



# Annexure A

## Bill of Quantities

## Section summary

[illegible]

| Item No. | Payment Clause | Description                                                                                                                                                                         | Unit   | Qty  | Rates | Amount |
|----------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|------|-------|--------|
|          | SANS 1200      | <b><u>Section 1: Preliminaries and General</u></b>                                                                                                                                  |        |      |       |        |
| 1.10     |                | <b>Fixed charge and value related items</b>                                                                                                                                         |        |      |       |        |
|          |                | <u>Contractual requirements:</u>                                                                                                                                                    |        |      |       |        |
| 1.1.1    | A 8.3.1        | Contractual requirements.                                                                                                                                                           | Sum    | 1.00 |       |        |
|          |                | <u>Establishment of facilities for engineer:</u>                                                                                                                                    |        |      |       |        |
| 1.1.2    |                | (a) Furnished offices                                                                                                                                                               | Sum    | 1.00 |       |        |
| 1.1.3    |                | (c) Nameboards.                                                                                                                                                                     | Sum    | 1.00 |       |        |
|          |                | <u>Establishment of facilities for contractor:</u>                                                                                                                                  |        |      |       |        |
| 1.1.4    |                | (a) Offices and storage sheds.                                                                                                                                                      | Sum    | 1.00 |       |        |
| 1.1.5    |                | (c) Laboratories.                                                                                                                                                                   | Sum    | 1.00 |       |        |
| 1.1.7    |                | (d) Living accommodation.                                                                                                                                                           | Sum    | 1.00 |       |        |
| 1.1.8    |                | (e) Ablution and latrine facilities.                                                                                                                                                | Sum    | 1.00 |       |        |
| 1.1.9    |                | (f) Tools and equipment.                                                                                                                                                            | Sum    | 1.00 |       |        |
| 1.1.10   |                | (g) Water supplies, electric power and communications.                                                                                                                              | Sum    | 1.00 |       |        |
| 1.1.11   |                | (h) Dealing with water. The Contractor shall properly deal with and dispose of all water to ensure that the Works are at all times kept sufficiently dry for their proper execution | Sum    | 1.00 |       |        |
| 1.1.12   |                | (i) Access.                                                                                                                                                                         | Sum    | 1.00 |       |        |
| 1.1.13   |                | (j) Plant.                                                                                                                                                                          | Sum    | 1.00 |       |        |
|          |                | <u>Other Fixed-charge Obligations:</u>                                                                                                                                              |        |      |       |        |
| 1.1.14   | A 8.3.3        | Survey, setting out and preparation of as-built drawings.                                                                                                                           | Sum    | 1.00 |       |        |
| 1.1.15   |                | Soil testing equipment.                                                                                                                                                             | Sum    | 1.00 |       |        |
| 1.1.16   |                | Environmental management.                                                                                                                                                           | Sum    | 1.00 |       |        |
| 1.1.17   |                | Occupational Health and Safety.                                                                                                                                                     | Sum    | 1.00 |       |        |
|          |                | <u>Removal of site establishment:</u>                                                                                                                                               |        |      |       |        |
| 1.1.18   | A 8.3.4        | Removal of site establishment and rehabilitation of site camp.                                                                                                                      | Sum    | 1.00 |       |        |
| 1.20     |                | <b><u>Time related items</u></b>                                                                                                                                                    |        |      |       |        |
|          |                | <u>Contractual requirements:</u>                                                                                                                                                    |        |      |       |        |
| 1.2.1    | A 8.4.1        | Contractual requirements.                                                                                                                                                           | Months | 7    |       |        |
|          |                | <u>Establishment of facilities for engineer:</u>                                                                                                                                    |        |      |       |        |
| 1.2.2    | A 8.4.2.1      | (a) Furnished offices.                                                                                                                                                              | Months | 7    |       |        |
| 1.2.3    | A 8.4.2.1      | (c) Nameboards.                                                                                                                                                                     | Months | 7    |       |        |
| 1.2.4    | A 8.4.2.1      | (d) Survey assistants and materials.                                                                                                                                                | Months | 7    |       |        |
|          |                |                                                                                                                                                                                     |        |      |       |        |
|          |                | <b>Total carried forward to collections</b>                                                                                                                                         |        |      |       |        |

| Item No. | Payment Clause | Description                                                                                                                                                                         | Unit   | Qty | Rates  | Amount     |
|----------|----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|-----|--------|------------|
|          | SANS 1200      | <b>Section 1: Preliminaries and General</b>                                                                                                                                         |        |     |        |            |
|          |                | <u>Establishment of Facilities for contractor:</u>                                                                                                                                  |        |     |        |            |
| 1.2.5    | A 8.4.2.2      | (a) Offices and storage sheds.                                                                                                                                                      | Months | 7   |        |            |
| 1.2.6    | A 8.4.2.2      | (c) Laboratories.                                                                                                                                                                   | Months | 7   |        |            |
| 1.2.7    | A 8.4.2.2      | (d) Living accommodation.                                                                                                                                                           | Months | 7   |        |            |
| 1.2.8    | A 8.4.2.2      | (e) Ablution and latrine facilities.                                                                                                                                                | Months | 7   |        |            |
| 1.2.9    | A 8.4.2.2      | (f) Tools and equipment.                                                                                                                                                            | Months | 7   |        |            |
| 1.2.10   | A 8.4.2.2      | (g) Water supplies, electric power and communications.                                                                                                                              | Months | 7   |        |            |
| 1.2.11   | A 8.4.2.2      | (h) Dealing with water. The Contractor shall properly deal with and dispose of all water to ensure that the Works are at all times kept sufficiently dry for their proper execution | Months | 7   |        |            |
| 1.2.12   | A 8.4.2.2      | (i) Access.                                                                                                                                                                         | Months | 7   |        |            |
| 1.2.13   | A 8.4.2.2      | (j) Plant.                                                                                                                                                                          | Months | 7   |        |            |
|          |                | <u>Supervision:</u>                                                                                                                                                                 |        |     |        |            |
| 1.2.14   | A 8.4.3        | Supervision for the duration of Construction.                                                                                                                                       | Months | 7   |        |            |
|          |                | <u>Company and Head office Overhead Cost:</u>                                                                                                                                       |        |     |        |            |
| 1.2.15   | A 8.4.4        | Company and Head Office Overhead Cost for the duration for the contract.                                                                                                            | Months | 7   |        |            |
|          |                | <u>Other time related obligations:</u>                                                                                                                                              |        |     |        |            |
| 1.2.16   | A 8.4.5        | Survey, setting out and preparation of as-built drawings.                                                                                                                           | Months | 7   |        |            |
| 1.2.17   | A 8.4.5        | Soil testing equipment.                                                                                                                                                             | Months | 7   |        |            |
| 1.2.18   | A 8.4.5        | Environmental management.                                                                                                                                                           | Months | 7   |        |            |
| 1.2.19   | A 8.4.5        | Occupational Health and Safety.                                                                                                                                                     | Months | 7   |        |            |
| 1.30     |                | <b>Temporary works</b>                                                                                                                                                              |        |     |        |            |
| 1.3.1    |                | <b>Existing services</b>                                                                                                                                                            |        |     |        |            |
|          |                | <b>Hand excavation of existing</b>                                                                                                                                                  |        |     |        |            |
| 1.3.1.1  |                | a) Supply or hire of specialist equipment for the detection of existing services.                                                                                                   | item   | 1   |        |            |
| 1.3.1.2  |                | b) The use of equipment referred to in item (a) above.                                                                                                                              | item   | 1   |        |            |
| 1.3.1.3  |                | c) Excavation by hand in soft material to expose existing services                                                                                                                  | m3     | 100 |        |            |
| 1.3.1.4  |                | d) Allow for temporary protection, as required in terms of the project specification of existing services                                                                           | item   | 1   |        |            |
| 1.4.     |                | <b>Enterprise Development (CIDB B.U.I.L.D PROGRAM)</b>                                                                                                                              |        |     |        |            |
|          |                | Indirect targeting for Enterprise Development through Construction gazettes notice No 35190 of 25 February 2013                                                                     |        |     |        |            |
| 1.4.1    |                | (a) Enterprise Development of Targeted Enterprise or JV Partners.                                                                                                                   |        |     |        |            |
| 1.4.2    |                | (a.1) Needs Analysis and Enterprise Development Plan per targeted Enterprise                                                                                                        | item   | 1   | 5 000  | R5 000.00  |
| 1.4.3    |                | (a.2) Monitoring and Interim Reporting per Targeted Enterprise                                                                                                                      | Per Qu | 4   | 20 000 | R80 000.00 |
| 1.4.4    |                | (a.3) Project Completion Report per Targeted Enterprise                                                                                                                             | item   | 1   | 5 000  | R5 000.00  |
|          |                | <b>Total carried forward to collections</b>                                                                                                                                         |        |     |        |            |

| Item No. | Payment Clause | Description                                    | Unit | Qty | Rates | Amount |
|----------|----------------|------------------------------------------------|------|-----|-------|--------|
|          |                | <b>Collections</b><br><br>Page 1<br><br>Page 2 |      |     |       |        |
|          |                | Ttoal carried to section summary               |      |     |       |        |

| item No | Pay Clause | Description                                                                                                                                                                                               | Unit  | Qty    | Rates | Amount |
|---------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|-------|--------|
| 2.0     |            | <b><u>Demolishing</u></b>                                                                                                                                                                                 |       |        |       |        |
| 2.10    |            | <b><u>Demolitions in Existing Structures</u></b>                                                                                                                                                          |       |        |       |        |
| 2.1.1   |            | Removal of existing old rusted ladders inclusive of all accessories and make good the quay (closing the holes), and dispose all to a site that will be allocated by the employer within the port precinct | No    | 3      |       |        |
| 2.1.2   |            | Demolish 300mm thick reinforced concrete ring structure, 300mm deep to accommodate new concrete slab and dispose to the nearest disposal site.                                                            | m     | 61     |       |        |
| 2.1.3   |            | Demolish 150mm unreinforced apron next to ice building, dispose to the nearest disposal site.                                                                                                             | m2    | 10     |       |        |
| 2.1.4   |            | Carefully, take down and properly store for re-use the 2.5m high steel palisade fencing inclusive of posts and fixtures                                                                                   | m     | 30     |       |        |
| 2.1.5   |            | Cutting and removal of fender bracket beams (203 x 203 x 46kg/m I-sections) at the new sections, dispose to the nearest disposal site. Installation of new beams measured elsewhere.                      | no    | 7      |       |        |
| 2.1.6   |            | Cutting and removal of C steel Channel (150 x 75 x 12mm ) at the new sections, dispose to the nearest disposal site. Installation of new channels measured elsewhere.                                     | no    | 52     |       |        |
| 2.20    |            | <b><u>Bulk Excavation</u></b>                                                                                                                                                                             |       |        |       |        |
| 2.2.1   |            | Bulk excavations for trenches and holes in manganese material not exceeding 2m deep. Excavated material to be placed into skip bins prior transportation to the treatment facility                        | m3    | 382    |       |        |
| 2.2.2   |            | Bulk excavations for trenches and holes in manganese material exceeding 2m not exceeding 4m deep. Excavated material to be placed into skip bins prior to transportation to the treatment facility        | m3    | 382    |       |        |
| 2.2.3   |            | Excavate fill material not exceeding 2m deep, cart away excavated material to a dumping site                                                                                                              | m3    | 269    |       |        |
| 2.3     |            | <b><u>Transportation and Treatment of manganese</u></b>                                                                                                                                                   |       |        |       |        |
| 2.3.1   |            | Transportation of the manganese material to the treatment facility within 50km radius. Contractor to provide proof of location treatment plant                                                            | m3.km | 38,200 |       |        |
| 2.3.2   |            | Treatment and disposal of manganese material to an approved dumping site                                                                                                                                  | ton   | 1,140  |       |        |
| 2.5     |            | <b><u>Storm water drainage</u></b>                                                                                                                                                                        |       |        |       |        |
| 2.5.1   |            | Removal of G7 material from the stormwater channel, material to be re-used for backfilling                                                                                                                | m3    | 30     |       |        |
|         |            | <b>Total carried forward to Collections</b>                                                                                                                                                               |       |        |       |        |

| item No | Pay<br>Clause | Description                              | Unit | Qty | Rates | Amount |
|---------|---------------|------------------------------------------|------|-----|-------|--------|
|         |               | <div>Collections</div> <div>Page 1</div> |      |     |       |        |
|         |               | Total carried forward to section summary |      |     |       |        |

| item No | Pay Clause | Description                                                                                                                                                                                                                                                                    | Unit | Qty | Rates | Amount |
|---------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----|-------|--------|
| 3.0     |            | <b><u>New Deck Constructions Including Quay Furniture</u></b>                                                                                                                                                                                                                  |      |     |       |        |
|         |            | <b><u>Preambles</u></b>                                                                                                                                                                                                                                                        |      |     |       |        |
|         |            | <i>In this section the main contractor will be required to provide scaffolding to sides of retaining walls where required. Rate to include provision of structural certificate for scaffolding, erection and dismantling of scaffolding and hire and maintain scaffolding.</i> |      |     |       |        |
| 3.1     |            | <b><u>Concrete- 50Mpa</u></b>                                                                                                                                                                                                                                                  |      |     |       |        |
|         |            | <b>a) Deck</b>                                                                                                                                                                                                                                                                 |      |     |       |        |
| 3.1.1   |            | 50Mpa Reinforced Concrete (300mm thick slab), casted in panels, and to allow for fast curing anchoring adhesive, as required by construction regulations, etc.                                                                                                                 | m3   | 180 |       |        |
| 3.1.2   |            | Wood floating finish                                                                                                                                                                                                                                                           | m2   | 702 |       |        |
| 3.2     |            | <b>Test Cubes</b>                                                                                                                                                                                                                                                              |      |     |       |        |
| 3.2.1   |            | Making and testing 150 x 150 x 150mm concrete strength test cubes, 3 cubes per load                                                                                                                                                                                            | no   | 60  |       |        |
| 3.3     |            | <b>Backfilling</b>                                                                                                                                                                                                                                                             |      |     |       |        |
| 3.3.1   |            | Backfilling material into trenches and holes, by G7 material in 250mm layers thick, each layer to be compacted to 90% MOD AASHTO                                                                                                                                               | m3   | 527 |       |        |
| 3.3.2   |            | Supply dump rock for backfilling tidal zone up to level of HAT to receive Bidim and G7 material                                                                                                                                                                                | m3   | 237 |       |        |
| 3.3.3   |            | Supply and place bidim                                                                                                                                                                                                                                                         | m2   | 254 |       |        |
| 3.4     |            | <b><u>Layer works</u></b>                                                                                                                                                                                                                                                      |      |     |       |        |
| 3.4.1   |            | 150mm thick G2 base-graded crushed stone compacted to 98% MOD AASHTO                                                                                                                                                                                                           | m3   | 105 |       |        |
| 3.4.2   |            | 150mm thick G7 subbase compacted to 95% MOD AASHTO                                                                                                                                                                                                                             | m3   | 105 |       |        |
| 3.4.3   |            | 150mm thick RIP & Recompect in-situ material 93% MOD AASHTO                                                                                                                                                                                                                    | m2   | 702 |       |        |
| 3.5     |            | <b><u>Isolation joint</u></b>                                                                                                                                                                                                                                                  |      |     |       |        |
| 3.5.1   |            | Rake cutting 300mm thick concrete slab                                                                                                                                                                                                                                         | m    | 95  |       |        |
| 3.5.2   |            | Supply and application of one-part, polyurethane-based, multi-purpose elastic adhesive and joint sealant.                                                                                                                                                                      | m    | 95  |       |        |
|         |            | <b>Total carried to collections</b>                                                                                                                                                                                                                                            |      |     |       |        |

| item No | Pay Clause | Description                                                                                               | Unit | Qty | Rates | Amount |
|---------|------------|-----------------------------------------------------------------------------------------------------------|------|-----|-------|--------|
| 3.6     |            | <b><u>Saw cut joint</u></b>                                                                               |      |     |       |        |
| 3.6.1   |            | Saw cutting 300mm thick concrete                                                                          | m    | 120 |       |        |
| 3.6.2   |            | Joggle joint in 300mm thick concrete                                                                      | m    | 120 |       |        |
| 3.6.3   |            | Supply and application of one-part, polyurethane-based, multi-purpose elastic adhesive and joint sealant. | m    | 120 |       |        |
| 3.6.4   |            | 250micron uPVC (DPM) sheeting (including overlapping's, joints, turned-ups, etc.)                         | m2   | 702 |       |        |
| 3.7     |            | <b><u>Reinforcement mesh</u></b>                                                                          |      |     |       |        |
| 3.7.1   |            | Wire mesh ref. 395                                                                                        | m2   | 702 |       |        |
| 3.7.2   |            | Wire mesh ref. 617                                                                                        | m2   | 702 |       |        |
| 3.8     |            | <b><u>Palisade fencing</u></b>                                                                            |      |     |       |        |
| 3.8.1   |            | Install 2.5m high steel palisade fencing inclusive of posts and fixtures                                  | m    | 30  |       |        |
|         |            | <b>Total carried to collections</b>                                                                       |      |     |       |        |

| item No | Pay<br>Clause | Description                                             | Unit | Qty | Rates | Amount |
|---------|---------------|---------------------------------------------------------|------|-----|-------|--------|
|         |               | <div>Collects</div> <div>Page 4</div> <div>Page 5</div> |      |     |       |        |
|         |               | Total carried to summary                                |      |     |       |        |

| item No | Pay Clause   | Description                                                                                                                                                                                 | Unit | Qty | Rates | Amount |
|---------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----|-------|--------|
| 4.0     | SANS 1200 LE | <b><u>Stormwater and Drainage</u></b>                                                                                                                                                       |      |     |       |        |
| 4.1     |              | <b>Holding tank</b>                                                                                                                                                                         |      |     |       |        |
| 4.1.1   |              | Install 9500lt septic conservancy tank including all required accessories as per manufacturing specification                                                                                | no   | 1   |       |        |
| 4.2     |              | <b>Pipe work</b>                                                                                                                                                                            |      |     |       |        |
| 4.2.1   |              | Excavate in trenches for storm water PVC 0 - 1.5m deep, use excavated material for backfilling if material is suitable for backfilling and dispose all access material to the disposal site | m3   | 5   |       |        |
| 4.2.2   |              | Imported sand material for Under- and over bedding of the PVC storm water pipes                                                                                                             | m3   | 2   |       |        |
| 4.2.3   |              | Supply and install 250mm uPVC Pipe                                                                                                                                                          | m    | 14  |       |        |
| 4.2.4   |              | Supply and lay 315mm Dia uPVC pipes                                                                                                                                                         | m    | 5   |       |        |
| 4.2.5   |              | G7 for backfilling supplied by the Contractor compacted to 93% Mod. AASHTO density backfilling to trenches                                                                                  | m3   | 14  |       |        |
| 4.3     |              | <b>Core Drill</b>                                                                                                                                                                           |      |     |       |        |
| 4.3.1   |              | Drill 250mm diameter hole through reinforced concrete exceeding 200mm and not exceeding 300mm thick.                                                                                        | no   | 2   |       |        |
| 4.4     |              | <b>Concrete Grid Covers</b>                                                                                                                                                                 |      |     |       |        |
| 4.4.1   |              | Supply and install 650mm x 90mm wide heavy duty concrete grid covers as per the specification.                                                                                              | m    | 201 |       |        |
| 4.4.2   |              | Raising existing manholes (Provision)                                                                                                                                                       | no   | 1   |       |        |
| 4.4.3   |              | Lowering of Existing manholes (Provision)                                                                                                                                                   | no   | 1   |       |        |
| 4.5     |              | <b>Bollards</b>                                                                                                                                                                             |      |     |       |        |
| 4.4.1   |              | Supply and install new traffic spheroidal graphite bollards incl. all anchors, bolts, nuts, etc.                                                                                            | No.  | 6   |       |        |
| 4.5     |              | <b>Manhole Type SD2</b>                                                                                                                                                                     |      |     |       |        |
| 4.5.1   |              | Excavate trench for newly constructed drain and dispose at municipal dump site                                                                                                              | m3   | 17  |       |        |
| 4.5.2   |              | Cast 25 Mpa/19mm concrete blinding against excavated faces to receive concrete base                                                                                                         | m3   | 1   |       |        |
| 4.5.3   |              | 50Mpa Reinforced Concrete base, casted on blinding and to allow for fast curing anchoring adhesive, as required by construction regulations, etc.                                           | m3   | 1   |       |        |
| 4.5.4   |              | Build Side Walls 345mm thickness                                                                                                                                                            | m²   | 7   |       |        |
| 4.5.5   |              | Cast concrete manhole top                                                                                                                                                                   | No.  | 1   |       |        |
| 4.5.6   |              | Supply and fit manhole lid with frame.                                                                                                                                                      | No.  | 1   |       |        |
| 4.5.7   |              | Supply G7 for backfilling around man-hole compacted to 93% Mod. AASHTO density backfilling to trenches                                                                                      | m3   | 3   |       |        |
|         |              | <b>Total carried to collections</b>                                                                                                                                                         |      |     |       |        |

| item No | Pay Clause | Description                                | Unit | Qty | Rates | Amount |
|---------|------------|--------------------------------------------|------|-----|-------|--------|
| 4.6     |            | Ancillaries                                |      |     |       |        |
| 4.6.1   |            | Connection into existing inlet - new jetty | Sum  | 1   |       |        |
|         |            | Total carried to collections               |      |     |       |        |

| item No | Pay<br>Clause | Description                                | Unit | Qty | Rates | Amount |
|---------|---------------|--------------------------------------------|------|-----|-------|--------|
|         |               | <b>Collections</b><br><br>Page 6<br>Page 7 |      |     |       |        |
|         |               | <b>Total carried to summary</b>            |      |     |       |        |

| item No | Pay Clause | Description                                                                                                                                                                                                                                                                          | Unit | Qty | Rates | Amount |
|---------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----|-------|--------|
| 5.0     |            | <b><u>Tyre fenders and Stainless steel Ladder</u></b>                                                                                                                                                                                                                                |      |     |       |        |
| 5.1     |            | <b><u>Fenders</u></b>                                                                                                                                                                                                                                                                |      |     |       |        |
| 5.1.1   |            | Supply and deliver 10mm stainless steel plate round edges.                                                                                                                                                                                                                           | no   | 58  |       |        |
| 5.1.2   |            | Supply and deliver M24 x 200mm long stainless steel bolt and washer                                                                                                                                                                                                                  | no   | 312 |       |        |
| 5.1.3   |            | Manufacture supply and install 203 x 203 x 46kg/m galvanized I sections steel beams in accordance to the works informations                                                                                                                                                          | ton  | 2   |       |        |
| 5.1.4   |            | Manufacture supply and install 150mm x 150mm x 12mm at 3.5m lengths, galvanized channels in accordance to the works informations                                                                                                                                                     | no   | 52  |       |        |
| 5.1.5   |            | Installation of fender brackets                                                                                                                                                                                                                                                      | no   | 98  |       |        |
| 5.1.6   |            | Manufacture, supply and deliver straddle carrier tyer steel fixing for the new quay fenders (refer to the drawing)                                                                                                                                                                   | no   | 49  |       |        |
| 5.1.7   |            | Installation of the straddle carriers fixed on to quay beams                                                                                                                                                                                                                         | no   | 49  |       |        |
| 5.1.8   |            | Install Tyre fenders                                                                                                                                                                                                                                                                 | no   | 78  |       |        |
| 5.2     |            | <b><u>Ladder</u></b>                                                                                                                                                                                                                                                                 |      |     |       |        |
| 5.2.1   |            | Installation of 25mm X 1000mm long 316L Stainless steel solid rod double bent, to accommodate maximum depth of 10m depth and installed in the concrete quay wall in accordance of manufacture's specification. For all other items see attached drawing no.: 2138436-1-000-M-LA-0006 | no   | 3   |       |        |
| 5.2.2   |            | Manufacture and Supply access ladder from top of surface to above sea water level.                                                                                                                                                                                                   | no   | 7   |       |        |
| 5.2.3   |            | Installation of the access ladders fixed to the quay including anchor plugs                                                                                                                                                                                                          | no   | 7   |       |        |
|         |            | <b>Total carried to summary</b>                                                                                                                                                                                                                                                      |      |     |       |        |

| item No | Pay Clause | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Unit | Qty   | Rates | Amount |
|---------|------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-------|-------|--------|
| 6.0     |            | <p><b><u>Excavating and levelling the existing bedding works</u></b></p> <p><b><u>Excavating and levelling to fill &amp; spoil</u></b></p> <p><i>Preambles:-</i><br/> <i>The contractor shall be responsible for excavating and levelling the existing bedding works in and around the Dom Pedro quay area to allow for effective work to be performed on the underwater infrastructure with recommended equipment's.</i></p> <p><i>Notes:- Maximum depth of 13m deep from water level</i></p> |      |       |       |        |
| 6.1.1   |            | Mobilization of levelling and excavation equipment for the duration of project and demobilizing. (contractor to specify type and number) (Long reach excavator).                                                                                                                                                                                                                                                                                                                               | sum  | 1     |       |        |
| 6.1.2   |            | Excavating and levelling the existing bedding works and profile material from seabed (sediments, soils, clays, silt soil materials, rock, sand, debris, anomalies, etc.)                                                                                                                                                                                                                                                                                                                       | m2   | 700   |       |        |
| 6.1.3   |            | Extra over item 3.1.2 for excavating and levelling in rock in all materials, etc. (including debris, anomalies, pebbles, sediments, soils, clays, silt, rock, sand, loose concrete, fender tires, etc.)                                                                                                                                                                                                                                                                                        | m3   | 700   |       |        |
| 6.2     |            | <b><u>Multi beam bathymetric survey must be perform in the area where the scour protection is required.</u></b>                                                                                                                                                                                                                                                                                                                                                                                |      |       |       |        |
| 6.2.1   |            | Establishment for bathymetric survey                                                                                                                                                                                                                                                                                                                                                                                                                                                           | No   | 2     |       |        |
| 6.2.2   |            | Multi beam survey (in-survey)                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | m2   | 1,200 |       |        |
| 6.2.3   |            | Multi beam survey (out-survey)                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | m2   | 1,200 |       |        |
|         |            | <b>Total carried to summary</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      |       |       |        |

| item No | Pay Clause | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Unit | Qty | Rates | Amount |
|---------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----|-------|--------|
| 9.0     |            | <b><u>ELECTRICAL INSTALLATION</u></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |      |     |       |        |
| 9.1     |            | <b><u>MODIFICATION OF THE EXISTING ELECTRICAL LV KIOSK</u></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |     |       |        |
| 9.1.1   |            | Detect and investigate the condition and size of the existing low voltage electrical cable that supply the existing low voltage kiosk next to the old Dom Pedro Quay. Should the cable found not suitable to supply the existing low voltage kiosk with additional loads, the contractor shall replace the exiting low voltage cable with the suitable low voltage cable including the modification (supply and installation of suitable MCB) of the existing low voltage distribution board inside the existing TNPA substation. | sum  | 1   |       |        |
| 9.1.2   |            | Disconnect, remove and transportation the existing 60A MCB, shore power plugs and associated LV cables at the old Dom Pedro Quay and issue the removed items to the TNPA maintenance manager                                                                                                                                                                                                                                                                                                                                      | sum  | 1   |       |        |
| 9.1.3   |            | Supply, deliver and install equal or similar approved to ABB T2N, 100A, PR222, MCCB with new tales termination to the existing Busbar as shown on the drawing no.: as per specification TPD- 002-DBSPEC and Drawing Number: XDN.E.0018-003-E-SL-0005-01-0A                                                                                                                                                                                                                                                                        | no   | 4   |       |        |
| 9.2     |            | <b><u>REMOVAL OF THE EXISTING PEDESTAL AT CROSS QUAY</u></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |      |     |       |        |
| 9.2.1   |            | Disconnect, remove and transportation the existing pedestals at Dom Pedro Cross Quay.                                                                                                                                                                                                                                                                                                                                                                                                                                             | sum  | 1   |       |        |
| 9.2.2   |            | Disconnect and remove the existing LV cables that supply the two shore plugs including the 100A MCB at Cross quay for later re-installation.                                                                                                                                                                                                                                                                                                                                                                                      | sum  | 1   |       |        |
| 9.3     |            | <b><u>WIREWAYS</u></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |      |     |       |        |
| 9.3.1   |            | Supply, delivery and installation of 110mm PVC sleeves, including slow radius bends from electrical chamber                                                                                                                                                                                                                                                                                                                                                                                                                       | m    | 700 |       |        |
|         |            | <b>Total carried to collections</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |      |     |       |        |

| item No | Pay Clause | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Unit | Qty | Rates | Amount |
|---------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----|-------|--------|
| 9.4     |            | <b><u>ELECTRICAL SHORE PLUG POINTS</u></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      |     |       |        |
| 9.4.1   |            | Design, supply and installation of 3RC12 stainless steel shore power pedestal electrical distribution kiosks with base plates and mounting accessories to securely mount plug points and all switchgear. The shore power pedestal distribution kiosks shall be incorporated with switchgear, 63A 5-pin three phase, 3-pin single phase, 230V-400V, IP67 Industrial Socket Outlet incorporated with earth leakage unit, complete with Thermoplastic MIL enclosure. The electrical shore power kiosks shall be fitted with smart energy meters compatible to AMR, with all necessary comms required for metering purposes Installation shall be as per drawing no:XPE0017-1-000-E-LA-0003-01-01 | no   | 2   |       |        |
| 9.4.2   |            | Design, supply and installation of 3RC12 stainless steel shore power pedestal electrical distribution kiosks with base plates and mounting accessories to securely mount plug points and all switchgear. The shore power pedestal distribution kiosks shall be incorporated with switchgear, 125A, 3P + Earth, IP67, 6h/318/415 Industrial Socket Outlet incorporated with earth leakage unit, 3-pin single phase, complete with Thermoplastic MIL enclosure. The electrical shore power kiosks shall be fitted with smart energy meters compatible to AMR, with all necessary comms required for metering purposes. Installation shall be as per drawing no:XPE0017-1-000-E-LA-0003-01-01    | no   | 2   |       |        |
| 9.5     |            | <b><u>MIDIUM MAST LIGHTING (10m)</u></b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |      |     |       |        |
| 9.5.1   |            | Supply, deliver and erect equal or similar approved to 10m beka pole scissor mast (HDG). as per drawing no:XPE0017-1-000-E-LA-0002-01-00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | no   | 3   |       |        |
| 9.5.2   |            | Supply, deliver and erect 10m scissor mast foundation bases with specifications as according to pole manufacturers details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | no   | 3   |       |        |
| 9.5.3   |            | Supply, deliver and install similar or equal approved to Beka LED flood MAXI 279W LED fitting as per drawing no:XPE0017-1-000-E-LA-0002-01-00                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | no   | 9   |       |        |
|         |            | <b>Total carried to collections</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |      |     |       |        |

| item No | Pay Clause | Description                                                                                                                                                                                        | Unit | Qty | Rates | Amount |
|---------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----|-------|--------|
| 9.6     |            | <b><u>CABLES</u></b>                                                                                                                                                                               |      |     |       |        |
| 9.6.1   |            | Supply, delivery and install 4-core, 50mm <sup>2</sup> , SWA, ECC, copper cable with PVC insulation                                                                                                | m    | 400 |       |        |
| 9.6.2   |            | Supply, delivery and install 2-core, 4mm <sup>2</sup> , SWA, ECC, copper cable with PVC insulation                                                                                                 | m    | 300 |       |        |
| 9.6.3   |            | Supply, delivery and install 4-core, 70mm <sup>2</sup> , SWA, ECC, copper cable with PVC insulation                                                                                                | m    | 700 |       |        |
| 9.6.4   |            | Cable termination of 70mm <sup>2</sup> , 4 core, ECC, Cu, PVC insulated, steel wire armored and PVC sheeted cable                                                                                  | no   | 4   |       |        |
| 9.6.5   |            | Cable termination of 50mm <sup>2</sup> , 4 core, ECC, Cu, PVC insulated, steel wire armored and PVC sheeted cable                                                                                  | no   | 4   |       |        |
| 9.6.6   |            | Cable termination of 4mm <sup>2</sup> , 2-core, ECC, Cu, PVC insulated, steel wire armored and PVC sheeted cable                                                                                   | no   | 6   |       |        |
| 9.7     |            | <b><u>MISCELLANEOUS ITEMS</u></b>                                                                                                                                                                  |      |     |       |        |
| 9.7.1   |            | Allowance for termination & junction boxes, adaptors, reducers and accessories                                                                                                                     | sum  | 1   |       |        |
| 9.8     |            | <b><u>EARTHING AND LIGHTING PROTECTION</u></b>                                                                                                                                                     |      |     |       |        |
| 9.8.1   |            | Design, supply, deliver, offload and install a suitable earthing system to electrical shore power kiosks as shown in drawing number: XPE0017-1-000-E-LA-0003-01                                    | sum  | 1   |       |        |
| 9.8.2   |            | Design, supply and installation of Earthing and Lightning protection for Scissor mast to SANS 10313, as per drawing No: XPE0017-1-000-E-LA-0002-01 and Transnet Specification TPD-004-EARTHINGSPEC | sum  | 1   |       |        |
| 9.9     |            | <b><u>TESTING AND COMMISSIONING</u></b>                                                                                                                                                            |      |     |       |        |
| 9.9.1   |            | Testing and commissioning of complete installation in accordance to SANS 10142-1 including the issuing of certificate of compliance                                                                | sum  | 1   |       |        |
| 9.10    |            | <b><u>GENERAL</u></b>                                                                                                                                                                              |      |     |       |        |
| 9.10.1  |            | Allow a provisional sum of R390 000.00 for Sundry electrical work not covered above, to be used as directed by the Engineer and be deducted wholly or in part as required                          | sum  | 1   |       |        |
|         |            | <b>Total carried to collections</b>                                                                                                                                                                |      |     |       |        |

| item No | Pay Clause | Description                                   | Unit | Qty | Rates | Amount |
|---------|------------|-----------------------------------------------|------|-----|-------|--------|
|         |            | Collects<br><br>Page 11<br>Page 12<br>Page 13 |      |     |       |        |
|         |            | Total carried to summary                      |      |     |       |        |