

TECHNICAL SPECIFICATIONS

SECTION-I

1.0 General information and scope

1.1 Scope

1.1.1 This specification covers (i) selecting type of foundation for NCA column and casting of foundation including foundation for tower footing as per owner's approved foundations design/drawing (ii) erection of column, beams, tack welding of bolts and nuts including supply fixing of insulator strings, stringing of conductor, earthwire alongwith all necessary line accessories; (iii) testing and commissioning of the erected bus bar and (iv) all other items not specifically mentioned in this specification and/or BPS but are required for the successful commissioning of the busbar, unless specifically excluded in the specification.

1.1.1.1 The owner shall provide structural drawing and bill of materials of all NCA column & NB type beams to the contractor after the placement of award for approval, in sequence, suiting the project requirement. The construction drawings for the foundations for NCA column shall also be provided by the owner to the contractor after the placement of award in sequence suiting the project requirement.

1.1.1.2 (a) The provisional quantities of concrete, excavation volume & reinforcement steel for foundation and other items are given in appropriate schedule of BPS (bid proposal sheet). However, the work shall be executed as per approved construction drawings.

(b) The various item of work is described very briefly in the schedule of quantities of bid proposal sheet (BPS). The various items of the schedule of quantities shall be read in conjunction with the corresponding sections in the technical specifications including amendments and, additions, if any. The bidder's rates shall be based on the description of activities in the schedule of prices as well as necessary operations detailed in these technical specifications.

(c) The unit rates quoted shall include minor details which are obviously and fairly intended, and which may not have been included in these documents but are essential for the satisfactory completion of the various works.

(d) The unit rate quoted shall be inclusive of all equipment, men, material skilled and unskilled labour etc. essential for satisfactory completion of various works.

(e) All measurements for payment shall be in S.I. units, lengths shall be measured in metres corrected to two decimal places. Areas shall be computed in square metres & volume in cubic metres, rounded off to two decimals.

1.1.1.3 The bidder shall submit his offer taking into consideration that the structure and foundation designs shall be provided by the owner and design rights will be strictly reserved with owner. Further, the bidder shall quote the unit rate for these items as per their units mentioned in the BPS. However, payment shall be made on per

structure/foundation basis on completion of erection as applicable to be worked out based on the approved bill of materials for towers and approved foundation drawings.

- 1.1.2 All the raw materials such as reinforcement steel and cement for column foundation etc. and erection shall be included in the contractor's scope of supply. Bidder shall clearly indicate in the offer, the sources from where they propose to procure the raw materials and the components.
- 1.1.3 The entire stringing work of conductor and earthwire shall be carried out by standard stringing technique. The bidder shall indicate in the offer, the detail description of the procedure to be deployed for stringing operation.
- 1.1.4 The following substation are included in the scope of the contractor:
Construction of 132KV substation at Mawngap.

1.1.5 Location details and terminal points

The substation is located in the East Khasi Hills District of Meghalaya.

2.0 Line Data

2.1 Electrical system data :

1	Nominal voltage	KV	132
2	Maximum system voltage	KV	145
3	BIL (impulse)	KV(Peak)	650
4	Power frequency withstand voltage (wet)	KV (rms)	275

2.2 Details of line materials : Conductor & earthwire :

Sl. No.	Description	Unit	Earthwire	Conductor
1	Name /type	-	Galvanised steel	ACSR Panther
2	Size	mm	7/3.15	30/3.00 Al + 7/3.00 steel
3	Conductor per phase	No.	N.A.	1
4	Overall diameter	mm	9.45	21.00
5	Unit mass	Kg/Km	428	974
6	Minimum UTS	KN	56	89.5

2.3 Details of line materials : insulator strings with disc insulators :

Sl. No.	Particulars	Single suspension string	Single tension string
1	Type of disc	Semi fog	Semi fog
2	E&M strength of each insulator in the string in KN	90	120
3	Nos. of disc insulator per string	1 x 10	1 x 10
4	Size of the disc in mm	255 x 145	255 x 145
5	Size and designation of pin ball shank in mm	16	16
6	Minimum creepage distance of each disc in mm	292	292

END OF SECTION - I