

Electrical Part

Scope of work & Technical Specifications

The scope of work includes basic items like Fans, Tube lights, Plug points along with street lights and power connection cable suitable for 3 phase connection from nearby existing building to the proposed location of Auditorium for the work of “Construction of Auditorium Hall at RESTI at Bhujodi, Bhuj – Electrical Part”

1. Technical Specification for Item No. 1:

This includes supply at site 1.1 KV grade, 4 core aluminum conductor, XLPE insulated armoured cable conforming to IS: 7098 (Part-I) 1985 with up to date amendments and of approved make with ISI mark. The manufacturer shall produce TYPE TEST certificate with similar size of cable, which shall not be more than 3 years old. The cable shall have marking/embossing at the interval of every meter showing its progressive length. The manufacturer's routine test certificate shall produce with supply of cable at site.

2. Technical Specification for Item No. 2:

This includes laying of cable through following type..

(a) Hard/Soft Soil:

This includes laying of single length cables up to 4.0 core x 50 Sq.mm LT armoured aluminum Conductor XLPE Cable of 1.1KV Grade (excluding supply of cable) through excavation in soft/hard soil. The trench to be excavated 0.3 Mtr. wide 0.6 Mtr. deep. The bed of 50mm of river sand shall be provided in the bottom of the excavated trench. The cable shall be laid over the bed of river sand. The cable shall be protected by providing and laying bricks both the sides lengthwise parallel to the cable & the gaps shall be filled with river sand. The cable shall be covered by keeping two bricks over the side bricks. The filling of the trench shall be done with the excavated stuff & should be watered and rammed properly to its original position. The excess excavated stuff shall be disposed off from the Site of work and spreader in low laying area as directed.

The contractor shall provide heat shrinkable straight through joint of relevant size of approved make if the laying of cable shall be more than standard drum length. This includes all labour and material as directed by Engineer-in-Charge.

(b) On wall through saddles & clamps:

This includes laying of supplied single length cable up to 4.0 core x 50 Sq.mm LT armoured aluminum Conductor XLPE Cable of 1.1KV Grade (excluding supply of cable) on existing wall/cement structure. The G.I. Saddle set with base & Clamps shall be provided of suitable size (with respect to cable outer diameter) made from G.I. flat 25 x 3 mm with G.I. Nut bolts/heavy duty screws for clamping. The base shall be fixed rigidly on wall/cement structure through cemented wooden gutties at 0.50 mtr. Intervals & the cable shall be laid on 3mm thick G.I. saddle base on wall/cement structure and clamped rigidly by G.I. screwing/bolting of clamps. The work includes with all materials and labour as directed by Engineer-in-charge.

3. Technical Specification for Item No. 3:

(a) Supply: This includes supply of (a) 8 Way & (b) 16 way double door SPN DB with IP42 degree of protection. The DB shall be made from special grade of CRCA sheet and powder coated. The DB shall be fitted with Busbar, DIN Rail and neutral link. The rates shall be excluding the cost of MCB.

(b) Fixing: This includes fixing & commissioning of supplied double door SPN DB on wall / structure as directed. The DB shall be fixed rigidly on wall through suitable size of nut bolts/anchor fasteners/cemented wooden gutties as directed. This includes necessary wiring, connections & earth linking with all material, labour tools & tackles as directed by Engineer-In-charge.

4. Technical Specification for Item No. 4:

(a) Supply: This includes supply of following MCBs as per the requirements.

(I) 40A, 415/440V, 4P (TPN) MCB

(II) 6 -32 A 230/250V DP MCB

(III) 6 -32 A 230/250V SP MCB

The MCBs shall be of DIN Rail mounted 'C' Series with 10kA Breaking Capacity. The supplied MCB shall be conform to relevant IS.

(b) Fixing: This includes fixing & commissioning of supplied SP/DP/TP/TPN MCB in existing SPN double door DB on wall / structure. The MCB shall be fixed on DIN Rail provided in existing DB. This includes necessary 1 ϕ / 3 ϕ wiring, connections, distribution & earth linking of DB with all material, labour tools & tackles as directed by Engineer-In-charge.

5. Technical Specification for Item No. 5:

(a)

The item includes providing & fixing concealed wiring for single phase sub-circuit from the main switch /meter /DBs / MCBs to the switchboard with Flame Retardant, 1100 Voltage grade, single core stranded copper conductor wire of size 2.5 sq. mm. for phase & neutral wire and 1.5 Sq.mm continuous stranded copper conductor wire for earth to be laid through PVC Round Pipe of size 25 mm Diameter of Medium Mechanical Strength (MMS) type and other accessories such as Tee, junction box, inspection bends, elbow etc. of approved make. The proper size of gress shall be prepared by contractor on wall/ceiling as case may be & the conduit pipe shall be laid through prepared gress and in case of new construction the pipes shall be laid during reinforcement work. After laying of pipe the gress shall be closed with mixture of cement & sand and to match with existing surface of wall/ceiling. Complete work consists of

necessary wiring connections and earth linking at both the ends with all materials and labour as directed by Engineer-in-charge.

- (b) The item includes providing & fixing concealed wiring for single phase sub-circuit from the main switch / meter / DBs / MCBs to the switchboard with Flame Retardant, 1100 Voltage grade, single core stranded copper conductor wire of size 4.0 sq. mm. for phase & neutral wire and 1.5 Sq.mm continuous stranded copper conductor wire for earth to be laid through PVC Round Pipe of size 25 mm Diameter of Medium Mechanical Strength (MMS) type and other accessories such as Tee, junction box, inspection bends, elbow etc. of approved make. The proper size of gress shall be prepared by contractor on wall/ceiling as case may be & the conduit pipe shall be laid through prepared gress and in case of new construction the pipes shall be laid during reinforcement work. After laying of pipe the gress shall be closed with mixture of cement & sand and to match with existing surface of wall/ceiling. Complete work consists of necessary wiring connections and earth linking at both the ends with all materials and labour as directed by Engineer-in-charge.

6. Technical Specification for Item No. 6:

The item includes providing & fixing concealed wiring for light/tube/bell point from switchboard with Flame Retardant, 1100 Voltage grade, single core stranded copper conductor wire of size 1.5 sq. mm. for phase & neutral wire and 1.0 Sq.mm continuous stranded copper conductor wire for earth to be laid through PVC Round Pipe of size 20 mm Diameter of Medium Mechanical Strength (MMS) type and other accessories such as Tee, junction box, inspection bends, elbow etc. of approved make. The proper size of gress shall be prepared by contractor on wall/ceiling as case may be & the conduit pipe shall be laid through prepared gress and in case of new construction the pipes shall be laid during reinforcement work. After laying of pipe in the gress shall be closed with mixture of cement & sand and to match with existing surface of wall/ceiling. The work also includes providing & fixing of Bell Push/Flush type SP switch 6A x 250V with ISI mark and 3 plate Ceiling Rose/Angle Holder made from polycarbonate on suitable size of PVC box with cover. The PVC box shall be embedded properly in the wall and the switches shall be fixed on cover of the embedded box. The complete work consists necessary wiring connections and earth linking at both the ends with all materials and labour as directed by Engineer-in-charge.

7. Technical Specification for Item No. 7:

(a) Full Plug Point:

The item includes providing & fixing concealed wiring for plug point with Flame Retardant, 1100 Voltage grade, single core stranded copper conductor wire of size 1.5 sq. mm. for phase & neutral wire and 1.0 Sq.mm continuous stranded copper conductor wire for earth to be laid through PVC Round Pipe of size 20 mm Diameter of Medium Mechanical Strength (MMS) type and other accessories such as Tee, junction box, inspection bends, elbow etc. of approved make. The proper size of gress shall be prepared by contractor on wall/ceiling as case may be & the conduit pipe shall be laid through prepared gress and in case of new construction the pipes shall be laid during reinforcement work. After laying of pipe the gress shall be closed with mixture of cement & sand and to match with existing surface of wall/ceiling. The work consists providing & fixing of Flush type SP switch 6A x 250V with ISI mark and 2 in 1 socket 6A x 250V made from polycarbonate on suitable size of PVC box with cover. The PVC box shall be embedded properly in

the wall and the switch & Socket shall be fixed on cover of the embedded box. The complete work consists necessary wiring connections and earth linking at both the ends with all materials and labour as directed by Engineer-in-charge.

(b) Half Plug Point:

The item includes providing & fixing half point in existing switch board with Flame Retardant, 1100 Voltage grade, single core stranded copper conductor wire of size 1.5 sq. mm. for phase, neutral & earth. The work consists providing & fixing of Flush type SP switch 6A x 250V with ISI mark and 2 in 1 socket 6A x 250V made from polycarbonate on existing switchboard. The complete work consists necessary wiring connections and earth linking with all materials and labour as directed by Engineer-in-charge.

8. Technical Specification for Item No. 8:

The item includes providing & fixing concealed wiring for fan point from switchboard with Flame Retardant, 1100 Voltage grade, single core stranded copper conductor wire of size 1.5 sq. mm. for phase & neutral wire and 1.0 Sq.mm continuous stranded copper conductor wire for earth to be laid through PVC Round Pipe of size 20 mm Diameter of Medium Mechanical Strength (MMS) type and other accessories such as Tee, junction box, inspection bends, elbow etc. of approved make. The proper size of grew shall be prepared by contractor on wall/ceiling as case may be & the conduit pipe shall be laid through prepared grew and incase of new construction the pipes shall be laid during reinforcement work. After laying of pipe the grew shall be closed with mixture of cement & sand and to match with existing surface of wall/ceiling. The work consists providing & fixing of Flush type SP switch 6A x 250V with ISI mark and Step cut electronic fan regulator with rotary steps & 3 plate Ceiling Rose made from polycarbonate on suitable size of PVC box with cover. The PVC box shall be embedded properly in the wall and the switches shall be fixed on cover of the embedded box. The complete work consists necessary wiring connections and earth linking at both the ends with all materials and labour as directed by Engineer-in-charge.

9. Technical Specification for Item No. 9:

- (a) Supply:** This includes supply at site 4 ft LED Tube light fixture of 20-22 Watt. The tube light shall be operating on single phase 230V, 50Hz AC supply. It shall be with white light and shall be have the facility of clamping the tube rod on fixed clip (on the wall) The LED rod shall be fluctuation proof and shall provide with in-built driver.
- (b) Fixing:** This includes fixing and commissioning of supplied 4ft LED 20-22 Watt tube light fixture on wall/ceiling at suitable height on cemented wooden gutties as directed and connection with 3 core flexible copper cable from nearest source of supply/ceiling rose & necessary connection with all material and labour as directed by Engineer-in-Charge.

10. Technical Specification for Item No. 10:

(a) Supply: This includes supply of 1200 mm sweep ceiling fan fitted with heavy duty grease filled double ball bearing that ensures noiseless performance and long lasting smoother life of fan suitable upto 250V AC supply. The Fan blades aerodynamically balanced to ensure maximum air delivery at lower power consumption & the blades shall be made of 'heavy gauge' aluminum sheet so as to retain the blade's angle over a longer period. The Fan motor made of superior grade copper wire and impregnated in special varnish for long life operation. The motor shall be totally enclosed and low-loss-silicon steel stampings ensure minimum power consumption with high optimum output. The Fan coated with a special anticorrosive enamel paint that makes them rust free and ensures a classic appearance and longer life. The supplied fan conforming to ISI specifications. The fan shall be supplied all accessories such as down rod 30/60/120cm long, PVC Bobbin, Stainless Steel Nut Bolt with cotter pin, capacitor etc. of approved make and as per IS specification as directed by Engineer-in-charge.

(b) Fixing: This includes fixing & commissioning of supplied ceiling fan with all accessories in existing hook including necessary wiring and connection from nearest point / Ceiling rose through PVC flexible copper conductor wire and earth linking etc. with all material and labour as directed by Engineer-in-charge.

11. Technical Specification for Item No. 11:

(a) Supply: This includes supply of energy efficient LED 60 Watt, Street Light Fixture. The fixture shall be of 100Lm/W delivered, Pressure die cast housing with toughened glass, the fixture shall have secondary optics for better light distribution. Driver protection against lightening, over voltage, short circuit. Excess to driver shall be from top. The fixture shall be IP 66. Impact protection shall be IK07.

(b) Fixing: This includes fixing and commissioning of supplied LED 10 Watt bulk head light fixture on wall/ceiling at suitable height on cemented wooden gutties as directed and connection with 3 core flexible copper cable from nearest source of supply & necessary connections & earth linking with all material and labour and as directed by Engineer-In-Charge.

12. Technical Specification for Item No. 12:

(a) Supply: This item includes supply of Tamper proof, Shock proof and Rust proof SMC (Sheet Moulding Compound) Junction box with side hinged door and shall be supplied with 5 nos. connectors suitable for 16A x 230 Volts.

The Junction box shall be in single piece without any joints having concealed hinges, mounting screws fitted from inside, Metal hardware for wire seal, light weight and adequate.

The size of SMC Junction Box shall be of inside dimension 140 mm x 140 mm x 95 mm.

(b) Fixing: This includes fixing of supplied Shock proof and Rust proof SMC (Sheet Moulding Compound) Junction box on wall / structure/Pole as directed. The Junction Box shall be fixed rigidly on wall through suitable size of nut bolts/anchor fasteners/cemented wooden gutties and in case of pole it shall be fixed through suitable size of G.I. clamp at least 2mm. thick as directed. This includes with all material, labour tools & tackles including necessary wiring & connections with earth linking as directed by Engineer-In-charge

13. Technical Specification for Item No. 13:

This includes Supply and preparation of earth station with chemical treated back filled compound corrosion protection by hot dip 25-30mm dia. Pipe-In-Pipe GI type 2 Mtr. Depth, maintenance free including all accessories. This also includes necessary masonry work for preparing of earth pit.

14. Technical Specification for Item No. 14:

This includes supply at site, laying, fixing and connecting of G.I wire of size 8 SWG from earth station/existing earthing system to Junction Boxes/Distribution Boards/lighting accessories etc. as directed. The 8 SWG earth wire shall be passed through conduit pipe.

15. Technical Specification for Item No. 15:

The item includes providing & fixing concealed wiring for Power point with Flame Retardant, 1100 Voltage grade, single core stranded copper conductor wire of size 4.0 sq. mm. for phase & neutral wire and 2.5 Sq.mm continuous stranded copper conductor wire for earth to be laid through PVC Round Pipe of size 25 mm Diameter of Medium Mechanical Strength (MMS) type and other accessories such as Tee, junction box, inspection bends, elbow etc. of approved make. The proper size of grew shall be prepared by contractor on wall/ceiling as case may be & the conduit pipe shall be laid through prepared grew and incase of new construction the pipes shall be laid during reinforcement work. After laying of pipe in prepared grew the grew shall be closed with mixture of cement & sand and to match with existing surface of wall/ceiling. The work consists providing & fixing of 5 in 1 combined unit suitable for 1 with switch, socket, fuse & indicator with ISI mark. The PVC box of suitable size shall be embedded properly in the wall and the combined unit shall be fixed on embedded PVC box. The complete work consists necessary wiring connections and earth linking at both the ends with all materials and labour as directed by Engineer-in-charge.

16. Technical Specification for Item No. 16:

(a) Supply: This includes supply at site 6 way double door SPN DB with IP42 degree of protection. TH DB shall be made from special grade of CRCA sheet and powder coated. The DB shall be fitted with Bus Bar, DIN Rail and neutral link. Along with each DB box, the following MCBs & RCCB shall be supplied and accordingly calculate the quantity. The rates shall be including the cost of MCBs & RCCB supplied along with DB.

S/N	Description for 1 Box	Qty. for each DB
1	RCCB, 4 Pole, 40 Amp, 100 mA	1
2	SP MCB, 32 Amp,	2

(b) Fixing: This includes fixing and commissioning of supplied double door DB on wall / structure as directed. The DB shall be fixed rigidly on wall through suitable size of nut bolts / anchor fasteners / cemented wooden gutties as directed. This includes necessary wiring, connections & earth linking with all material and labour as directed by Engineer-in-Charge.

SPECIAL CONDITIONS FOR ELECTRICAL PART

Name of work: Construction of Auditorium Hall at RSETI at Bhujodi, Bhuj -
- Electrical Part.

1. In the event of dimension figures upon a drawing differing from those obtained by measuring drawings shall be referred to the Chief Mechanical Engineer, whose decision shall be final and binding upon the Contractor.
2. The Contractor shall submit the coloured three sets Hard copy of approved drawing of cable routes, circuit diagram of LT installation layout, plans of wiring with technical literature and soft copy and also three sets of as made drawing on completion of work along with tracing.
3. While carrying out the work of electrical nature, the Contractor shall adhere to the provisions of the Indian Electricity Rules, 1956 and as amended from time to time and shall not violate any Regulations, which he will be solely responsible.
4. While crossing the rail/road, damaged caused to it should be set right by Tenderers to the Satisfaction of the Executive Engineer (TD), Deendayal Port Authority. Before laying the new cables at existing route through Road/ rail / jetty, contractor shall take written permission from Engineering –In-Charge, in this regard contractor shall make earmarked drawing in two set, which will clear indicated the whereas cable will pass and take permission from TD Division. After completion of new cable, laying work contractor shall take NOC from Harbour Division regarding satisfactory completion of Road/Rail/RCC crossing work at inside cargo jetty area & copy of NOC same should be submitted to Executive Engineer (Electrical).
5. The work shall be programmed in such a way that the electric supply to the existing installations is not disturbed to the extent possible keeping in view of the work of cutting existing cables, making straight joints and terminating cable ends in the feeder pillar, switchgear etc. shall be carried out within the shortest possible shut down periods to instruction.
6. Armouring of the PVC-A-PVC / XLPE armoured cables shall be effectively earthed at the termination glands and connecting to the nearest earth point. The tail end shall be taped with PVC adhesive tape appropriate colour.
7. The cable to be supplied by the Contractor shall be in standard drum length and straight joint shall be avoided as far as possible. In case same cannot be avoided the Contractor shall supply the requisite number of straight joints

complete with jointing materials and accessories shall carry out the jointing work at their cost.

8. Necessary marking and lettering giving details of the circuits, cables etc. shall be carried out on the pedestal and LT panels as per the directions given.
9. All the supporting framework of the DB/LLP and other equipment shall be painted with two coats of primer and two coats of finishing paints of grey shade no 631 of IS: 5 after proper surface Cleaning, de-greasing, chemical cleaning as per the recommendation of the manufacturer.
10. Caution board vitreous enamelled written in three languages, one being the regional language, shall be fixed or displayed to indicate danger and supply pressure according to the Indian Electricity Rules 1956 wherever the supply is at 440 Volts and above.
11. Necessary cable route indicators and cable joint indicators shall provide at an interval of 100 Meters approximately.
12. The Contractor has to provide the materials and equipments of following make as per the approved list attached.
13. The contractor shall study the local working conditions at the site of work before tendering and no claim what-so-ever shall be entertained.
14. The work shall be carried out in accordance with the best standards of workmanship and to the entire satisfaction of the Engineer-in-Charge.
15. The electrical installation shall confirm to all currently applicable ISI specification such as IS: 732, IS: 3043, IS: 2309, IS: 3045 etc. with up to date amendments including relevant IEC regulation and Indian Electricity rules 1956 with up to date amendment.
16. Necessary earthing of wiring, Load Panel, etc. set will be carried as per the IE rule & Act.
17. For laying the new supplied cable, contractor shall take route approval in drawing from EIC same will be send to Civil Department for permission through proper channel for Civil Item like Road/Rail/RCC Crossing,

- 18.** For High Mast, Foundation work shall be carried out under supervision of Civil Engineering Department. Necessary Drawing & Material for foundation shall be approved from civil Engineering Department.
- 19.** The Tenderers shall quote the rate for cable lying, which shall include the, cable tagging, dressing, end termination, appropriate size of glands & ferrule work as per requirement etc.
- 20.** All wiring, shall be concealed/Surface as per specification & LED fittings will be surface mounted Bulk Head, hence at the time of CIVIL work, firm shall be planed accordingly & continues touch with EIC, For concealed wiring / Points/ sub Ckt. /location of LED fitting, LPP/Meter/DB, otherwise firm shall be responsible for any untoward situation & no claim what-so-ever shall be entertained.
- 21.** Queries about the Technical Data
The Engineer-in-Charge will clarify queries on the Technical Data.
- 22.** Instructions
The contractor shall carry out all instructions of the engineer or his nominee which comply with applicable laws where the site is located
- 23.** Safety
The Contractor shall be responsible for the safety of all activities on the Site.
- 24.** Quality Control
Identification of Defects
The Engineer-in-Charge or his nominee shall check the work carried out by Contractor and notify the Defects found if any. The Engineer-in-Charge or his nominee may instruct the Contractor to rectify the Defect.
- 25.** Employer's right of Rejection:
The employer shall reserve the right to reject a part portion or consignment thereof within a reasonable time after actual delivery thereof at the place of destination, if consignment is not in all respects in conformity with terms & conditions of the contract whether on account of any loss, deterioration or damage before dispatch or delivery or during transit or otherwise whatsoever

26. Removal of Rejected goods:

Rejected goods shall under all circumstances lay at the risk of the contractor from the moment of rejection and if such goods are not removed by the contractor within 21 days from the date of intimation from the Engineer-in-Charge. Engineer-in-Charge may either return to the contractor at the risk and cost of the contractor by such mode of transport as the Engineer-in-Charge may select or dispose off such material at the contractor's risk on his account and retain such portion of the sale proceeds as may be necessary to recover any expenses incurred in such disposals.

27. Deviations:

The bidder must read the tender document carefully and prepare the bid for submission. It is important to note that deviations, if any, must be brought out clearly in the technical offer, which shall be examined by DEENDAYAL PORT AUTHORITY. If the deviation statement submitted by the bidder does not contain any item, then it shall be construed that the bidder has accepted the same and no request from the Contractor, for any change, shall be accepted by DPA at a later stage. In any case, no change in specifications given in the tender agreement shall be permitted. However, only in unavoidable circumstances, DEENDAYAL PORT AUTHORITY may consider such requests from the Contractor, provided the Contractor submits its request with adequate justification.

28. Approvals:

The Engineer-in-Charge shall give specific approval in writing within 7 Days to Contractor after written submission regarding Makes of Material to be used for the Contract and Drawings, if any to be furnished by the Contractor to Engineer-in-Charge for approval. Any corrections to be suggested by Engineer-in-Charge in drawings, the days taken for rectification in drawings shall be in account of the Contractor.

29. Engagement of Labour:

The contractor shall, unless otherwise provided in the Contract, make his own arrangements for the engagement of all staff and labour, local or other, and for their payment, housing, feeding and transport.

30. Registers to be maintained at site.

1. Site order Book:

A site order book is to be maintained by the contractor at the site. The work orders and instructions written in the site order book shall be deemed to have been legally issued to the contractor shall sign each entry in the site order book as a token of his having seen the same. The site order book shall be property of the Board and shall be handed over to the Engineer-in-charge of the work in good condition on the completion of the work or

whenever required by the Engineer-in-charge or his authorized representative.

2. Hindrance Register:

Every type of hindrance arising during the execution of work should be invariably recorded in the hindrance register. The Hindrance Register is to be maintained by the Engineer In Charge at the site. The contractor shall sign each entry in the hindrance Register as a token of his having seen the same. The Hindrance Register shall be property of the Board.

31. Labour License:

The contractor will have to obtain License from Assistant Labour Commissioner (ALC), Gopalpuri, Gandhidham (Kutch), in case he is engaging ten or more workers on any day during execution of work.

32. Payments Terms for Electrical Part:

All payments shall be made in Indian rupees unless specifically mentioned.

- (i) 70% payment will be released after receipt of material at site in good condition, after obtaining insurance cover as per tender condition and after inspection & certification of the same by Third Party Inspection Agency (if required) and after inspection & acceptance of material by DPT.
- (ii) 20% of item rate after completion of erection, installation, testing and commissioning etc. and 90% of item rate for item covers only laying/fixing etc. (TPI appointed then after inspection & certification of the same by Third Party Inspection Agency).
- (iii) 10% will be released after successful completion of whole work (TPI appointed then after inspection & certification of the same by Third Party Inspection Agency) and handing over to DPT.

33. Valid Electrical Contractor license: The Contractor shall have valid Electrical Contractor's license for carrying out Electrical work of the nature involved in this tender obtained from Chief Electrical Inspector I.M. & P Department, Government of Gujarat without which the tender shall not be accepted. The Contractor shall submit certificate and copy of the license in lieu of the same for consideration. The Contractor shall also have a valid Electrical Supervisor's Certificate of competency issued from the Chief Electrical Inspector, I. M. & P. Department, Government of Gujarat or equivalent authority from the other States/Central Government.

34. In case of manufacturer/ Authorized dealer/ civil contractor who do not have valid electrical contractor license, they have to provide, their employee having electrical supervisory certificate while carrying out electrical works or The

whole electric work carried out by the Sub Contractor should have electric license & having experience of the work carried out in Government / PSU or any industries, in this case firm shall take prior approval from Chief Mechanical Engineer, Deendayal Port Authority

35. Guarantee:

35.1 The guarantee period shall be valid up to 12 (Twelve) months from the date of completion of work as per the completion certificate issued.

35.2 The Contractor shall give guarantee to the Board that the goods and services under this contract will comply strictly with the contract, shall be first class in every particular case and, shall be free from defects. The Contractor shall further give guarantee to the Board that all materials, equipment and the supplies furnished by him will be new and fit for their intended purposes.

35.3 The Board shall promptly notify the Contractor in writing of any claim arising under this guarantee. Upon receipt of such notice, the Contractor shall promptly repair or replace the defective goods and/or services at no cost to the Board. If the Contractor, having been notified, fails to rectify the defects in accordance with the contract, the Board may proceed to take such remedial action as may be necessary, at the Contractor's risk and cost.

36. Insurance:

The contract shall provide in the joint names of the employer and the contractor, insurance cover from the start date to the end of guarantee period for the following events which are due to the contractor risk:

- a) loss of or damage to the works, plan and materials
- b) loss of or damage to equipment
- c) loss of or damage of property (except the works, plant, materials equipment) in connection with contract, and
- d) personal injury or death

Policies and certificates for insurance shall be delivered by the contractor to the engineer in charge or his nominee before the commencement of work. All such insurances shall provide for compensation to be payable to the types and proportions of currencies required to be rectify the loss or damage incurred.

Alterations to the terms of insurance shall not be made without the approval of the engineer in charge or his nominee.

All the materials shall stand insured from the time of arrival at site till commencement of erection against fire, pilferage, damage and against natural calamities for the value of 90% of each item.

During erection and till the work is completed and satisfactory taken over by the D.P.T after testing the materials shall stand covered by suitable erection insurance also for the value of 110% of the item. The charges for the insurance shall be borne by the Contractor.

37. LIQUIDATED DAMAGES

Liquidated Damages shall be levied at the rate of 0.5% (per week) of contract value for delay of each week or part thereof subject to maximum of 10% of contract value in the event of failure to complete the work in the stipulated period of completion or such extension as may be granted.

38. Variation in Quantities of Schedule – B:

The overall as well as individual variations shall be $\pm 30\%$ in quantity for which the rate quoted by the bidder and accepted by the employer shall be applicable.

39. The contractor shall not deposit any materials at such a place that may cause inconvenience to the public or staff or nearby offices.

40. The Contractor shall execute the work in such a way that not to cause inconvenience to the public or staff or nearby offices and not to cause hindrance to traffic. Necessary barricading shall be done by the contractor at his own cost if required.

41. For the purpose of measurements, the method prescribed in standard code of measurements of the concern work shall be applicable.

42. Income-tax and surcharge as applicable will be deducted from the bill while making payment to the contractor for carrying out the work and only net amount shall be paid to the contractor.

43. All tools, plants, scaffolding ladder etc. and other machinery etc. required temporary for the purpose of execution of work will have to be arranged by the contractor at his own cost and storing of such tools, plants etc. will have to be made by him.

44. All the rules and regulations governing DPT will be applicable.

45. After completion of the work, the site should be neatly cleaned by the contractor.

46. The contractor shall ensure not to cause any damages to the port properties in the vicinity of work site during execution of work. If any damage occurs due to workmen/ machinery of the contractor, the contractor has to make good the loss / damage at his cost.

47. GST will be reimbursed as per actual.

48. The contractor/service provider/supplier etc. has to ensure timely and proper filling of GSTR1 so that Deendayal Port Trust can avail input tax credit in timely manner. In case DPT not allowed input tax credit due to failure on part of the contractor/service provider/supplier etc., it will be a financial loss to the DPT and therefore same shall be recovered from the payment/deposit of the contractor/service provider/supplier.

49. Deleted

50. Taxes:

GST Clause:

The contractor shall quote the price exclusive of GST. The contractor shall quote prevailing GST rate separately, which shall be reimbursed by DPT after ascertaining necessary compliance as per Goods & Service Tax, 2017. All other duties, taxes, cesses applicable if any, shall be borne by the contractor.

Deduction of Income-Tax and GST:

Income-Tax deductions and surcharge and GST+TDS under GST Act as applicable thereon shall be made good while making payments due to the contractor for carrying out the work and only net amount shall be paid as directed by the Central Board of Direct Taxes, Ministry of Finance, Government of India.

Tax:

The rates quoted (except GST) by the contractor shall be deemed to be inclusive of the taxes, duties etc. which the contractor will have to pay for the performance of this contract. The employer will perform such duties in regard to the deduction of such taxes at sources as per applicable law.

51. The contractor shall supply the materials of only the particular bands/Make specified in the tender. If same are not available in the market he may take approval of EIC for all related project material prior to start of the work

52. All tools, plants, scaffolding ladder etc. and other machinery etc. required temporary for the purpose of execution of work will have to be arranged by the contractor at his own cost and storing of such tools, plants etc, will have to be made by him.

53. After completion of the work, the site should be neatly cleaned by the contractor.

54. All the work shall be carried out to the entire satisfaction of Engineer in Charge.

Signature & Seal of Contractor

**Executive Engineer (E)
Deendayal Port Authority**

Approved Make List for Electrical Items

Sr. No.	Description	Recommended Makes
1	HT VCB	SIEMENS / CROMPTON GREAVES/ABB/Schneider
1(a)	HV Gas Insulated Breakers	SIEMENS /Schneider/ABB
2	POWER TRANSFORMERS	VOLTAMP/CROMPTON GREAVES /BHARAT BIJLEE/ BHEL/ SIEMENS/ ABB/ Schneider/T&R
3	DISTRIBUTION TRANSFORMERS	EMCO/KIRLOSKAR/PATSON/VOLTAMP/ ABB / Schneider / T&R
4	RESIN CAST TRANSFORMERS	
	A) RESIN CAST IMPREGNATED	VOLTAMP / KIRLOSKAR / EMCO
	B) DRY CAST	VOLTAMP/KIRLOSKAR/EMCO
5	HT XLPE CABLES	POLYCAB/TORRENT/RPG ASIAN/ /GLOSTER/ UNISTAR/ UNISTAR/KEI/FINOLEX/HAVELS
6	LT XLPE CABLES	POLYCAB/TORRENT/RPG ASIAN/ / RALLISON/PRIMECAB/ HAVELLS/ UNISTAR/AVOCAB / ADCAB
7	LT ACB	SIEMENS/L&T/SCHNEIDER/C&S
8	PROTECTION RELAYS	AREVA/L&T/SIEMENS/ABB/C&S
9	LT PANEL	CPRI APPROVED
10	CHANGE OVER SWITCH	SIEMENS/L&T/ABB/C&S/SCHNIDER/ LEGRAND / INDOASIAN
11	SFU FOR MAIN LT DISTRIBUTION PANELS	SIEMENS/L&T/ABB/C&S
12	SFU FOR DISTRIBUTION PANELS & FEEDER PILLERS	SIEMENS/L&T/ABB/C&S/ SCHNEIDER/ LEGRAND/ INDOASIAN/HAVELLS
13	MCCB FOR MAIN LT DISTRIBUTION PANELS	SIEMENS/L&T/ABB
14	MCCB FOR DISTRIBUTION PANELS AND FEEDER PILLERS	SIEMENS/L&T/ABB/C&S/ SCHNIDER/ LEGRAND/ INDOASIAN/HAVELLS
15	MCB/ELCB/RCCB/ RCCBO FOR MAIN LT DISTRIBUTION PANELS	SIEMENS/HAGER L&T/ABB
16	MCB FOR DISTRIBUTION PANELS AND FEEDER PILLERS	SIEMENS/L&T/ABB/C&S/ SCHNEIDER/ LEGRAND/ INDOASIAN/ HAVELLS/ STANDARD
17	MCB DISTRIBUTION BOARD	STANDARD / HENSEL/LEGRAND / INDOASIAN / HAVELLS

18	MULTI FUNCTION DIGITAL METER FOR MAIN LT DISTRIBUTION PANELS/DIGITAL KWH METERS	L&T/ENERCON/SECURE/L&G/ RISHABH
19	ANALOG VOLT/AMPARE METER FOR DISTRIBUTION PANELS AND FEEDER PILLERS	RISHABH/AE/ENERCON/L&T
20	SLECTOR SWITCH FOR VOLTMETER/AMPARE METER	L&T/SIEMENS/C&S
21	POWER CONTACTOR & OVER LOAD RELAYS	L&T/SIEMENS/ABB
22	QUARTZ TIME CLOCK SWITCH	L&T/INDOASIAN/SIEMENS
23	PVC WIRE WITH COPPER CONDUCTOR	RR KABEL / KEI / POLYCAB/MILEX/GUJCAB/ STANDARD / FINOLEX / ANCHOR
24	FLUSH TYPE SWITCHES, SOCKETS, HOLDERS AND CEILING ROSES & ELECTRONIC REGULATORS	ANCHOR/MK/NORTHWEST/VINAY /PANAMA / HAVELLS
25	DOOR BELLS/CALL BELLS	ANCHOR/LEGEND/MK/NORTHWEST
26	MODULAR SWITCHES, SOCKETS, PLATES & BOXES	ANCHOR / MK / NORTHWEST / LEGRAND /HAVELLS / INDOASIAN / SIMENS.
27	PVC CONDUIT/OVAL CONDUIT & CASSING CAPPING AND ACCESSORIES	PRECISION/VULCAN/FINOLEX/ GARWARE/ RESTOPLAST/ SWASTIK / BPI
28	GLS LAMPS & FLUORESCENT LAMPS	PHILIPS / BAJAJ / WIPRO / CROMPTON GREAVES / OSRAM / SURYA ROSHNI / GE
29	HPSV, HPMV & METAL HELIDE LAMPS	PHILIPS / BAJAJ / WIPRO / CROMPTON GREAVES / OSRAM / SURYA ROSHNI / GE
30	IGNITORS FOR HPSV, METAL HELIDE LAMPS	PHILIPS / BAJAJ / WIPRO / CROMPTON GREAVES / OSRAM / SURYA ROSHNI / GE
31	LUMINARIES	PHILIPS / BAJAJ / WIPRO / CROMPTON GREAVES / OSRAM / SURYA ROSHNI / GE/C&S
31a	LED LUMINARIES	Philips/Bajaj/Wipro/CG/Surya/Pyrotech/Syska/Nessa/C &S having surge Protection $\geq 10\text{KV}$ for fittings & internal Surge Protection for Driver of $\geq 4\text{KV}$, LED Chip only OSRAM/CREE/Philips Lumileds/Citizen/ with LM-79,80 CERTIFICATION

32	CEILING FANS	BAJAJ/ORIENT/USHA/CROMPTON GREAVES / ALMONARD/GEC
33	WALL MOUNTING FANS	BAJAJ/ORIENT/USHA/CROMPTON GREAVES / ALMONARD/GEC
34	EXHUAUST FANS	BAJAJ/ORIENT/USHA/CROMPTON GREAVES / ALMONARD/GEC
35	HEAVY DUTY INDUSTRIAL WALL MOUNTING FANS	BAJAJ/ORIENT/USHA/CROMPTON GREAVES / ALMONARD/GEC or its equivalent
36	WATER COOLER	VOLTAS/SHRIRAM USHA/BLUE STAR
37	AIR CONDITIONERS	VOLTAS/CARRIER/BLUESTAR/USHA/ HITACHI/LG/ SAMSUNG/ONIDA
38	REFRIGERATORS	VOLTAS / CARRIER / BLUESTAR / USHA / HITACHI / LG / SAMSUNG / WHIRLPOOL
39	VOLTAGE STABILIZER	VEELINE / CAPRI
40	INVERTERS for General Purpose	LUMINOUS / MICROTEK /SUKAM
41	D.G. SETS	
	A) ENGINE	CUMMINS/GREAVES/KIRLOSKAR/ CATERPILLAR /ASHOK LEYLAND /VOLVO
	B) ALTERNATOR	STAMFORD/CROMPTON GREAVES /JYOTI/ KIRLOSKAR ELECTRIC
42	ELECTRIC MOTOR	ALSTOM/CROMPTON GREAVES /SIEMENS/ KIRLOSKAR/ABB
43	WATER PUMPS	SWASTIK / KSB
44	WATER GEYSER	BAJAJ/USHA / CROMPTON GREAVES / SPHEREHOT / RACOLD
45	LUGS & CABLE GLANDS	DOWELLS / JAINSON / BRACO
46	Solar Panels	LONGI / TRINA / GOLDI / VIKRAM / REWNYSIS / RAYZON / WAAREE or equivalent subject to submission of relevant documents of successful operation in various Government Organisations.
47	INVERTERS for Solar Power Plant	LUMINOUS / MICROTEK /EVVO /LENTO/DELTA/ABB / HITACHI /HUAWEI / SUNGROW or equivalent subject to submission of relevant documents of successful operation in various Government Organisations.

Executive Engineer (Electrical)
Deendayal Port Authority