



**New solar photovoltaic (PV) system installation complete with 2m tank stand for three tanks, three (3) domestic water tanks, steel cattle trough and trough foundation, two taps and tap stand.**

| TENDER SPECIFICATIONS/SCHEDULE OF QUANTITIES/PRICE |  |                  |       | Water Point Number |                   | Region                     |                    |
|--|--|------------------|-------|--------------------|-------------------|----------------------------|--------------------|
|  |  |                  |       |                    |                   | Oshikoto                   |                    |
| Location Name                                      | Nandelifa  |                  |       | GPS Reading        |                   | S:18.02318°<br>E:17.57860° |                    |
| Distance from nearest Centre                       | Ondangwa 100km   |                  |       | Condition of Road  |                   | Sandy                      |                    |
| <b>Borehole/Well</b>                               |  |                  |       |                    |                   |                            |                    |
| WW Number  | 207086   | Borehole Depth   | 150m  | Number of Pipes    | 40                | Casing Diameter            | 165mm              |
| Installation Depth                                 | 120m   | Rest Water Level | 74.19 | Pump Water Level   |                   | Pumping Yield              | 2m <sup>3</sup> /h |
| <b>New Equipment</b>                               |  |                  |       |                    |                   |                            |                    |
| Type Equipment                                     | <b>Solar</b>   |                  |       |                    | <b>Pump</b>       |                            |                    |
| Manufacturer/Model                                 | Solar Modules/Sunset solar/similar equal an approved   |                  |       |                    | Grundfos SQF3-105 |                            |                    |
| Item No  | Brief Description of Works   |                  |       | Unit of Measure    | Quantity          | Unit Price N\$             | Total Price N\$    |
| A*   | B*   |                  |       | C*                 | D*                | E                          | F                  |
| 1  | <b>SITE ESTABLISHMENT</b>  |                  |       |                    |                   |                            |                    |
| 1.1  | Site establishment: According to SABS 1200 AA 1986   |                  |       | Sum                | 1                 |                            | -                  |
| 1.2  | Transport of material to site plus additional transport of miscellaneous item (Transport Rate (excluding VAT)<br><u>Specify Tonnage of transporter(s):</u> |                  |       |                    |                   |                            |                    |
| 1.2.1  | Ton @  |                  |       | Km                 |                   |                            | -                  |
| 1.2.2  | Ton @  |                  |       | Km                 |                   |                            | -                  |
| 1.2.3  | Ton @  |                  |       | km                 |                   |                            | -                  |
| 1.3  | Temporary domestic water supply during construction period   |                  |       | m <sup>3</sup>     | 10                |                            | -                  |
|  | <b>SUB TOTAL</b>   |                  |       |                    |                   |                            | -                  |

|                        | SPECIFICATIONS OF WORK TO BE DONE  | SCHEDULE OF QUANTITIES |          |                |                 |
|------------------------|--|------------------------|----------|----------------|-----------------|
| Item No.               | Description  | Unit of Measure        | Quantity | Unit Price N\$ | Total Price N\$ |
| TOTAL BROUGHT FORWARD: |  | -                      |          |                |                 |
| 2                      | BOREHOLE: Supply all material and construct new borehole block complete with base plate. Base plate to be welded on the borehole steel casing. Refer to drawing number 21/1-4/34 R5, 21/1-4/73 R8.   |                        |          |                |                 |
| 2.1                    | Labour charges (exl. VAT)  |                        |          |                |                 |
| 2.1.1                  | Artisan  | hrs                    |          |                | -               |
| 2.1.2                  | Skilled Labour   | hrs                    |          |                | -               |
| 2.1.3                  | Unskilled Labour   | hrs                    |          |                | -               |
| 2.1.4                  | Concrete (concrete class 25MPa), 800mmx800mmx800mm, with 19mm aggregated stones).  | m³                     | 0.6      |                | -               |
| 2.1.5                  | Borehole base plate assembly as per drawing no. 21/1-4/73R8, mild steel 500mmx500mmx16mm   | No                     | 1        |                | -               |
| 2.1.6                  | 50mm Ø GMS discharge pipe work complete  | Sum                    | 1        |                | -               |
| 2.1.7                  | GMS union 50mmØ  | No                     | 1        |                | -               |
| 2.1.8                  | Borehole adaptor plate 300mmx300mmx16mm to suit Solar installation as per drawing no. 21/1-4/73 R8   | No                     | 1        |                | -               |
| 3                      | SOLAR: Supply all material and install a new pump, complete with submersible cables, stainless rope (for pump safety), control box, solar panels, solar panel stand and solar panels frame; to pump at least 3.5 metre cubic per hour at 100m water head (Note: The power required should be 2.5kW minimum). Submersible pump should be compatible for alternating current (AC). |                        |          |                |                 |
| 3.1                    | Labour charges (exl.VAT)   |                        |          |                |                 |
| 3.1.1                  | Artisan  | hrs                    |          |                | -               |
| 3.1.2                  | Skilled Labour   | hrs                    |          |                | -               |
| 3.1.3                  | Unskilled Labour   | hrs                    |          |                | -               |
| 3.1.4                  | Manufacture 3m high solar stand complete with base plate (200mmx200mmx8mm thick) with 200mmx16mm anchors) and solar frame (note use 5mmx100mm square tubing or 5mmx100mm round tube Mild steel, pipes for legs). Solar should slide in a welded frame for security reasons. Refer to attached drawings No. 17022-C-100   | No                     | 1        |                | -               |
| 3.1.5                  | Concrete blocks for stand (2x700mmx700mmx700mm) ,with 19mm aggregated stones, class 25MPa.   | m³                     | 0.7      |                | -               |
| 3.1.6                  | Anchor concrete blocks 200mmx200mm, with 19mm aggregated stones, class 25MPa   | m³                     | 0.35     |                | -               |
| 3.1.7                  | PUMP: SQF 3-105  | No                     | 1        |                | -               |
| 3.1.8                  | Solar panels to suit power required  | Sum                    | 1        |                | -               |
| 3.1.9                  | Control box to suit pump complete with lock-able "Protection Cover" or similar equal and approved.   | No                     | 1        |                | -               |
| 3.1.10                 | Aquavern- Submersible electrical cable 4mm² 4core, suitable for current drawn down and voltage drop. Cable should be protected against with UV resistant sleeve above ground.  | M                      | 130      |                | -               |
| 3.1.11                 | Ski rope for pump security- 10mm steel.  | M                      | 120      |                | -               |
| 3.1.12                 | 40mm, GMS pipe   | No                     | 40       |                | -               |
| 3.1.13                 | Stabilizers 40mm x 150mm   | No                     | 13       |                | -               |
| 3.1.14                 | Splicing kit/electrical termination kit, Scotch cast2.5mm² – 4mm² 4core complete   | Sum                    | 1        |                | -               |
| 3.1.15                 | Cable ties (50mmx6mm)  | sum                    | 1        |                | -               |
| 3.1.16                 | All required GMS fittings, Accessories and any other additional required items. (All inclusive)  | sum                    | 1        |                | -               |
|                        | SUB TOTAL  |                        |          |                |                 |
|                        |  | -                      |          |                |                 |

|                        | SPECIFICATIONS OF WORK TO BE DONE  | SCHEDULE OF QUANTITIES |          |                |                 |
|------------------------|--|------------------------|----------|----------------|-----------------|
| Item No.               | Description  | Unit of Measure        | Quantity | Unit Price N\$ | Total Price N\$ |
| TOTAL BROUGHT FORWARD: |  |                        |          |                |                 |
| 4                      | TANK STANDS: Supply all materials and install 2m tank stand for 10m <sup>3</sup> tank complete with concrete foundation as per drawing no. 21/1-4/65 R8. |                        |          |                |                 |
| 4.1                    | Labour charges (exl. VAT)  |                        |          |                |                 |
| 4.1.1                  | Artisan  | hrs                    |          |                | -               |
| 4.1.2                  | Skilled Labour   | hrs                    |          |                | -               |
| 4.1.3                  | Unskilled Labour   | hrs                    |          |                | -               |
| 4.1.4                  | Concrete Grade 25MPa a strength, with 19mm aggregated stones   | m³                     | 5        |                | -               |
| 4.1.5                  | 2m tank stands for 10m <sup>3</sup> tanks as per drawing no. 21/1-4/65 R8.<br>NB: use equal angle iron 60x60x6mm for the stand legs Mild steel.          | No                     | 3        |                | -               |
| 4.1.6                  | Fit data and borehole information plate (210mm x 110mm), manufactured from black anodized aluminium. Letter size to be 5mm.                              | No                     | 1        |                | -               |
| 4.1.7                  | Base Plate 200x200mmx10mm complete with u-shaped round bar welded to 16mm bolts/thread bar and nuts  | No                     | 12       |                | -               |
| 4.1.8                  | Steel painting, antirust 1 <sup>st</sup> coat, final coat aluminium industrial   | Sum                    | 1        |                | -               |
| 4.1.9                  | Re-inforcing steel   | Sum                    | 1        |                | -               |
|                        | SUB TOTAL  |                        |          |                | -               |

|                        | SPECIFICATIONS OF WORK TO BE DONE  | SCHEDULE OF QUANTITIES |          |                |                 |
|------------------------|--|------------------------|----------|----------------|-----------------|
| Item No.               | Description  | Unit of Measure        | Quantity | Unit Price N\$ | Total Price N\$ |
| TOTAL BROUGHT FORWARD: |  | -                      |          |                |                 |
| 5                      | PLASTIC TANKS: Supply all material and install 3 new 10 cubic metres plastic tanks (300kg) on tank stands complete with all pipe work, fittings, valves, tank strappings. Refer to drawing no. 21/1-4/65 R8. All underground steel pipes, fittings and other steel components shall be Denso wrapped |                        |          |                |                 |
| 5.1                    | Labour charges (excl. VAT)   |                        |          |                |                 |
| 5.1.1                  | Artisan  | hrs                    |          |                | -               |
| 5.1.2                  | Skilled Labour   | hrs                    |          |                | -               |
| 5.1.3                  | Unskilled Labour   | hrs                    |          |                | -               |
| 5.1.4                  | 300kg, 12mm thickness, 10 cubic metres tank (engraved with the emblem of water affairs), Made in Namibia   | No                     | 3        |                | -               |
| 5.1.5                  | 50mm Ø GMS Inlet pipe work complete with all fittings  | Sum                    | 1        |                | -               |
| 5.1.6                  | 50mm Ø GMS outlet pipe work complete with all fittings   | Sum                    | 1        |                | -               |
| 5.1.7                  | Overflow pipe work complete with all fittings (50mm Ø GMS)   | Sum                    | 1        |                | -               |
| 5.1.8                  | Security brackets for all pipe work  | Sum                    | 1        |                | -               |
| 5.1.9                  | 50mm Ø Cobra gate valve  | No                     | 5        |                | -               |
| 5.1.10                 | Hold down strapping for tank   | Sum                    | 1        |                | -               |
|                        | SUB TOTAL  |                        |          |                | -               |

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|------------------------|--|------------------------|----------|----------------|-----------------|
| Item No.               | Description  | Unit of Measure        | Quantity | Unit Price N\$ | Total Price N\$ |
| TOTAL BROUGHT FORWARD: |  |                        |          |                |                 |
| 6                      | PIPE LINES: Pipeline from pump to domestic tank on tank stand (5m), from domestic tank to trough (100m), from domestic tank to tap point (50m), from overflow pipe to ground (20m)- Supply all material and install 50mm class 10 HDPE 175m pipeline. Complete with all required compression type fittings and valves. |                        |          |                |                 |
| 6.1                    | Labour charges (exl. VAT)  |                        |          |                |                 |
| 6.1.1                  | Artisan  | hrs                    |          |                | -               |
| 6.1.2                  | Skilled Labour   | hrs                    |          |                | -               |
| 6.1.3                  | Unskilled Labour   | hrs                    |          |                | -               |
| 6.1.4                  | 50mm class 10 HDPE pipe  | M                      | 175      |                | -               |
| 6.1.5                  | 50mm GSM pipe  | Sum                    | 1        |                | -               |
| 6.1.6                  | All required compression type fittings   | Sum                    | 1        |                | -               |
| 6.1.7                  | All required GMS fittings  | Sum                    | 1        |                | -               |
| 6.1.8                  | Pipe work security brackets  | Sum                    | 1        |                | -               |
| 6.1.9                  | 400-500mm deep trenches  | m                      | 175      |                | -               |
| 6.1.10                 | Back-fill trenches   | m                      | 175      |                | -               |
| 7                      | STEEL TROUGH: Supply all materials and install steel trough, complete with concrete foundation and slab, all pipe work. Note troughs shall be coated as per drawing no. 21/1-4/42 R2   |                        |          |                |                 |
| 7.1                    | Labour charges (exl. VAT)  |                        |          |                |                 |
| 7.1.1                  | Artisan  | hrs                    |          |                | -               |
| 7.1.2                  | Skilled Labour   | hrs                    |          |                | -               |
| 7.1.3                  | Unskilled Labour   | hrs                    |          |                | -               |
| 7.1.4                  | Concrete Grade 25MPa a strength, with 19mm aggregated stones   | m³                     | 7.8      |                | -               |
| 7.1.5                  | Concrete Reinforcing steel 8mm y type  | sum                    | 1        |                | -               |
| 7.1.6                  | Steel trough 5m x 3mm thickness as per drawing no. 21/1-4/42   | No                     | 1        |                | -               |
| 7.1.7                  | GMS pipe work and fittings   | sum                    | 1        |                | -               |
| 8                      | DOMESTIC TAP STAND: Supply all material and install one domestic tap stand complete with GMS pipe work and two taps. Refer to drawing number 21/1-4/43R2   |                        |          |                |                 |
| 8.1                    | Labour charges (exl. VAT)  |                        |          |                |                 |
| 8.1.1                  | Artisan  | hrs                    |          |                | -               |
| 8.1.2                  | Skilled Labour   | hrs                    |          |                | -               |
| 8.1.3                  | Unskilled Labour   | hrs                    |          |                | -               |
| 8.1.4                  | 20mm brass bibcock taps  | No                     | 2        |                | -               |
| 8.1.5                  | Concrete Grade 25MPa a strength, with 19mm aggregated stones   | m³                     | 0.3      |                | -               |
| 8.1.6                  | GMS pipe work  | sum                    | 1        |                | -               |
| 8.1.7                  | 160/110mmØ UPVC pipe   | m                      | 1        |                | -               |
| 8.1.8                  | 40/20mm Ø GMS pipe   | m                      | 1        |                | -               |
| 8.1.9                  | All required GMS fittings  | Sum                    | 1        |                | -               |
| 9                      | DOMESTIC TAP PROTECTOR: Manufacture and fit tap protector at taps stand as per attached sketch.  |                        |          |                |                 |
| 9.1                    | Labour charges (exl. VAT)  |                        |          |                |                 |
| 9.1.1                  | Artisan  | hrs                    |          |                | -               |
| 9.1.2                  | Skilled Labour   | hrs                    |          |                | -               |
| 9.1.3                  | Unskilled Labour   | hrs                    |          |                | -               |
| 9.1.4                  | Angel iron 50mmx50mmx4mm   | M                      | 6        |                | -               |
| 9.1.5                  | Steel painting, antirust 1 <sup>st</sup> coat, final coat aluminium industrial paint   | L                      | 2        |                | -               |
|                        | SUB TOTAL  |                        |          |                | -               |

|                        | SPECIFICATIONS OF WORK TO BE DONE   | SCHEDULE OF QUANTITIES |                |                |                 |
|------------------------|---|------------------------|----------------|----------------|-----------------|
| Item No.               | Description   | Unit of Measure        | Quantity       | Unit Price N\$ | Total Price N\$ |
| TOTAL BROUGHT FORWARD: |   |                        |                |                |                 |
| 10                     | TOOL KIT: Supply tool kit for Solar Water Point Maintenance / Repair. Note, toolkit to be delivered at the Regional Office. |                        |                |                |                 |
| 10.1                   | Spade, carbon steel   | No                     | 1              |                | -               |
| 10.2                   | Adjustable Wrench pipe 0mm approx...60mm ( Monkey Wrench)   | No                     | 1              |                | -               |
| 10.3                   | Steel Rake, heavy duty  | No                     | 1              |                | -               |
| 10.4                   | Squeegee (for cleaning panels)  | No                     | 1              |                | -               |
| 10.5                   | Wire plier  | No                     | 1              |                | -               |
|                        |   |                        | Subtotal       |                | -               |
|                        |   |                        | Contingency 5% |                | -               |
|                        |   |                        | VAT @ 15 %     |                | -               |
|                        |   |                        | Grand Total    |                | -               |