Construction of Ground Mounted Solar Frame with RCC Supports FOR MP 274 PAF BASE (HQ-III)

1. General Requirements

Construction of CPS Solar frame and supporting foundations for mounting of 06 Nos. 585W Solar Modules in Horizontal configuration. The frame shall be designed on Round Pipes with base plate for bolting and fixing with RCC Foundations, Garder H-Girders for cross member support and mounting of solar modules on nuts & bolts. The structure would include angle iron cross support for strong structure and reducing bending over time. Cabling and routing to CPS with trenching completed in all aspects.

ABBAS NAJAMUDDIN
Assistant Engineer
Corrosion Control
Sui Southern Gas Company Limited

MUHAMMAD OSAMA
Asset Integrity Engineer
Corrosion Control
Sui Southern Gas Company Ltd.

SCOPE OF WORK

GROUND MOUNTED SOLAR FRAME WITH RCC SUPPORTS FOR MP 274 PAF BASE (HQ-III)

1. Foundation

1.1. Excavation

Excavation of all kinds of Soil/floor including rock/hard soil for 04 Nos. column foundations of about 3 Ft. x 3 Ft. below ground up to the required depth of 2 Ft, also backfilled the excavated pits with same excavated earth fill material of particle size not exceeding 100 mm. The item includes all dewatering, shoring & disposing off all material outside the sites of work to an appropriate location municipal dump as directed by the site engineer.

1.2. Lean Concrete 1:4:8

Providing all material for mixing, placing, form work and its removal compacting and during 4" lean concrete 1:4:8 (1-part cement, 4 parts fine clean sand and 8 parts stone blast up to 2' and down) using S.R. Cement, complying with ASTM C 150 (Type V) or BS 4027, in foundations, water add to consolidated and compacted with mechanical means complete as per drawing and as directed by the Engineer In-charge.

1.3. RCC 1:2:4

Providing all material for mixing, placing, form work and its removal compacting Reinforced cement concrete 1:2:4 in foundation, using SR cement as per drawing attached. Where specified or ordered sulphate resisting cement (SRC) complying with ASTM C 150 (Type V) or BS 4027, shall be used in place of OPC in the superstructure as well.

The shape of the coarse aggregates shall generally be spherical or cubical. The quantity of flat and elongated particles, in the separated size groups of coarse aggregate, as defined and determined by standard tests, approved by the Engineer, shall not exceed 15% by weight in any size group.

Concrete members are to be cured with fresh water for specified duration mentioned as per ACI 308 or as specified by the Engineer Incharge. The water used for making and curing concrete shall generally be of drinking water quality and at the time of use shall be free from polluting matter in any quantity which. The water shall conform to the requirements of ASTM C1602, as to its suitability, for construction.

1.4. Steel Reinforcement

Providing Ribbed Tor / Deformed steel reinforcement grade 60 (yield strength 60,000 psi) including cutting, placing, bending, dowels, wastage, and binding wire. Reinforcement shall be Type 2 deformed bars, either hot rolled high yield steel to ASTM A-615 or cold worked steel to BS 4449. Refer to attached drawing for clarity of the steel reinforcement.

2. Solar Frame / Structure

2.1. Support Columns (Vertical Posts)

- Material: Mild Steel Round Pipe
- Size: 4" x 14 Gauge
- Quantity:
  - **2 Nos** - 9 feet height
  - **2 Nos** - 4 feet height
- Each pipe includes:
  - **8" x 8" x 6 mm** thick **MS base plate** welded

MUHAMMAD OSAMA
Asset Integrity Engineer
Corrosion Control
Sui Southern Gas Company Ltd.

ABBAS NAJAMUDDIN
Assistant Engineer
Corrosion Control
Sui Southern Gas Company Limited

- Foundation bolt holes for anchoring using **12mm ferrule-type ravel bolts**

2.2. Cross Members – Module Support (H-Girders)

- Material: MS H-Girders
- Gauge: 16
- Total Length: **100 RFt. Approx.**
- Usage: For horizontal mounting of modules
- Must include nuts and bolts of SS for mounting of solar modules preferably M10 ½" & TZ clamps for installation

2.3. Bracing and Structure Support (Angle Iron)

- Material: MS Angle Iron
- Size: 2" x 2" x 1/4" thick
- Total Length: **100 RFt. Approx.**

3. **Enamel coated structure & Paint Job**
   Provide all material, tools and labor for painting anti-rust primer 01 coat + 02 coats of enamel finish of all structural components complete in all respects as directed by Engineer In-charge.

4. **Cabling & underground cable to CPS**
   Providing labor, tools for underground cable routing trenching 2' x 50' x 2' (W x L x D) Ft.
   With caution tape and PVC Pipe 3" Dia and backfilling as per SOP and instructions of Site In-charge.

5. **Bidder Instructions**

- **Unit prices** must be inclusive of **labor, tools, transportation**.
- Bidders must provide:
  - Technical data sheets & Drawings (Mandatory)
  - Work schedule/timeline
  - Warranty details & Any deviation from the specification must be clearly highlighted

Location coordinates (25.218, 68.065)

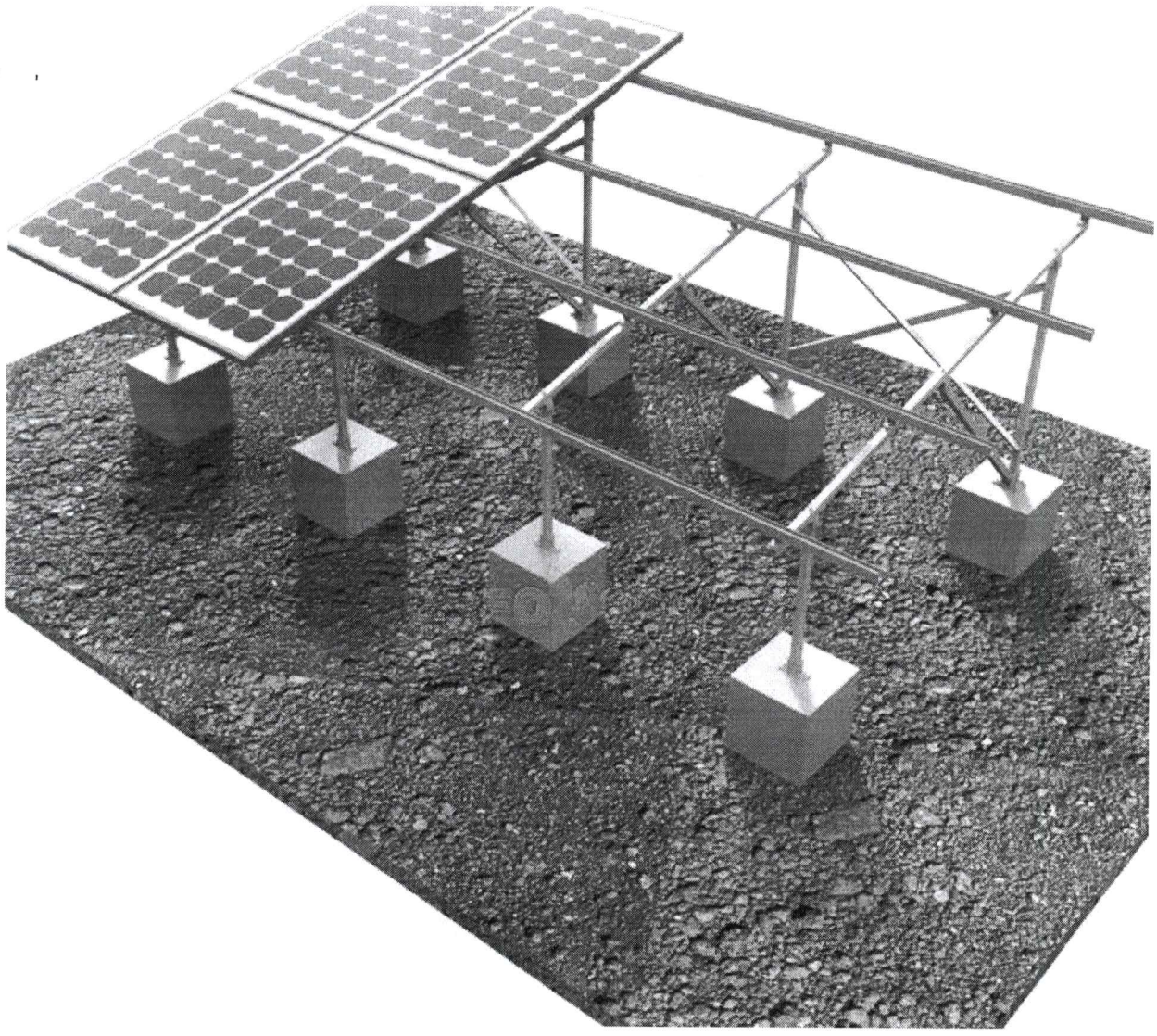
ARSAS NAJAMUDDIN
Assistant Engineer
Corrosion Control
Sui Southern Gas Company Limited

MUHAMMAD OSAMA
Asset Integrity Engineer
Corrosion Control
Sui Southern Gas Company Ltd.

Foundation for Solar Modules

ABBAS NAJAMUDDIN
Assistant Engineer
Corrosion Control
Sui Southern Gas Company Limited

MUHAMMAD OSAMA
Asset Integrity Engineer
Corrosion Control
Southern Gas Company Ltd.



ABBAS NAJAMUDDIN
Assistant Engineer
Corrosion Control
Sui Southern Gas Company Limited

MUHAMMAD OSAMA
Asset Integrity Engineer
Corrosion Control
Sui Southern Gas Company Ltd.