangeability and reproducibility. FS supplies a wide range of mating sleeves and hybrid adapters, including special male to female hybrid fiber optic adapter.<br><br>Connector Type: LC-LC                      Body Style: Duplex<br>Polish Type: UPC                              Fiber Mode: Multimode OM4<br>Insertion Loss: ≤0.2dB                      Durability: 1000 times<br>Mounting Type: Full Flanged              Alignment Sleeve Material: Ceramic<br>Color: Violet                                  Flammability Rate: UL94-V0  |  | each | 16        |             |                   |               |                |              |
| 2.1.3                       | Fibre Splice Tray   |   |      |           |             |                   |               |                |              |

|     |   |   |          |    |  |  |  |  |  |
|-----|---|---|----------|----|--|--|--|--|--|
|     | <p>Stackable splice cassettes suitable for patch panels, wall boxes and enclosures</p> <ul style="list-style-type: none"> <li>• Can be used to hold up to 24x 60mm splice protectors, or up to 12x 40mm splice protectors</li> <li>• Integral fibre management</li> <li>• Supplied with lid to protect fibres</li> </ul>  |    | each     | 6  |  |  |  |  |  |
| 2.2 | <p>24-Way Patch Panel with Strain relief</p> <p>24-port all metal modular patch panel with strain relief bar<br/>Mini-Com® All Metal Shielded Modular Patch Panels<br/>Accept Mini-Com® Modules for shielded applications<br/>Provide write-on areas for port identification<br/>CPT removal tool allows easy moves, adds, and changes of shielded jack modules<br/>Mount to standard TIA/EIA 19" rack or 23" racks with optional extender bracket</p> <p>PANDUIT code: CP24WS8LY OR SIMILLAR</p> |    | each     | 15 |  |  |  |  |  |
| 2.3 | <p>24-Way Brush panel</p> <p>1RU Brush Panel<br/>Cold rolled steel material<br/>Contains (4) M6 Phillips screws and (4) M6 cage nut, (4) #12-24 for tapped E-rail mounting</p> <p>PANDUIT Code: BR1B OR SIMILLAR</p>  |    | each     | 18 |  |  |  |  |  |
| 2.4 | <p>Blank flat cover - 1 RU</p> <p>1RU Horizontal Flat Rack Filler Panel<br/>Black powder coated</p> <p>PANDUIT Code: DPFP1 OR SIMILLAR</p>  |    | each     | 15 |  |  |  |  |  |
| 2.5 | <p>Blank flat cover - 2 RU</p> <p>1RU Horizontal Flat Rack Filler Panel<br/>Black powder coated</p> <p>PANDUIT Code: DPFP2 OR SIMILLAR</p>  |    | each     | 54 |  |  |  |  |  |
| 2.6 | <p>25-Way ISDN Patch Panel</p> <p>The light weight Cabinet Brush Panel allow UTP Patch cords to be fed to or from the rear of the cabinet.<br/>Gives an orderly appearance to a cabinet and prevents dust ingress.<br/>Available in a 1U height</p>   |  | each     |    |  |  |  |  |  |
| 2.7 | <p>Double sided Velcro tape</p>   |  | 25m roll | 3  |  |  |  |  |  |
| 2.8 | <p>Labelling:<br/>Labelling of Cabinet<br/>Labelling of Patch Panels<br/>Labelling of Fibre cables<br/>Labelling of Patch leads</p>   |   | item     | 3  |  |  |  |  |  |
| 2.9 | <p>Consumables</p>  |   | item     | 6  |  |  |  |  |  |



|        |  |  |      |   |  |  |  |  |  |
|--------|--|--|------|---|--|--|--|--|--|
| 2.10   | <b>PDU (Power Distribution Unit)</b><br>  |  |      |   |  |  |  |  |  |
| 2.10.1 | <b>3-WAY PDU (Power Distribution Unit)</b><br>3-Way PDU<br>Power ON indication light<br>3x Red Dedicated socket outlets  |  | each |   |  |  |  |  |  |
| 2.10.2 | <b>10-WAY PDU (Power Distribution Unit)</b><br>10-Way PDU<br>Power ON indication light<br>10x Red Dedicated socket outlets   |  | each | 6 |  |  |  |  |  |
| 2.11   | <b>PoE Smart Switches</b><br>Cloud Managed Switch 48 Port 1000base-T Gigabit PoE Smart Switch. 1024 in Switch mode, approximately 100 in Router mode; Internal 100-240VAC 50-60Hz; Layer 3 capabilities, supporting Protocol Independent Multicasting, Rack Mountable<br> |  | each | 4 |  |  |  |  |  |
|        | Cloud Managed Wireless Access Points POE   |  |      | 8 |  |  |  |  |  |

TOTAL CARRIED FORWARD TO SUMMARY PAGE

| ITEM   | DESCRIPTION  | ADDITIONAL DESCRIPTION / SPECIFICATION | UNIT | TOTAL QTY | SUPPLY RATE | INSTALLATION RATE | SUPPLY AMOUNT | INSTALL AMOUNT | TOTAL AMOUNT |
|--|--|--|------|-----------|-------------|-------------------|---------------|----------------|--------------|
| <b>BILL 4</b><br><b>IT OUTLET POINTS</b><br>CAT 6A F/UTP CABLE:<br><br>Category 6A cable shall be constructed of 23 AWG copper conductors with PE CM, CMR or LSZH insulation. The copper conductors shall be twisted in pairs and separated by an integrated pair separator. All four pairs shall be surrounded by an overall metallic foil shield within a low smoke zero halogen jacket. The TX6A™ 10Gig™ Shielded Copper Cable must be installed as part of a complete TX6A™ 10Gig™ Shielded Copper Cabling System to achieve 10GBASE-T certified performance.<br><br>   |  |  |      |           |             |                   |               |                |              |
|  | KEYSTONE JACK MODULE AT OUTLET POINT - PANDUIT KJ56X88TC |  |      |           |             |                   |               |                |              |

Category 6A/Class EA, 8-position, shielded jack module shall terminate 4-pair, 22 – 24 AWG, 100 ohm shielded twisted pair cable and shall not require use of a punchdown tool. Shielded jack modules shall use a forward motion termination method to optimize performance. The termination cap shall include a universal label coded for T568A and T568B wiring schemes. Jack shall utilize a die-cast housing. The jack wire cap shall be fully encapsulated with the housing when terminated. The Shielded Jack Module must be installed as part of the Keystone Shielded Copper Cabling System to achieve IEEE 10GBASE-T certified performance



**JACK MODULE AT CABINET PATCH PANEL - PANDUIT CJ56X88TGY OR SIMILLAR**

Category 6A/Class EA, 8-position, shielded jack module shall terminate 4-pair, 22 – 26 AWG, 100 ohm shielded twisted pair cable and shall not require use of a punchdown tool. Shielded jack modules shall use a forward motion termination method to optimize performance by maintaining cable pair geometry while eliminating conductor untwist. The termination cap shall be color-coded blue to designate Category 6A performance and shall include a universal label coded for T568A and T568B wiring schemes. The Mini-Com™ TX6A™ 10Gig™ Shielded Jack Module must be installed as part of the TX6A™ 10Gig™ Shielded Copper Cabling System to achieve IEEE 10GBASE-T certified performance.



The outlet points will include the entire installation from cabinet to outlet point including:

1. CAT 6A F/UTP cabling Blue 90m Maximum
2. PANDUIT Category 6A 45° angled up/down TG wire cap
3. PANDUIT Category 6A, 10 Gb/s, RJ45, 8-position, 8-wire Jack Module
4. RJ45 flat PVC cap
5. Cable cut and on site terminations
6. Power skirting RJ45 Panduit or similar outlet points
7. Fly leads at outlets & Patch panel leads at cabinet
8. Testing and Certifying each point

|       |   |      |     |  |  |  |  |  |
|-------|---|------|-----|--|--|--|--|--|
| 4.1   | <b>WI-FI OUTLET POINTS</b><br>Wi-fi point   | each | 8   |  |  |  |  |  |
| 4.2   | <b>TELEPHONE POINTS</b><br>Complete point   | each |     |  |  |  |  |  |
| 4.3   | <b>COMPUTER POINT</b><br>Complete point   | each | 151 |  |  |  |  |  |
| 4.4   | <b>PRINTER POINT</b><br>Complete point  | each | 2   |  |  |  |  |  |
| 4.5   | <b>OTHER</b>  |      |     |  |  |  |  |  |
| 4.5.1 | <b>CRABTREE face plate and adapter for power skirting</b><br>Complete point   | each | 70  |  |  |  |  |  |
| 4.5.2 | <b>CRABTREE face plate and adapter for Floor box</b><br>Complete point  | each | 18  |  |  |  |  |  |
| 4.5.3 | <b>Repair of fire seals where fire integrity is compromised due to opening of fire compartment to pull in cables</b><br>PC Amount | each | 50  |  |  |  |  |  |

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