

## **DATA CHECK LIST**

### **To be fill up and all required documents below to be submitted along with Techno Commercial Bid**

1. Name of contractor / Firm :
2. Contrator's / Firm status : Proprietor / Partnership / Pvt. Ltd. / Public Ltd.
3. Contact Person:-

Name :

Designation :

Phone No. :

Mobile No. :

E-mail :
4. Company Registration No/Code :
5. IT PAN No :
6. GST Registration No :
7. PF registration No :
8. ESI no :
9. Tender Fee Detail (E-reciept/Reciept No) :
10. EMD details (DD No/E-receipt No etc ) :
11. Valid A-Class electrical contractor license :
12. Labour license, If applicable :
13. Documentary evidence in support of Pre-Qualifying Criteria. (PQC) :
14. All Annexures as per Enclouser of NIT : Yes/No.
15. Acceptance for participation in RA (Reverse Auction) : Yes/No

Note:- Tenderer shall submit the copy of document as a proof for Sl. No. 5 to 13 of their possession. Tender received without necessary documents are likely to be rejected.

**Signature of Issuing Officer**  
**Date**

**Signature of Contractor**  
**Date**

**SCOPE OF WORK& SPECIAL CONDITION**

➤ **Note - Kindly co-relate the scope of work with schedule –A item wise.**

**1. Scope of work for item no.1, as per schedule-A: -**

- 1.1 Supply and erection of stay sets, complete with 16 mm stay rod, 7/3.15mm stay wire, anchor plate, thimble, stay clamps, turn buckle etc. with stain insulator complete duly erected including excavation and foundation in cement concrete 1:3:6 ratio. (Only cement will be issued free of cost from BHEL store).
- 1.2 Contractor shall ensure prior inspection of supplied material.
- 1.3 Overall length of GI anchor rod should be approx. 1800 mm to be made out of 16 mm diameter rod and provided with one square GI washer of size 40X40x1.6mm and one GI hexagonal nut conforming to IS:1367:1967 & IS:1363:1967. Both washer and nut to suit threaded rod of 16 mm dia. The other end of the rod to be made into a round eye having an inner diameter of 40mm with best quality welding.
- 1.4 GI anchor plate shall be of size approx. 200x200x6 mm and have a hole in its centre of size 18 mm.
- 1.5 Turn buckle shall be made of 16 mm dia. GI Rod having an overall length of 450mm, one end of the rod to be threaded up to approx. 300 mm length and provided with two GI Hexagonal nuts of suitable size conforming to IS:1363:1967 & IS:1367:1967. The other end of rod shall be rounded into a circular eye of approx. 40mm inner diameter with proper and good quality welding.
- 1.6 Bow with Welded Angle shall be made out of approx. 16mm diameter GI rod. The finished bow shall have an overall length of 995 mm and height of 450 mm, the apex or top of the bow shall be bent at an angle of 10°. The other end shall be welded with proper and good quality welding to a GI angle 180 mm long having approx. dimension of 50x50x6mm. The angle shall have 3 holes of 18 mm dia each.
- 1.7 Thimble shall be made of 1.5 mm thick GS sheet into a size of 75x22x40mm and shape as per standard shall be supplied.
- 1.8 Average Weight of Finished 16mm Stay Sets shall be at least 7.702 KG (Minimum) (Excluding Nuts, Thimbles and Washer) and 8.445 Kg. (Maximum).

**2. Supply of GI accessories / Supply of MS accessories: -**

- 2.1 Supply of MS angle / channel / flat fittings for overhead lines of all sizes suitable for such cross arms, mounting channels/angles, clamps brackets etc. including nuts, bolts and washers, with holes, welding and other necessary materials.
- 2.2 Contractor shall make an arrangement painting of supplied material as per details mentioned in schedule.

**3. Supply and erection and commissioning of Earthing system:-**

- 3.1 Contractor shall supply and install earthing arrangements with 600 x 600 x 6.3 mm GI plate electrode (as per IS:3043 & earth resistance not more than two ohm).
- 3.2 Pit size for earthing shall be approx. 1x1x2.5 mtr. Depth of pit shall be approx. 2.5 mtr.
- 3.3 Reference drawing for earthing is attached herewith- **(refer Annexure-IX)**. However, contractor shall take prior approval of supplied material by Engineer-in-charge.
- 3.4 Refilling of pit after erection of GI plate and pipe shall be done with alternate layer of sand and mixer of charcoal and salt as per instruction given by Engineer-in-charge.
- 3.5 Contractor shall construct chamber as per attached drawing and instruction of Engineer-in-charge.

3.6 Contractor shall connect each earth pit with existing earthing system with GI wire/GI strip/ Copper wire/copper lead as per instruction of Engineer-in-charge.

4. Supply of 11kV polymer pin insulator as per enclosed **Annexure-XII**. Prior inspection of material is mandatory before installation.
5. Supply of 11kV polymer disk insulator as per enclosed **Annexure-XII**. Prior inspection of material is mandatory before installation.
6. Supply of 11kV lightening arrester as per enclosed **Annexure-XII**. Prior inspection of material is mandatory before installation.
7. Supply of shackle insulators with necessary hardware as per requirements of work. Prior inspection of material is mandatory before installation.
8. Prior inspection of material is mandatory before installation. Contractor shall supply 11 KV, A.B. Switch as per enclosed **Annexure-XIII**.
9. Contractor shall supply the 11 KV, drop out fuses (one set contains 3 nos. pole) for existing D.P. structure with necessary hardware materials and as per enclosed **Annexure-XIV**. Prior inspection of material is mandatory before installation.
10. Contractor shall supply 8 SWG GI wire as per relevant IS standard. Prior inspection of material is mandatory before installation.
11. Contractor shall supply stranded ACSR conductor (Dog) size 6/4.72+7/1.57 mm confirming to IS 398-1961 and latest update. Prior inspection of supplied ACSR conductor shall be mandatory.
12. Contractor shall supply stranded ACSR conductor (Racon) size 7/4.09 mm confirming to IS 398-1961 and latest update. Prior inspection of supplied ACSR conductor shall be mandatory.
13. Contractor shall supply stranded ACSR conductor for (Rabbit) size 7/3.35 mm confirming to IS 398-1961 and latest update. Prior inspection of supplied ACSR conductor shall be mandatory.
14. Contractor shall supply stranded ACSR conductor but for (Weasel) but size 7/2.59 mm as per IS 398-1961 and latest update. Prior inspection of supplied ACSR conductor shall be mandatory.

15. **Erection of LT pole /HT pole / stud: -**

- 15.1 Site clearing and tree cutting will be done by the contractor at his cost. No extra payment shall be made in this respect.
- 15.2 Contractor shall ensure the depth of pit to the 1/6<sup>th</sup> height of the pole. While back filling the earth must be packed tight.
- 15.3 Poles shall be issued to the contractor from the EMT store. Contractor shall cut the pole to the desired length and as decided by engineer-in-charge. No extra payment shall be made for cutting of pole.
- 15.4 Contractor shall transport the pole to the respective site. Contractor shall take all safety measures while transporting and erecting the pole to the site. It is clearly understood by the contractor that he/she bear full and final risk, out of it. Contractor will not be eligible for any compensation/claim from BHEL.
- 15.5 Each pole shall be properly earth using earthing coil. Contractor shall ensure the prior inspection of earthing coil before installation.
- 15.6 Contractor shall ensure proper alignment of pole and keep the pole in truly vertical position.
- 15.7 Contractor shall ensure the size of the bed concrete block shall be of 0.80 x 0.80 x 0.15 mtrs and pole concrete block shall be of 0.75 x 0.75 x 1.76 mtrs. The concrete mixture ratio is to be 1:3:6 (4.55 bags of cement per cu.mtr.). 5.25 bag cement/ HT pole will be issued from FMS free of cost.
- 15.8 Contractor shall ensure The size of the bed concrete block shall be of 0.80 x 0.80 x 0.15 mtrs and pole concrete block shall be of 0.75 x 0.75 x 1.76 mtrs. The concrete

mixture ratio is to be 1:3:6 (4.55 bags of cement per cu.mtr.). 5.25 bag cement/ LT pole will be issued from FMS free of cost.

15.9 Contractor shall cut pole to the required length or as decided by Engineer-in-charge for erection of stud.

15.10 Contractor shall make an earth pit having depth of apprx. 0.9 Mtr. Of suitable size.

15.11 Erection of stud shall be done while ensuring the main pole in truly vertical \position.

15.12 The size of the concrete block is to be of 0.75 X 0.7X 0.9 mtr. The concrete mixture shall be of 1:3:6 (4.55 bags of cement per cu. mtr.). 1.25 bag cement/ stud will be issued from FMS free of cost.

16. For item no.16, scope of work shall be same as point no.15.

17. For item no.17, scope of work shall be same as point no.15.

18. **Supply of GI protective pipe: -**

18.1 Contractor shall supply the GI protective pipe and coupler of good quality with the size and thickness, as mentioned in the schedule and as per IS. Prior inspection before installation of GI protective pipe and coupler is mandatory.

19. **Erection of GI protective pipe: -**

19.1 Contractor shall cut/couple the GI pipe to the required length as instructed by Engineer-in-charge.

19.2 Contractor shall lay underground / on wall the GI pipe as instructed by Engineer-in-charge. While installing the GI protective pipe on wall/ vertical position on pole, contractor shall firmly mount/grout the GI pipe using suitable GI accessories.

19.3 Contractor shall take proper precaution while laying of cable through GI protective pipe. Cable should not be damaged while laying through protective pipe.

20. For item 20, scope of work shall be same as point no.18.

21. For item no.21, scope of work shall be same as point no. 19.

22. **Erection/ fixing of T/D type service bracket: -**

22.1 Contractor shall supply the required bracket with MS angle as per size mentioned in schedule. Prior inspection of T/D type bracket is mandatory before installation.

22.2 Contractor shall installed the T/D bracket as per location and instruction given by Engineer-In-Charge.

22.3 Contractor shall supply the T/D type bracket with overall dimensions and accessories as per instruction given by Engineer-In-Charge

23. Contractor shall supply the barbered wire of approx. 1.0 Mtr. length and wrap properly on pole so as to hold the wrapped wire at position and prescribed height, in consultation with engineer-in-charge.

24. Painting (Red oxide & Al. paint) of HT/LT & street light poles of all sizes shall be done as per instruction of Engineer-in-charge. Contractor shall paint the pole with red oxide and Al paint as per guidance of engineer-in-charge. Paint, red oxide primer and thinner shall be in the scope of contractor. Contractor shall arrange the scrubber, brush and waste clothes for cleaning and painting of pole.

25. Contractor shall supply the 11kV danger board as per enclosed **Annexure-X**. Contactor shall install the 11kV danger board as per instruction of Engineer-in-charge.

26. Contractor shall supply and install cable route indicator of CI engraved with voltage level identification, for a span of 100 meter and at cable turning points etc. Contractor shall finalize the exact dimensions in consultation with engineer in-charge.

27. Contractor shall install V- cross arm of angle or channel iron on existing poles using required accessories to suitable height and instruction of engineer-in-charge. While fixing the V-cross arm on HT pole, contractor shall ensure the safety of their personnel.

28. Contractor shall install Top clamp of angle or channel iron on existing poles using required accessories to suitable height and instruction of engineer-in-charge. While fixing the top clamp on HT pole, contractor shall ensure the safety of their personnel.

29. Contractor shall install cross arm of angle or channel iron on existing poles using required accessories to suitable height and instruction of engineer-in-charge. While fixing the cross arm on HT poles, contractor shall ensure the safety of their personnel.
30. Contractor shall install cross arm of angle or channel iron on existing poles using required accessories to suitable height and instruction of engineer-in-charge. While fixing the cross arm on LT poles, contractor shall ensure the safety of their personnel.
31. Contractor shall install "D" / "B" bracket of angle or channel iron on existing poles using required accessories to suitable height and instruction of engineer-in-charge. While fixing the "D" / "B" bracket HT/LT poles, contractor shall ensure the safety of their personnel.
32. Contractor shall install DP channel of angle iron or channel iron on existing poles using required accessories to suitable height and instruction of engineer-in-charge. While fixing the "DP channel on HT/LT poles, contractor shall ensure the safety of their personnel.
33. Contractor shall install DC channel of angle iron or channel iron on existing poles using required accessories to suitable height and instruction of engineer-in-charge. While fixing the "DC channel on HT/LT poles, contractor shall ensure the safety of their personnel
34. As per schedule-A of Item No-34.
35. As per schedule-A of Item No-35.
36. As per schedule-A of Item No-36.
37. As per schedule-A of Item No-37.
38. As per schedule-A of Item No-38.
39. As per schedule-A of Item No-39.
40. As per schedule-A of Item No-40.
41. As per schedule-A of Item No-41.
42. As per schedule-A of Item No-42.
43. As per schedule-A of Item No-43.
44. As per schedule-A of Item No-44.
45. As per schedule-A of Item No-45.
46. As per schedule-A of Item No-46.
47. Making Suitable cradle type guard and erection for LT overhead lines referential drawing is attached along with the scope of work as per enclosed **Annexure-XI**.
48. Making Suitable cradle type guard and erection for HT overhead lines referential drawing is attached along with the scope of work as per enclosed **Annexure-XI**.
49. Digging as per schedule-A of Item No-49 all tools & tackles earth moving equipment's etc. as per work requirement are to be arranged by contractor, leveling of trench, putting suitable lids etc. all labour work is in scope of contractor, any leftover and debris waste are to be disposed by contractor as per instructions of engineer in charge.
50. Digging as per schedule-A of Item No-50, all tools & tackles earth moving equipment's etc. as per work requirement are to be arranged by contractor, leveling of trench, putting suitable lids etc. all labour work is in scope of contractor, any leftover and debris waste are to be disposed by contractor as per instructions of engineer in charge.
51. Work includes Shifting from BHEL store, cutting in suitable length, restocking of cables at store, use of cable guide roller etc. are in contractor's scope, providing proper support to cables, all kind of welding work, minor civil work etc. as per requirement, for civil work cement will be in BHEL's scope, all other consumables including welding rod and machines etc. in contractor's scope.
52. Removal of cable includes opening the termination, cutting of cable if required, transportation of cable and depositing the cut pieces at BHEL store, and covering/refilling the trench.

53.Item No 51 & 52 combined activity

54.Including all work of item no 51 and with suitable sand cushion at bottom and brick wall support of at least 2-3 brick height or as per site condition, following by flagstone and mud covering, actual detail will be finalized at the time of work in consultation with engineer in charge.

55.–do as for item no 52 above, including removing bricks and sand stone and Depositing the same at BHEL's store.

56.Item No 54 & 55 combined activity.

57.Work includes Shifting from BHEL store, cutting in suitable length, restocking of cables at store, use of cable guide roller etc. are in contractor's scope, providing proper support to cables, all kind of welding work, minor civil work etc. as per requirement, for civil work cement will be in BHEL's scope, all other consumables including welding rod and machines etc. in contractor's scope.

58.Removal of cable includes opening the termination, cutting of cable if required, transportation of cable and depositing the cut pieces at BHEL store, and covering/refilling the trench.

59.Item No 57 & 58 combined activity

60.Including all work of item no 57 and with suitable sand cushion at bottom and brick wall support of at least 2-3 brick height or as per site condition, following by flagstone and mud covering, actual detail will be finalized at the time of work in consultation with engineer in charge.

61.–do as for item no 60 above, including removing bricks and sand stone and Depositing the same at BHEL's store.

62.Item No 60 & 61 combined activity

63.Work includes Shifting from BHEL store, cutting in suitable length, restocking of cables at store, use of cable guide roller etc. are in contractor's scope, providing proper support to cables, all kind of welding work, minor civil work etc. as per requirement, for civil work cement will be in BHEL's scope, all other consumables including welding rod and machines etc. in contractor's scope.

64.Removal of cable includes opening the termination, cutting of cable if required, transportation of cable and depositing the cut pieces at BHEL store, and covering/refilling the trench.

65.Item No 63 & 64 combined activity

66.Including all work of item no 63 and with suitable sand cushion at bottom and brick wall support of at least 2-3 brick height or as per site condition, following by flagstone and mud covering, actual detail will be finalized at the time of work in consultation with engineer in charge.

67.–do as for item no 66 above, including removing bricks and sand stone and Depositing the same at BHEL's store.

68.Item No 66 & 67 combined activity

69. Work includes Shifting from BHEL store, cutting in suitable length, restocking of Cables at store, use of cable guide roller etc. are in contractors scope, providing proper support to cables, all kind of welding work, minor civil work etc. as per requirement, for civil work cement will be in BHEL's scope, all other consumables including welding rod and machines etc. in contractors scope.

70. Removal of cable includes opening the termination, cutting of cable if required, transportation of cable and depositing the cut pieces at BHEL store, and covering/refilling the trench.

71.Item No 69 & 70 combined activity

72. Including all work of item no 69 and with suitable sand cushion at bottom and brick wall support of at least 2-3 brick height or as per site condition, following by flagstone and mud covering, actual detail will be finalized at the time of work in consultation with engineer in charge.

73. -do as for item no 72 above, including removing bricks and sand stone and Depositing the same at BHEL's store.

74.Item No 72 & 73 combined activity

75. As per schedule-A item no-75, including supply of bobbin insulator, binding wires, and related hardware to make hanging support firm and robust, 8 SWG GI wire will be under item no 10 or the same will be issued by BHEL free of cost.

76. Removal of cable includes opening the termination, cutting of cable if required, transportation of cable and depositing the cut pieces and all material at BHEL store.

77.Item No 75 & 76 combined activity.

78. As per schedule-A item no-78, including supply of bobbin insulator, binding wires, and related hardware to make hanging support firm and robust, 8 SWG GI wire will be under item no 10 or the same will be issued by BHEL free of cost.

79. Removal of cable includes opening the termination, cutting of cable if required, transportation of cable and depositing the cut pieces and all material at BHEL store.

80.Item No 78 & 79 combined activity

81. As per schedule-A item no-81, including supply of bobbin insulator, binding wires, and related hardware to make hanging support firm and robust, 8 SWG GI wire will be under item no 10 or the same will be issued by BHEL free of cost.

82. Removal of cable includes opening the termination, cutting of cable if required, transportation of cable and depositing the cut pieces and all material at BHEL store.

83. Item No 81 & 82 combined activity

84. As per schedule –A of Item No-84.
85. De/Re- stringing of existing HT/LTO.H. Lines for removing SAG/deformity/retightening, loosen or fallen existing Overhead lines of existing network, work includes binding, opening/ tightening the OH conductors on insulators only existing lines will fall under this item.
86. As per schedule-A of Item No-86, during inspection and general maintenance If OH conductor joints/binding wire etc. need a repair/replacement.
87. As per schedule-A of item No-87
88. As per schedule-A of item No-88.
89. As per schedule-A of item No-89.
90. As per schedule-A of item No-90.
91. As per schedule-A of item No-91.
92. As per schedule-A of item No-92.
93. As per schedule-A of item No-93.
94. Contractor shall offer at least following minimum features for lamppost/ bollards-

- a. Material type- Metallic/Metal steel & fiber glass.
- b. Shade material- Glass.
- c. Special feature- Waterproof & Rustproof.
- d. Light source type- LED with 14 watts or above.
- e. Enclosure – IP65 or better.
- f. Switch installation type- Screw.

Lamppost /Bollards shall be supplied along with all accessories & LED Bulbs. BHEL shall inform contractor about the requirements & a joint visit shall be conducted to the place where lamp post/ bollards are to be replaced. Installation of Lamppost /Bollards is in contractor's scope. Old/damaged Lamppost /Bollards shall be submitted at BHEL stores.

95. Decorative lights shall be LED, IP65 enclosures. Decorative lights shall be supplied along with all accessories & LED Bulbs (not below 8 Watts). BHEL shall inform contractor about the requirements & a joint visit shall be conducted to the place where decorative lights are to be installed. Installation of Lamppost /Bollards is in contractor's scope. Old/damaged Lamppost /Bollards shall be submitted at BHEL stores.
96. BHEL shall inform contractor about the exact no. of trees to be trimmed/cutted which falling on/obstructing HT lines. Cutting tools as well as clearing the area where tree trimming/ cutting of branches has been done, is in contractor's scope.
97. BHEL shall inform contractor about the exact no. of trees to be trimmed/cutted which are falling on/ obstructing LT lines. Cutting tools as well as clearing the area where tree trimming/ cutting of branches has been done, is in contractor's scope.

98. Scope as per Schedule-A of Item no.-98. BHEL shall inform the exact qty. & location of poles for completing the task.
99. Scope as per Schedule-A of Item no.-99. BHEL shall inform the exact qty. & location of poles for completing the task.
100. As per schedule-A of Item No-100, of relevant standards.
101. As per schedule-A of Item No-101, of relevant standards.
102. As per schedule-A of Item No-102, of relevant standards as per site requirements.
103. As per schedule-A of Item No-103, of relevant standards as per site requirements.

## Special Conditions

1. Successful bidder shall maintain the “buffer stock” in BHEL’s store in order to meet and emergency requirement.
2. Minimum quantity of buffer stock in BHEL’s store shall be as under :-
  - ✓ Item No. 2 – 500 kg.
  - ✓ Item No. 4 – 02 nos.
  - ✓ Item No. 5 – 02 nos.
  - ✓ Item No. 6 – 01 nos.
  - ✓ Item No. 7 – 30 nos.
  - ✓ Item No. 8 – 02 set.
  - ✓ Item No. 9 – 02 set.
  - ✓ Item No. 10 – 500 mtr.
  - ✓ Item No. 96 – 50 mtr.
  - ✓ Item No. 97 – 50 mtr.
3. Above stock shall be maintained within 1 month of WO, payment of the same will be done in first running bill.
4. During execution of work the buffer stock material must be used first as per requirement, the same should be re filled to maintain the buffer stock as per clause no 2 above.
5. All the work shall be carried out as per code of practice and IE rules.
6. Contractor should ensure the compliance of all safety norms / regulation.
7. For carrying out the Erection & Commissioning work required tools & tackles and personnel protective equipment's i.e. **rubber hand globes, safety shoes, Helmet etc** shall be arranged by the contractor himself.
8. Emergency torch, Electrical measurement tools are in contractor’s scope.
9. Labor uniforms are in contractor scope.
10. Requirement for Hydra/crane any other lifting arrangement to execute the job satisfactorily and safely is to be arranged by sub-contractor on its cost.
11. Shifting or material is in contractors scope.
12. Contractor shall depute **competent supervisor** to supervise the work to be carried out during the day.
13. Supply of all type of consumable items viz. cable tie, insulation tape both HT and LT, welding rod, waste clothes, cans, painting accessories etc. are to be arranged by contractor.
14. Ladder, chain pulley block, hydra lifter etc. are in contractor’s scope as per work requirement.
15. Temporary/ permanent shades on DBs/JBs/Light fittings /or at any electrical equipment may be required is in contractors scope for labor work only, material for shades in BHEL scope.
16. Contractor must put safety line of around the work area.
17. After completion of work, it is contractor’s responsibility to clear the site and clean the work area from waste and debris etc., work report is to be submitted duly signed by competent supervisor for record.
18. Safety permit to work must be strictly obtained from the concerned supervisor / Engineer-in-charge before starting the work.
19. Log book shall be maintained for all the activities on daily basis and also individual equipment wise formats of log book shall be given by BHEL.
20. BHEL reserve the right to recover the cost of any damage to the equipment as may deem fit without explanation to contractor.
21. The contractor shall get approval from Engineer-in-charge before work execution. Any dissatisfactory work will be liable to rework without claiming compensation.

22. The decision of Engineer-in-charge regarding satisfactory work shall be final and binding on contractor.
23. Repeated failure to comply with condition as above may lead to termination of contract at the cost and risk of contractor.
24. Any activity which is not mentioned but required for the execution of above work shall also be carried out by the contractor.
25. Contactor is advised to visit the site and understand the quantum of work, site condition, BHEL store and site location before quoting.
26. It must be clearly understood by contractor and duly confirmed that he shall bear full and final risk arising out of working with 11 KV system. No claim shall be made by the contractor for damage to his tools or tackles and any injury, whatsoever, which may occur to any of his workmen during the execution of this work.
27. Accommodation of labor, medical requirement, insurance, PF, ESI all are in contractor's scope and as per the BHEL's statutory requirement of prevailing labor laws.
28. The payment of the Contractor will be made after submitting the **Running/Final Running Bill**.
29. Payment shall be made for the quantity of works attended as mentioned in Schedule-A.
30. Penalty for delay of work shall be imposed as per Schedule –B.
31. Quantum and work and value may vary as per site condition and requirement.

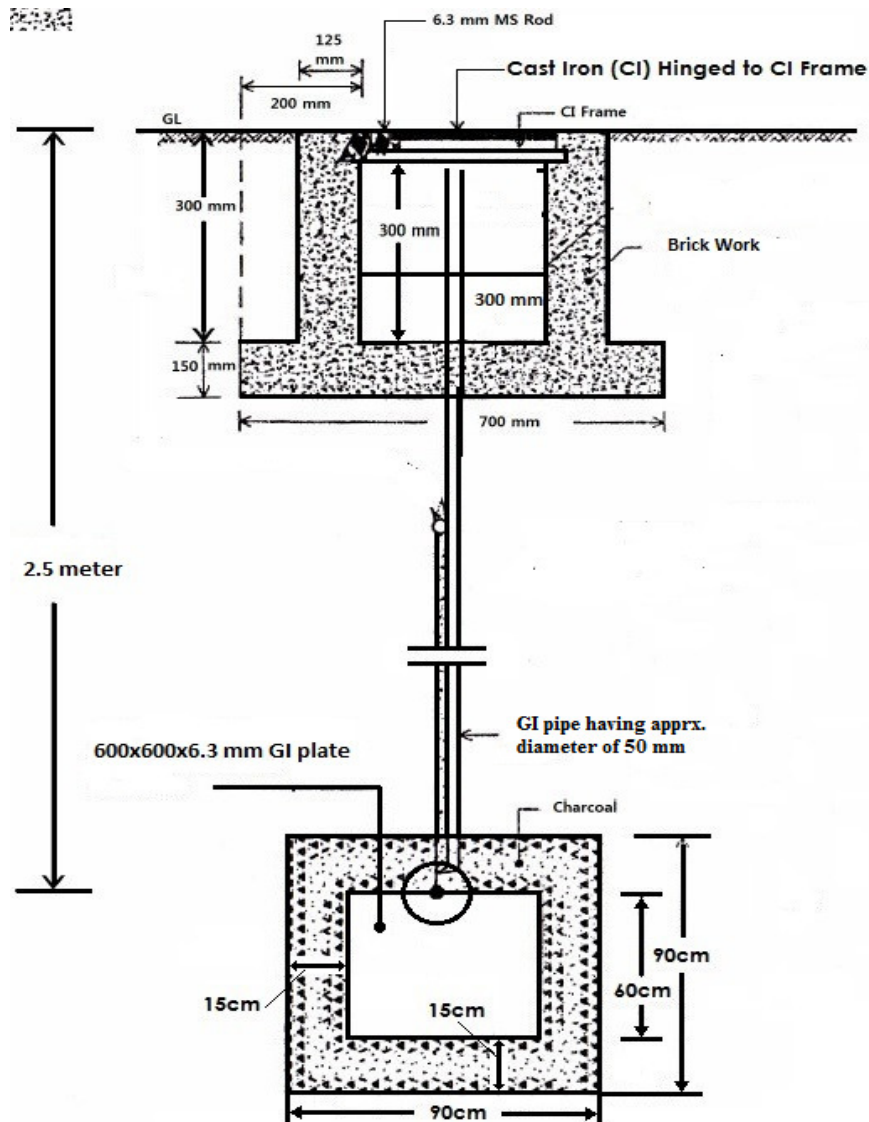
**Signature of Issuing Officer**

**Signature of Contractor**

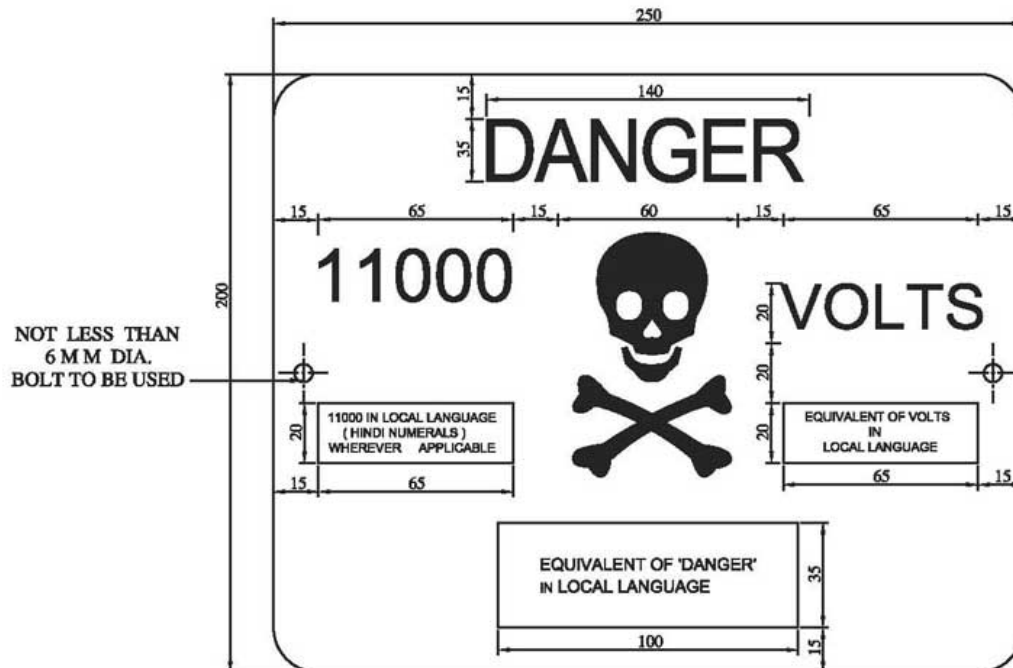
**Date**

## Annexure-IX

Note:- Below drawing for earthing system is given only referential purpose. However, contractor shall install earthing system only after consultation with Engineer-in-charge.



# Plate Earthing

**'DANGER' NOTICE PLATES**

CAT. NO. - CDP-01

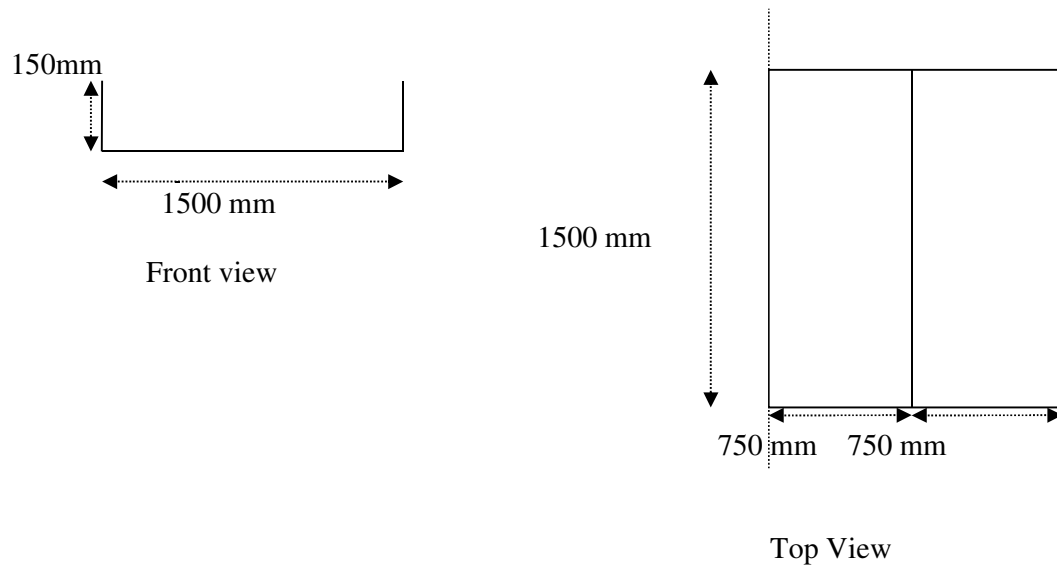
According to Rule No.- 35 of Indian Electricity Rules, 1956 'Danger' Notice Plates in Hindi or English and in addition in the local language with the sign of skull & cross bones are required to be provided on the power line supports & other installations.

The 'Danger' Notice Plates are not required to be provided on supports like PCC, tubular, wood, steel rails, etc. which cannot be climbed easily without the aid of ladder or special appliance. A specification provided by REC & IS: 2551-1982 for 'Danger' Notice Board.

**Material & Finish :** 1.6 mm (Mini) thick Mild Steel plate of size - a) 250 X 200 mm for display at 11 KV (or higher voltages) installations.  
b) 200 X 150 mm for display at 415 V installations.

**Finish :** Vitreous enameled white, with letters, figure and conventional skull & crossbones in signal red colour (Ref. IS : 5, 1978 on the front side. The rear side of the plate shall also be enameled.

**Specifications for guarding arrangement**



**“Cradle type guarding arrangement”**

- 1) At road crossing distance between lacing is approx. **900mm**.
- 2) First lace shall start at approx. 700 mm from the pole.
- 3) Vertical distance between guarding and main conductor shall be minimum 600 mm.

**Specifications for Insulator****1) PIN INSULATORS:-**

1	Material	Composite polymer
2	Standard	IEC 61109
3	FRP rod	Boron free ECR
4	Shed Material	Silicon Rubber
5	End fittings	SGCI/MCI
6	Rated Voltage	11 kV
7	Highest Voltage	12kV
8	Dry Power freq. Withstand Voltage	60kV
9	Wet Power freq. withstand Voltage	35kV
10	Creep age distance (min)	320 mm
11	Failing load (Min)	10 KN
12	Dia. of FRP rod (Min)	20 mm
13	Length of FRP rod (min)	165 mm
14	Thickness of housing (Min)	3 mm
15	Method of fixing sheds to housing.	Injection molding
16	Name plate/mark	Required with technical date
17	Duty Condition	Outdoor only

2) **DISC.INSULATORS** :-

1	Material	Composite polymer
2	Standard	IEC 61109 & IEC- 60815/ IS: 13134
3	FRP rod	Boron free ECR
4	Shed Material	Silicon Rubber
5	End fittings	SGCI/MCI
6	End metal connections	Tongue and clevis type only
7	Rated Voltage	11 kV
8	Higest Voltage	12kV
9	Dry Power freq Withstand Voltage	60kV
10	Wet Power freq withstand Voltage	35kV
11	Creepage distance (min)	320 mm
12	Failing load (Min)	40 KN
13	Dia of FRP rod (Min)	16 mm
14	Length of FRP rod (Min)	165 mm
15	Thickness of housing (Min)	3 mm
16	Method of fixing sheds to housing.	Injection molding
17	Name plate/mark	Required with technical date
19	Duty Condition	Outdoor only

3) **Specification For Lighting Arrestor :-**

1	Material	Composite polymer
2	Standard	IEC 60099/IS 3070
3	Type	Gapless Metal oxide
4	Class	Distribution class
5	Construction	Hermetically Sealed, self-supporting.
6	Duty	Outdoor only
7	Rated Arrestor Voltage	9 kV rms
8	Highest Voltage	12kV rms
9	Nominal discharge Current	5kA
10	Max Continuous operating Voltage	7.56 kV rms
11	Partial discharge	less than 10 pC
12	Lightning impulse Voltage	75 kVp
13	High current impulse withstand at 4/10 $\mu$ s	65kV/100kV
14	1 min power freq. with stand voltage of housing	28 kV rms
15	Name plate/mark	Required
16	Line disconnecter and suitable terminals	Required
17	Mounting brackets	Required

**11kV, 200A, Outdoor Air Break switch/GOD (with earthing provision)**

1	AB Assembly	consist of three pole, 9 insulator type with provision of gang operation from ground
2	Material	Composite polymer
3	Standard	IEC 62271, IS 9921
4	FRP rod	Boron free ECR
5	Shed Material	Silicon Rubber
6	Mechanism	Three pole 9 insulator only
7	Contacts	Hard Drawn Electrolytic Copper grade only with Ag/Ti plating.
8	Arcing Horn	Hot Dip Galvanized only
9	Rated Voltage	11 kV
10	Highest Voltage	12kV
11	Rated Current	200 Amp
12	Mounting	Suitable for both vertical & horizontal
13	Ferrous parts	Hot Dip Galvanized only
14	Non ferrous parts	EC grade copper only with heavily Tin/silver protection.
15	Copper braid (if used)	Minimum weight 475 gms
16	Duty Condition	Outdoor only
17	Operating Rod	GI only
18	Phase coupling rod	GI only
19	Operating handle	GI only
20	Base channel	GI only
21	Contact pad	with 2 holes and GI hardware for conductor connection
22	Fixed jaws (Female)	shall be made of EC copper (minimum 95% copper composition) duly silver coated controlled by stainless steel high pressure spring housed in robust G.I. Cover.
23	Handle locking arrangement	Required at both the position ON/OFF
24	Name plate/mark	Required with technical information

**Specifications for DO Fuses**

1	Fuse pole/post insulators	Composite polymer
2	Standard	IEC 282/IS 9385
3	Type	Expulsion only
4	Construction	lift off type, suitable to operate manually by FRP insulation rod
5	Duty	Outdoor only
6	Rated Voltage	11 kV
7	Highest Voltage	12kV
8	Rated Current	200 Amp
9	One Minute Power Frequency withstand Voltage to Earth (Min)	28kV
10	One Minute Power Frequency withstand Voltage across terminals (Min)	32kV
11	Impulse withstand Voltage to Earth (Min)	60kVp
12	Impulse withstand Voltage across terminals (min)	75kVp
13	Rated Short time current for 1 sec (min)	16 kA
14	Cantilever strength (kN)	6 kN minimum
15	Mounting arrangement	vertical with suitable GI hardware and clamps.
16	Connectors	Bolted type with groove to hold the conductor.
17	Non-ferrous parts	EC grade copper/alloy with heavily Tin/silver protection.
18	Fuse tube	Epoxy resin and fiber glass. (ERFG) with UV inhibitor coating.
19	Fly nuts	Required to tighten the fuse element.
20	Operating hook	required for ground operation/fuse element change.