

**Client Name:**  
TFA HYDERABAD

**FL Group**  
New no:7, Old no:4, 4th Cross Street,  
Shenoy Nagar West , Chennai-600030  
GSTIN: 33AACCF7383A1ZY  
Quote: FL-2011/ 850  
Date:04-03-2024

**HATTI KAAPI - FL TRADERS PVT LTD.,**

**BILL OF QUANTITIES AND ESTIMATE**

| BILL OF QUANTITIES AND ESTIMATE   |  |      |     |                         |        |         |              |       |
|---|--|------|-----|-------------------------|--------|---------|--------------|-------|
| <b>PROJECT: FF-052_HATTI KAAPI</b>  |  |      |     | <b>DATE: 07.02.2024</b> |        |         |              |       |
| <b>ELECTRICAL SERVICES, CCTV &amp; DATA - WORKS BILL OF QUANTITIES AND ESTIMATE</b> |  |      |     | <b>REV: RO</b>          |        |         |              |       |
|   |  |      |     | <b>STATUS: TENDER</b>   |        |         |              |       |
| <b>GENERAL NOTES :</b>  |  |      |     |                         |        |         |              |       |
| Item Code   | Item Name  | UOM  | Qty | UNIT COST               | AMOUNT | REMARKS | SWAN REMARKS | MAKES |
| <b>A</b>  | <b>METER / METER PANEL</b>   |      |     |                         |        |         |              |       |
|   | Supply, Installation, Testing & Commissioning of kWH / MFM Energy Meter Panel complete with Enclosure (If required as per site condition / Airport TDM).   |      |     |                         |        |         |              |       |
|   | Energy Meter shall be of Digital kVAH Type and Make / Manufacturer from below list, or any other make with kVAH option with Approval from TS Department. For Make refer list below,  |      |     |                         |        |         |              |       |
|   | Single Phase (For load below 40A) : Make - MID (Algodue Electronica), Model - UEM 40-2C. Type - Direct.  |      |     |                         |        |         |              |       |
| A.1   | Three Phase (For load below 60A) : Make - Secure, Model - Sprint 350, Type - Direct.   |      |     |                         |        |         |              |       |
|   | Three Phase (For load above 60A) :   |      |     |                         |        |         |              |       |
|   | 1) Make - Secure, Model - Elite 445, Type - C.T.   |      |     |                         |        |         |              |       |
|   | 2) Make - Conzerv (Schneider Electric), Model - EM6438, Type - C.T.  |      |     |                         |        |         |              |       |
|   | 3) Make - L & T, Model - Vega TM (WDM303FDWA1), Type - C.T.  |      |     |                         |        |         |              |       |
| A.1.1   | 63A/5A ENERGY METER (DIRECT TYPE)  | Nos. | 1   | 19416                   | 19416  |         |              |       |
| <b>B</b>  | <b>LV CABLING</b>  |      |     |                         |        |         |              |       |
|   | Supply, Installation, Testing & Commissioning of <b>Fire Rated LS/LSZH PVC insulated PVC sheathed, Copper conductor, Steel Tape / Wire Armoured, 1100V grade cable, Number of Cable Core as per SLD / Load Calculation Sheet (Main Cable) &amp; Unarmoured Single Core Wire (ECC)</b> , complete with Termination of the same with Single Compression Brass Glands, Solderless Tinned Copper Lugs, Gland earthing, etc. The cable shall be laid Underground / on Cable Tray / through Cable Trunking / in Pipe / on Wall / Trench as required. |      |     |                         |        |         |              |       |
| B.1   | Make : Electrical Wires & Cables : Finolex, Polycab, RR Kables, KEI or equivalent.   |      |     |                         |        |         |              |       |
|   | For cables laid on Cable Tray / in Pipe / on Wall / Trench - the rate shall include necessary supporting / clamping arrangements.  |      |     |                         |        |         |              |       |
| B.1.1   | 1C x 16 MM2 Wire   | Mtr. | 15  | 456                     | 6840   |         |              |       |
| B.1.2   | 1C x 10 MM2 Wire   | Mtr. | 30  | 312                     | 9360   |         |              |       |
| <b>C</b>  | <b>DISTRIBUTION BOARDS</b>   |      |     |                         |        |         |              |       |

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| STATUS:  |   |      |     |                  |        |         |              |   |
| GENERAL NOTES :  |   |      |     |                  |        |         |              |   |
| Item Code  | Item Name   | UOM  | Qty | UNIT COST        | AMOUNT | REMARKS | SWAN REMARKS | MAKES   |
| C.1  | <p>Supply, Installation, Testing &amp; Commissioning of Surface / Flush mounting 10kA / 25kA (As per Panel requirement) Distribution Boards. The DB shall be made out of 1.2 mm CRCA sheet steel enclosure and powder coated complete with cable gland plate &amp; knock out at the top and bottom. The DB shall have hinged lockable door. The busbar shall be finned copper, for phases mounted on suitable type Insulator, Independent neutral busbar including inter connecting wiring &amp; earth bus on insulation mount.</p> <p>Make : Electrical Panel / DB's &amp; Breakers (MCB, RCBO, ELCB &amp; MCCB) : Legrand, Siemens, ABB, Schneider or equivalent.</p> <p>All DB's must named as per the SLD / Load Calculation Sheet. Laminated SLD &amp; Load Calculation Sheet shall be placed near to DB Panel Locations.</p> <p>The RCCB / RCBO shall be Hpi / Si series &amp; MCB's shall be 'B' / 'C' Curve (As per requirement).</p>   |      |     |                  |        |         |              |   |
| <b>LPDB</b>  |   |      |     |                  |        |         |              |   |
| C.1.2  | 4 Way TPN Panel Board with 32A 30mA 4P RCBO incomer, and outgoings as per SLD & Load Calculation Sheet.   | Nos. | 1   | 41784            | 41784  |         |              |   |
| <b>UPS DB</b>  |   |      |     |                  |        |         |              |   |
| C.1.3  | 4 Way SPN Panel Board with 20A 30 mA 2P RCBO incomer and outgoings as per SLD & Load Calculation Sheet.   | Nos. | 1   | 6984             | 6984   |         |              | Legrand / Indo Asian  |
| <b>D LIGHT FIXTURES POINT WIRING</b>                                     |   |      |     |                  |        |         |              |   |
| D.1  | <p>Supply, Installation, Testing &amp; Commissioning of Light Fixture Point wiring (Light Fixtures to be as approved by Architect Design &amp; BOQ) with Lamps, Ballasts / Drivers / Starters, Switches / Lighting Control Switch Board with Fire Rated <b>LS/LSZH PVC insulated Flexible Copper Wires</b> 660/1100V grade through suitable size <b>GI Conduit / Heavy Duty PVC Conduit</b> / GI Trunking (Containment size &amp; Type selection as per site requirement), complete with suitable GI Back boxes, Earthing, accessories, flexible conduits, glands, saddles, supports, ropes for future wire pulling, Labeling of wires etc. with Termination of the same with Solderless Tinned Copper Lugs, etc. carrying out Surface / Concealed wiring as per site condition &amp; maintain aesthetic of the unit. Wiring shall be as per IS 732.</p> <p>Make : Light Fixtures : Philips, Wipro, Crompton, Syska or equivalent.<br/>Make : PVC Conduits : Sudhakar, Shakti or equivalent.<br/>Make : GI Conduits : Techno Flex India, K. M. Cables &amp; Conduits or equivalent with Airport approval.</p> <p>The rate shall include wall chasing, chipping of floors, rough plastering, providing suitable supports / brackets for conduit and Trunking suspension.</p> |      |     |                  |        |         |              | Rate quoted is as per the Drawing 2R 2.5 + 1 R 1.5 Sqmm PVC insulated LSZH Copper Wires |
| D.1.2  | TRACK LIGHT (Point Wiring only)   | Nos. | 8   | 5736             | 45888  |         |              |   |

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|  |  |      |     | REV: RO          |        |         |                                    |                           |
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| GENERAL NOTES :  |  |      |     |                  |        |         |                                    |                           |
| Item Code  | Item Name  | UOM  | Qty | UNIT COST        | AMOUNT | REMARKS | SWAN REMARKS                       | MAKES                     |
| D.1.5  | SIGNAGE LIGHTS (Point Wiring only)   | Nos. | 2   | 5736             | 11472  |         | Quoted for GI Conduit              | Lapp infra / RR Kabel     |
| D.1.6  | LIGHTING CONTROL SWITCH BOARD WITH SWITCHES AS REQ   | Nos. | 1   | 2208             | 2208   |         |                                    |                           |
| <b>E</b>   | <b>WIRING DEVICES (SWITCHES &amp; SOCKETS)</b>   |      |     |                  |        |         |                                    |                           |
| E.1  | <p>Supply, Installation, Testing &amp; Commissioning of Wiring Devices (Switches &amp; Sockets - Face Plate Finish as approved by Architect / Matching to Architecture Finishes) with Fire Rated LS/LSZH PVC insulated Flexible Copper Wires 660/1100V grade through suitable size GI Conduit / Heavy Duty PVC Conduit / GI Trunking (Containment size &amp; Type selection as per site requirement), complete with suitable GI Back boxes, Earthing, accessories, flexible conduits, glands, saddles, supports, ropes for future wire pulling, Labeling of wires etc. with Termination of the same with Solderless Tinned Copper Lugs, etc. carrying out Surface / Concealed wiring as per site condition &amp; maintain aesthetic of the unit. Wiring shall be as per IS 732.</p> <p>Make : Switch &amp; Sockets : Anchor Roma / Penta, Legrand, Havells Crabtree, Finolex, L &amp; T Switchgear or equivalent.<br/>Make : PVC Conduits : Sudhakar, Shakti or equivalent.<br/>Make : GI Conduits : Techno Flex India, K. M. Cables &amp; Conduits or equivalent with Airport approval.</p> <p>The rate shall include wall chasing, chipping of floors, rough plastering, providing suitable supports / brackets for conduit and Trunking suspension.</p> |      |     |                  |        |         |                                    |                           |
| E.1.1  | 13A SINGLE SWITCHED SOCKET OUTLET  | Nos. | 10  | 1212             | 12120  |         | Rate quoted is exclusive of wiring |                           |
| E.1.2  | 16A SINGLE SWITCHED SOCKET OUTLET (METAL CLAD)   | Nos. | 3   | 2328             | 6984   |         |                                    |                           |
| E.1.3  | 20A SINGLE SWITCHED SOCKET OUTLET (METAL CLAD)   | Nos. | 2   | 2328             | 4656   |         |                                    |                           |
| E.1.4  | 13A DUAL SWITCHED SOCKET OUTLET  | Nos. | 2   | 2292             | 4584   |         |                                    |                           |
| <b>F</b>   | <b>CONTAINMENT (CABLE TRAY &amp; TRUNKING)</b>   |      |     |                  |        |         |                                    |                           |
| F.1  | <p>Supply &amp; Installation of GI Cable Tray &amp; GI Cable Trunking, through Wall / Ceiling / Floor as per drawings, complete with standard accessories / factory made fittings, earthing throughout the run with copper braids, wall / ceiling suspended supports, etc.</p> <p>Make : Cable Management System : Dudhat, Super, K.R. Power supports or equivalent with Airport approval.</p>   |      |     |                  |        |         |                                    |                           |
| F.1.1  | 50 x 50 MM CABLE TRUNKING  | Mtr. | 3   | 720              | 2160   |         |                                    |                           |
| <b>G</b>   | <b>UPS SYSTEM</b>  |      |     |                  |        |         |                                    |                           |
| G.1  | <p>Supply, Installation, Testing &amp; Commissioning of UPS along with required Battery for specified back-up time, complete with Battery Stand (If required) &amp; standard accessories / equipments required for complete functioning of the system, earthing, support system (if required), etc.</p> <p>Make : UPS System : Luminous, APC, Microtek or equivalent with Airport approval.</p>  |      |     |                  |        |         |                                    | Eaton / Vertive / Lumeric |
| G.1.1  | 1KVA Single phase UPS with 30 Minute Back-up   | Nos. | 1   | 78852            | 78852  |         |                                    |                           |
| <b>H</b>   | <b>CCTV SYSTEM</b>   |      |     |                  |        |         |                                    |                           |

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| GENERAL NOTES :  |   |      |     |                  |                 |                |  |                  |  |
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| H.1  | <p>Supply, Installation, Testing &amp; Commissioning of CCTV System with suitable / required cabling through suitable size GI Conduit / GI Trunking (Containment size &amp; Type selection as per site requirement), complete with suitable GI Back boxes, Earthing, accessories, flexible conduits, glands, saddles, supports, ropes for future wire pulling, Labeling of wires etc. with Termination of the same with CCTV console / DVR, etc. carrying out Surface / Concealed wiring as per site condition &amp; maintain aesthetic of the unit.</p> <p>Make : CCTV System : Hikvision, Honeywell, Dahua, or equivalent with Airport approval.<br/>Make : GI Conduits : Techno Flex India, K. M. Cables &amp; Conduits or equivalent with Airport approval.</p> <p>The rate shall include wall chasing, chipping of floors, rough plastering, providing suitable supports / brackets for conduit and Trunking suspension.</p> |      |     |                  |                 |                | Rate quoted is exclusive of wiring     |                  |  |
| H.1.1  | CCTV Dome Camera, 4 Megapixel / As approved or confirmed by client, Real Day / Night, Exir, IR LED, IP 67, with all necessary accessories, Power supply units etc.  | Nos. | 1   | 8988             | 8988            |                | Hikvision model No - DS-2CD1343G0E-I   |                  |  |
| H.1.2  | CCTV IP Dome Camera (CAT 6), 4 Megapixel / As approved or confirmed by client, Real Day / Night, Exir, IR LED, IP 67 with all necessary accessories, Power supply units etc.  | Nos. | 1   | 8988             | 8988            |                |  |                  |  |
| H.1.3  | DVR with 45 Days Back-up  | Nos. | 1   | 48180            | 48180           |                | Hikvision model No DS - 7200HUHI - K/P |                  |  |
| <b>I</b>   | <b>DATA NETWORK SYSTEM</b>  |      |     |                  |                 |                |  |                  |  |
| I.1  | <p>Supply, Installation, Testing &amp; Commissioning of Data &amp; Telephone Network System with required cabling through suitable size GI Conduit / Heavy Duty PVC Conduit / GI Trunking (Containment size &amp; Type selection as per site requirement), complete with suitable GI Back boxes, Earthing, accessories, flexible conduits, glands, saddles, supports, ropes for future wire pulling, Labeling of wires etc. with Termination of the same with IDF Rack, etc. carrying out Surface / Concealed wiring as per site condition &amp; maintain aesthetic of the unit.</p> <p>Make : IT Cables &amp; Accessories : Belden (Part Code - 7834ANC).</p> <p>The rate shall include wall chasing, chipping of floors, rough plastering, providing suitable supports / brackets for conduit and Trunking suspension.</p>  |      |     |                  |                 |                | Rate quoted is exclusive of wiring     |                  |  |
| I.1.1  | Dual Data outlet (RJ45) Jack  | Nos. | 1   | 1992             | 1992            |                |  | Legrand          |  |
| I.1.2  | Single Data outlet (RJ45)   | Nos. | 3   | 1164             | 3492            |                |  | Arteor /         |  |
| I.1.3  | Patch Cords (1.5 meters length)   | Nos. | 5   | 360              | 1800            |                |  | Anchor Roma plus |  |
| <b>GRAND TOTAL NET</b>   |   |      |     |                  | <b>3,26,748</b> |                |  |                  |  |
| <b>NOTE :</b>  |   |      |     |                  |                 |                |  |                  |  |

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**GST EXTRA**