



DEENDAYAL PORT AUTHORITY

ISO 9001:2008 | ISO 14001 | ISPS Compliant Port



Office of Executive Engineer (Electrical), Ground Floor, Nirman Building, New Kandla, Kutch,

Pin Code 370210.

No.: EL/AC/ EOI/Re-Wiring of G'puri Colony/

Date: 19/12/2024

EXPRESSION OF INTEREST [EOI]

"Residential re-wiring work of Gopalpuri Colony"

(This EOI is issued to elicit Expression of Interest from the parties interested in the work and does not constitute any binding commitment from the Deendayal Port Authority to proceed with the work or invite any or all the parties in the subsequent bidding process. The Open Tenders will be issued subsequently.)

Executive Engineer (Electrical), DPA invites Expression of Interest for the work of "Residential re-wiring work of Gopalpuri Colony" from the reputed firms from those who have executed similar work in Government/public sectors and other leading private organizations. The Expression of Interest (EOI) documents containing details of Technical Specifications & Approved Make List are enclosed herewith.

The interested firms are requested to submit their expression of interest for the said work in BOQ format as enclosed at Annexure I. The completed EOI (Expression of Interest) shall be submitted to the office of the undersigned on or before 26/12/2024. A soft copy of EOI is also acceptable through e-mail Id xenedpa@gmail.com & deepak.hazra@deendayalport.gov.in

Sd/-

Executive Engineer (E)
Deendayal Port Authority

SCHEDULE-B

ELECTRICAL DIVISION

Name of Work :- Residential re-wiring work of Gopalpuri Colony

S/N	Description	Qty.	Unit	Rate (In Rs.)	Amount (In Rs.)
1	Supply of 11/0.433 KV, 50 Hz., 250 KVA outdoor type Level-1 complied distribution transformer, complete with its accessories & protective, measuring devices and as per the technical specification no. 1.	1	No.		
2	Supply of 11/0.433 KV, 50 Hz., 500 KVA indoor type Level-1 complied distribution transformer, complete with its accessories & protective, measuring devices and as per the technical specification no. 2.	2	No.		
3	Installation, Testing and Commissioning of 250 KVA outdoor type and 500 KVA indoor type distribution transformers as per the technical specification no. 3.	3	No.		
4	Supply, Installation, Testing and Commissioning of lightning arrestor with its accessories and earthing for buildings as per the Technical Specification No. 4.	30	No.		

S/N	Description	Qty.	Unit	Rate (In Rs.)	Amount (In Rs.)
5	Supply, Installation, testing & commissioning of 6 mtr. High octagonal GI pole with single arm of 1000 mm including all accessories and lighting fixtures (80 watt) for walkway illumination and as per the technical specification no. 5.				
	(a) Supply	40	No.		
	(b) Erection, testing and commissioning.	40	No.		
6	Supply, Installation, testing & commissioning of 4 mtr. High octagonal GI pole with single arm of 1000 mm including all accessories and lighting fixtures (60 watt) for walkway illumination and as per the technical specification no. 6.				
	(a) Supply	41	No.		
	(b) Erection, testing and commissioning.	41	No.		
7	Providing & fixing following concealed wiring for Three/Single phase sub-circuit from the main switch /meter/DBs /MCBs to the switch board with 5X2.5 / 3x2.5 Sq. mm. copper conductor to be used as phase, neutral and earth viz. red, yellow, blue, black & green in colour wire earthing as per the Technical Specification No. 7.				
	(a) Three Phase – 2944 Mtrs.	2944	Mtrs.		
	(b) Single Phase – <u>4844</u> Mtrs.	4844	Mtrs.		

S/N	Description	Qty.	Unit	Rate (In Rs.)	Amount (In Rs.)
8	Providing & fixing following Surface wiring for Three/Single phase sub-circuit from the main switch /meter/DBs /MCBs to the switch board with 5X2.5/3x2.5 Sq.mm. copper conductor to be used as phase, neutral and earth viz. red, yellow, blue, black & green colour wire as per the Technical Specification No. 8. (a) Three Phase – 4580 Mtrs. (b) Single Phase – <u>7584</u> Mtrs.	4580 7584	Mtrs. Mtrs.		
9	Providing and Fixing concealed wiring for light/tube/bell point with PVC insulated single core standard 1.5 Sq.mm. copper conductor wire with modular switch of 6/10 Amp., angle holder, ceiling rose with its modular plate & board and as per the Technical Specification No. 9.	5100	Nos.		
10	Providing and Fixing Surface wiring for light/tube/bell point with PVC insulated single core standard 1.5 Sq.mm. copper conductor wire with modular switch of 6/10 Amp., angle holder, ceiling rose with its modular plate & board as per the Technical Specification No. 10.	9186	Nos.		

S/N	Description	Qty.	Unit	Rate (In Rs.)	Amount (In Rs.)
11	Providing and Fixing concealed wiring for Fan point with PVC insulated single core standard 1.5 Sq.mm. copper conductor wire, twin module step cut electronic fan regulator, modular switch along with its modular plate & board & all accessories as per the Technical Specification No. 11.	708	Nos.		
12	Providing and Fixing Surface wiring for Fan point with PVC insulated single core standard 1.5 Sq.mm. copper conductor wire twin module step cut electronic fan regulator, modular switch along with its modular plate & board & all accessories as per the Technical Specification No. 12.	1299	Nos.		
13	Providing and fixing concealed wiring with modular switch along with its modular plate & board for 6A/10A X220 Volt 50 Hz, AC. as per the Technical Specification No. 13.				
	Modular Full plug point.	1305	Nos.		
	Modular Half Plug Point.	2147	Nos.		

S/N	Description	Qty.	Unit	Rate (In Rs.)	Amount (In Rs.)
14	Providing and fixing surface wiring with modular switch along with its modular plate & board for 6A/10AX220 Volt 50 Hz, AC as per the Technical Specification No. 14.				
	Modular Full plug point.	1949	Nos.		
	Modular Half Plug Point.	4521	Nos.		
15	Supply & fixing of 16 A/20A, 5 in 1 modular type switch socket along with modular plate & board for concealed/surface as per the Technical Specification No. 15.	2869	Nos.		
16	Supply & fixing of 6A/10 A, 5in1 modular type switch socket with modular plate & board for concealed/surface as per the technical specification no. 16.	1146	Nos.		
17	Providing and fixing concealed/surface wiring, Modular 25A X 220 V, AC with individual Switch & Socket with its modular plate & board along with all necessary accessories as per the Technical Specification No. 17.	1382	Nos.		

S/N	Description	Qty.	Unit	Rate (In Rs.)	Amount (In Rs.)
18	Supply & fixing of 10 Watt LED Bulk Head Light fixture with all accessories as per the Technical Specification No. 18.				
(a)	Supply	436	Nos.		
(b)	Fixing	436	Nos.		
19	Supply & installation of following type of distribution board complete with SP, DP, FP MCB as per the technical specification no. 19.				
	(a) 8 way SPN DB	439	No.		
	(b) 12 way SPN DB	134	No.		
(i)	10 Amp., 220/250 V SP MCB 'C' curve				
	Supply	2476	No.		
	Fixing	2476	No.		
(ii)	20 Amp. 220/250 V DP MCB 'C' curve				
	Supply	2544	No.		
	Fixing	2544	No.		
(iii)	32 Amp. 220/250 V DP MCB 'c' curve				
	Supply	439	No.		
	Fixing	439	No.		
(iv)	40 Amp. 415/440 V 4Pole (TPN) 'c' curve.				
	Supply	134	No.		
	Fixing	134	No.		

S/N	Description	Qty.	Unit	Rate (In Rs.)	Amount (In Rs.)
20 (a) (b)	25 Amp. DP RCCB Supply Fixing As per technical specification no. 20.	439 439	Nos. Nos.		
21 (a) (b)	40 Amp. 4 pole RCCB Supply Fixing As per technical specification no. 21.	134 134	Nos. Nos.		
22	Supply at site 4 Core X 16 sq.mm. cable as per technical specification no. 22.	6000	Mtrs.		
23	Supply at site 4 Core X 35 sq.mm. cable as per technical specification no. 23.	4000	Mtrs.		
24	Laying, Testing and Commissioning of HT/LT XLPE cable of various sizes through following and as per technical specification NO. 24.				
24 (a)	Laying of 4 Core LT XLPE cable upto 35 sq.mm. by excavation in hard/soft/RCC as per site situation and as per technical specification no. 24(a).	6000	Mtrs.		
24 (b)	Laying of 4 Core LT XLPE cable upto 35 sq.mm. by HDD method as per site situation and as per technical specification no. 24 (b).	2000	Mtrs		

S/N	Description	Qty.	Unit	Rate (In Rs.)	Amount (In Rs.)
24 (c)	Fixing of 4 Core LT XLPE cable upto 35 sq.mm. on wall by suitable size of GI clamps fixed on wall at a distance of 0.5Mtr with all materials & labours and as per technical specification no. 24 (c).	2000	Mtrs		
25	Removal of existing single/three phase energy meter and redressing, termination of the wires properly as directed by Engineer-in-Charge with the new system to entire satisfaction of EIC as per the technical specification no. 25.	573	Nos		
26	Preparation earthing station, chemical treated back filled compound earthing system with Pipe-In-Pipe 12.7- 30 mm Dia GI type 3 Mtr Depth, Maintenance free. as per Technical Specification No. 26	210	Nos		
27	Providing & connecting following type earth wire for earth station to Main DB / Meter/SB along with hardware's as per requirement as per technical specification no. 27 a) 8 SWG GI earthing wire with heat shrink sleeve.	5000	Mtrs.		
28	Supply and fixing of 20 Watt Gate light fixture with all accessories as per the technical specification no. 28.	104	Nos.		
29	Dismantling, removal and shifting of existing deteriorated pole including its accessories as per technical specification No. 29.	LOT	LOT		

S/N	Description	Qty.	Unit	Rate (In Rs.)	Amount (In Rs.)
30	Supply, Installation, Testing & Commissioning of concealed/surface wiring as per site situation for inverter connecting all the main rooms light & fans, complete with labour and material and as per technical specification no. 30.	573	Nos.		
31	TV Point Wiring SITC of Modular type TV signal single socket complete with its modular plate & board along with all necessary accessories as required and as per the technical specification no. 31.	591	Nos.		
32	Supply & fixing of Modular type 6/10A, 1 way, Bell Switch with embossed bell mark of 220 V-50 Hz. AC	573	Nos.		
33	Supply & fixing of Ding Dong Bell 220 V, 50 Hz. AC	573	Nos.		
				TOTAL	
(Rupees)					
(NOTE: The rates should be inclusive of all taxes, duties, fees, cess etc and all incidental charges; but exclusive of Goods & Service Tax).					

IMPORTANT NOTES

- The work shall be carried out strictly as per Electrical Inspectorate standards. The quarters are already allotted, thereby the quarter re-wiring is to be started in the morning and same shall be completed by evening with all test and with all safety measures. Hence submit EOI accordingly. The work shall be intermittent type.
- All materials used shall be of IS approved and ISI marked.

- Contractor shall assess the quantities of all materials actually required as per site conditions before supply and get approval from the Executive Engineer (Elect.).
- Item wise tentative quantities are given in Schedule-B are subject to change as per site requirement. Payments will be made for actually executed and measures quantities at site at agreed rates. Balance material after final measurement, if any, supplied by the contractor, shall be taken back and will not be considered for payment.
- DPA has the right to delete any item from the scope of contract, or add new items in the contract, as per requirement at site, and to supply any material directly, and in such cases only installation, testing and commissioning need to be executed by the contractor.
- No claim for escalation of rates due to increase or decrease in quantities will be considered.
- Bidder should inspect the site for assessing the length of circuits from DB to Switch Boards, and from Switch Boards to Points for Point and circuit wiring. This will help bidders to quote for competitive rates
- Providing surface/concealed point wiring with modular light point /ceiling fan point/bell point/6A/10A /16A/20A socket outlet / Geyser/ motor/ refrigerator/Invertor wiring, etc., as per specifications of tender documents. The scope shall include providing the tags of wires inside casing capping for bunching to avoid hanging of wires at the interval of 600 mm and as directed by Engineer-in-Charge.

**Seal & Signature
Contractor**

Sd/-

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

Technical specifications

(1) Technical Specification for Item No. {1} :

The work include supply at site, Level-1 complied Oil cooled Distribution transformer as per IS: 2026 of voltage Ratio 11/0.433 KV, 50 Hz., AC 250 KVA outdoor type with off load tap changer. The rate shall be inclusive of loading/Unloading & transportation upto site within DPA premises. The technical details are as below:

Sr. No.	Description	Particulars
1	Type of Transformer	3 Phase Oil filled suitable for outdoor Installations.
2	Normal Continuous rating(KVA)	250 KVA
3	No Load Voltage Ratio	11/0.433 KV
4	Highest Voltage	12KV
5	Winding material	Copper
6	Connection a)High voltage	Delta
	Low voltage	Star
7	Vector Group	Dyn 11
8	Reference Standard	IS : 2026
9	Tapping on HV side for giving voltage variation of HV	Standard taps
10	Type of Tap changer	Off load tap changer
11	Temperature rise of Oil/WDG by thermometer/Resistance method over specified ambient temp of 50°C. at principal tap	50/65°C
12	Type of cooling	Oil Natural Air Natural
13	No load losses at 75°C at normal tap	(MAX) or as per standard losses
14	Full load losses at 75°C at normal tap	(MAX) or as per standard losses
16	Impedance at rated current at 75°C at normal tap.	As per standard tolerance)
17	Paint	PU Paint as per IS 5
18	Hardware above M10 size	Hot dipped Galvanized material
19	Hardware below M10 size	Stainless steel 304
20	All Valve material	Gun metals (Brass Material)
21	Epoxy Bushing	As per IS standard
22	Porcelain Bushing	GE make
23	Erection of Transformer	In contractor scope
24	Commissioning of Transformer	In contractor scope
25	Oil filtration	In contractor scope
26	HV and LV Cable Connection	In contractor scope
27	Testing of transformer before charging	In contractor scope

28	Charging of transformer	In contractor scope
29	List of fittings/Accessories	HV Bushing with metal parts, LV Bushing with metal parts Additional Neutral bushing with metal parts. Prismatic Oil level gauge Oil temperature Indicator with alarm and trip contact Winding temperature Indicator with alarm & trip contact Flat rollers Inspection covers Buchholzs relay with alarm & trip contact and 1Noshut off valve Marshalling box Radiator valves Conservator with air release plug Radiators Explosion vent with double diaphragm Earthing terminals Silica gel breather (Flange) Thermometer pockets Lifting lugs Jacking pads Bottom drain cum filter valve 1 No. Top filter valve 1 No. Oil surge relay etc.

(2) Technical Specification for Item No. {2} :

The work include supply at site, Level-1 complied Oil cooled Distribution transformer as per IS: 2026 of voltage Ratio 11/0.433 KV, 50 Hz., AC 500 KVA indoor type with off load tap changer. The rate shall be inclusive of loading/Unloading & transportation upto site within DPA premises. The technical details are as below:

S/N	Description	Particulars
1	Type of Transformer	3 Phase Oil filled suitable for indoor Inst.
2	Normal Continuous rating(KVA)	500 KVA
3	No Load Voltage Ratio	11/0.433 KV
4	Highest Voltage	12KV
5	Winding material	Copper
6	Connection a)High voltage	Delta
	Low voltage	Star
7	Vector Group	Dyn 11
8	Reference Standard	IS : 2026

9	Tapping on HV side for giving voltage variation of HV	Standard taps
10	Type of Tap changer	Off load tap changer
11	Temperature rise of Oil/WDG by thermometer/Resistance method over specified ambient temp of 50°C. at principal tap	50/55°C
12	Type of cooling	Oil Natural Air Natural
13	No load losses at 75°C at normal tap	(MAX) or as per standard losses
14	Full load losses at 75°C at normal tap	(MAX) or as per standard losses
16	Impedance at rated current at 75°C at normal tap.	As per standard tolerance)
17	Paint	PU Paint as per IS 5
18	Hardware above M10 size	Hot dipped Galvanized material
19	Hardware below M10 size	Stainless steel 304
20	All Valve material	Gun metals (Brass Material)
21	Epoxy Bushing	As per IS standard
22	Porcelain Bushing	GE make
23	Erection of Transformer	In contractor scope
24	Commissioning of Transformer	In contractor scope
25	Oil filtration	In contractor scope
26	HV and LV Cable Connection	In contractor scope
27	Testing of transformer before charging	In contractor scope
28	Charging of transformer	In contractor scope
29	List of fittings/Accessories	HV Bushing with metal parts, LV Bushing with metal parts Additional Neutral bushing with metal parts. Prismatic Oil level gauge Oil temperature Indicator with alarm and trip contact Winding temperature Indicator with alarm & trip contact Flat rollers Inspection covers Buchholzs relay with alarm & trip contact and 1Noshut off valve Marshalling box Radiator valves Conservator with air release plug Radiators Explosion vent with double diaphragm Earthing terminals Silica gel breather (Flange) Thermometer pockets Lifting lugs

		Jacking pads Bottom drain cum filter valve 1 No. Top filter valve 1 No. Oil surge relay etc.
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(3) Technical Specification for Item No. {3} :

Installation, Testing and Commissioning of 1 no. 250 KVA outdoor type transformer and 2 nos. 500 KVA indoor type transformer at various locations.

Installation for item no. 1 & 2 is as under:-

Installation work includes removal of existing transformer from the site and same should be shifted safely as directed by EIC. The hydra & tractor trolley is to be arranged by the contractor itself and for which no extra amount will be paid. Thereafter new transformer is to be installed on the existing platform if require plastering to foundation is done. This also includes end termination of 2 no. HT cable and lugging, crimping, gladding & LT existing cable by relugging. Apart from same 2 nos. neutral grounding of copper flat 50 X 6 with conventional earth station is also in the scope of contractor. Similarly, 2 nos. body earthing alongwith 50 X 6 GI flat with conventional earthing is also to be done at site, similarly 4 nos. earthing chamber with cover is to be installed and the values of earthing shall be written on the same. During commissioning of transformer by checking each and every item thoroughly, thereafter releasing the air of oil level of transformer to be checked alongwith breather and thereafter transformer control wiring of winding temperature and Buchholzs relay is to be done in the existing panel, If wiring or accessories is not healthy or incomplete, same is to be attended by contractor for healthy tripping under overcurrent, earth fault, low oil level alarm, temp high etc. For 250 & 500 KVA transformer.

This also includes soak pit tank as per IS standard dimensions alongwith its drainage pipe.

(4) Technical Specification for Item No. {4} :

- (A) Ion cell height : 145.46 mm
 Ion cell diameter : Ø 140 mm Capture tip diameter : Ø 58 mm
 r(m) : 10 x I (N FC-17-102 Annex C)

1. Protection level 20 m Level I - 79
2. Protection level 30 m Level II - 86

(B)

Length	:	465 mm
Material	:	SS Stainless Steel
Diameter of the ionic cell	:	200 mm Diameter of lightning conductor : 20 mm (Transparent-monolith)
Trigger	:	Neomidium
Principle of operation	:	PDC / PDA (E.S.E)
Standart	:	CPRI Tested
Latest version		
AT	:	= 60 μ s
RP (Radius protection)	:	= 107 meter

The work includes supply, installation, testing and commissioning of cloud LA as per given specifications. However, if any minor change is required same can be clarified in pre-bid meeting. This includes installation of LA of size 145.46 mm. IN Cell height with dia of 140 mm and the extension of shaft will be 456 mm length or as per site situation. The connected size is 25 X 6 mm width and same is to be fixed on wall with proper insulator between wall and GI flat. The earth pit of LA shall be 5 mtr. Away from the building and same is to be connected and trial test with necessary tools is to be done in presence of EIC. All the required materials and ancillary items in the scope of contractor and approved drawing is to be taken before commencing the work.

(5) Technical Specification for Item No. {5} :

(a) Supply

This includes Supply of 6 mtr GI Octagonal Pole of approved make. Average thickness of galvanization – 80 Microns & above, thickness of sheet 3 mm, thickness of base plate 12 mm, bottom diameter 130 mm, top diameter 70 mm, size of base plate 200 X 200 mm, PCD of foundation bolt 200 mm along with its nut and washer, bolt diameter 16 mm, Bracket – single arm for mounting the light fittings. The pole shall be GI hot dipped galvanized with 80 microns & above coating. This also includes supply & Fixing of 80 W cool white LED street light fitting with IP 65 of approved make on each pole (Fitting may be approved before procurement) along with 6 Amp. 'C' curve single pole MCB in the existing pocket of pole. This also includes single phase wiring of 2.5 sq.mm. 3 core flexible copper wire to be connected from luminary to main MCB, complete with labour and material.

The rate shall inclusive of transportation and unloading at site of work etc.

(b) Erection, Testing & Commissioning

This includes erection testing & commissioning of each pole on RCC foundation including the cost of foundation including tore steel, sand, grit and cement, foundation bolts, excavation & back filling and Required T&P complete in all respect. After the erection of pole fixing the lighting fixtures and its aiming is in the scope of the contractor. This also includes inception of 2 nos. HDPE pipe of 50 mm in foundation for connecting main armoured incoming and outgoing cable.

The work includes all labour & material, tools & tackles, transportation to & from site, loading & unloading and whatever earth moving equipments are required to complete the job and as directed by Engineer-In-Charge.

(6) Technical Specification for Item No. {6} :

(a) Supply

This includes Supply of 4 mtr GI Octagonal Pole of approved make. Average thickness of galvanization – 80 Microns & above, thickness of sheet 3 mm, thickness of base plate 12 mm, bottom diameter 130 mm, top diameter 70 mm, size of base plate 200 X 200 mm, PCD of foundation bolt 200 mm along with its nut and washer, bolt diameter 16 mm, Bracket – single arm for mounting the light fittings. The pole shall be GI hot dipped galvanized with 80 microns & above coating. This also includes supply & Fixing of 60 W cool white LED street light fitting with IP 65 of approved make on each pole (Fitting may be approved before procurement) along with 6 Amp. 'C' curve single pole MCB in the existing pocket of pole. This also includes single phase wiring of 2.5 sq.mm. 3 core flexible copper wire to be connected from luminary to main MCB, complete with labour and material.

The rate shall inclusive of transportation and unloading at site of work etc.

(b) Erection, Testing & Commissioning

This includes erection testing & commissioning of each pole on RCC foundation including the cost of foundation including tore steel, sand, grit and cement, foundation bolts, excavation & back filling and Required T&P complete in all respect. After the erection of pole fixing the lighting fixtures and its aiming is in the scope of the contractor. This also includes inception of 2 nos. HDPE pipe of 50 mm in foundation for connecting main armoured incoming and outgoing cable.

(7) Technical Specification for Item No. {7} :

The item includes providing & fixing concealed wiring for three/single phase sub-circuit from the existing main switch /meter /DBs / MCBs to the switchboard with Flame Retardant FRLS, 1100 Voltage grade, single core stranded copper conductor wire of size 2.5 sq.mm. 3 wire viz. red for phase, black for neutral & green for earth to be laid in existing concealed PVC Pipe. Similary for 3 phase network 5 wires of 2.5 sq.mm. viz. red, yellow, blue for 3 phase and black for neutral, green for earth by removing old wire by suitable tools & insert the new wiring for sub circuit. However, if any obstruction occurred during inception of wires the same space may be cleaned and new pipe is to be inserted. This also includes finishing of wall plaster by applying wall putty and original shade colour with complete labour and material.

If required in case of non-tracing the circuit, then sub circuit will be provide through PVC Round Pipe with IS: 9537 (Part-III) of size 32 mm & above 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 groove shall be prepared by contractor on wall/ceiling as case may be & the conduit pipe shall be laid through prepared groove and in case of new construction the pipes shall be laid during reinforcement work. After laying of pipe the groove 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.

The old material which will be removed from the premises is to be deposited as directed by JE (Elect.) and a register shall be maintained for the same.

(8) Technical Specification for Item No. {8} :

The item includes providing & fixing surface wiring for three/single phase sub-circuit from the existing main switch /meter /DBs / MCBs to the switchboard with Flame Retardant FRLS, 1100 Voltage grade, single core stranded copper conductor wire of size 2.5 sq.mm. 3 wire viz. red for phase, black for neutral & green for earth to be laid in existing casing capping. Similary for 3 phase network 5 wires of 2.5 sq.mm. viz. red, yellow, blue for 3 phase and black for neutral, green for earth by removing old wire by suitable tools & insert the new wiring for sub circuit. However, if any obstruction occurs during the wiring, the same space may be cleaned and new casing capping of size 32 mm & above is to be fixed. This also includes finishing of wall plaster by applying wall putty and original shade/colour with complete labour and material.

If required in case of non-tracing the circuit, then sub circuit will be providing through casing capping of size 32 mm & above. The 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.

The old material which will be removed from the premises is to be deposited as directed by JE (Elect.) and a register shall be maintained for the same.

(9) Technical Specification for Item No. {9} :

The item includes providing & fixing **concealed wiring for Moudlar light/tube/bell point** from switchboard with Flame Retardant FRLS, 1100 Voltage grade, single core stranded copper conductor wire with IS: 694/1990 of size 1.5 sq. mm. for phase with red colour & neutral wire with black colour and 1.5 Sq.mm continuous stranded copper conductor green wire for earth to be laid in existing concealed pipe.

If required in case of non tracing the circuit, then wiring for light/tube/bell point from switchboard will be provide through PVC Round Pipe with IS: 9537 (Part-III) 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 conduit groove shall be prepared by contractor on wall/ceiling after laying of conduit pipe, the groove 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 modular type 6A/10A x 240V latest modular type as per approved list and to meet specifications of IS: 3854 along with its modular accessories for angle holder and ceiling rose including its plates & GI boxes. 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.

(10) Technical Specification for Item No. {10} :

The item includes providing & fixing **surface wiring for Modular light/tube/bell point** from switchboard with Flame Retardant, 1100 Voltage grade, single core stranded copper conductor wire with IS: 694/1990 of size 1.5 sq. mm. for phase with red colour & neutral wire with black colour and 1.5 Sq.mm continuous stranded copper conductor green wire for earth to be laid through heavy duty flat Casing Capping strip and other accessories such as Tee, junction box, inspection bends, elbow etc. of approved make as directed by Engineer-in-Charge. The PVC Casing Capping strip shall be fixed rigidly on wall/ceiling with suitable size heavy duty PVC saddle set with base,

clamp & screw at the interval of 0.5 meter. The work consists providing & fixing of Bell Push/Flush type SP switch 6A/10A x 240V, latest modular type as approved make list and to meet specifications of IS: 3854 along with its modular accessories for angle holder and ceiling rose including its plates & GI boxes. 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.

(11) Technical Specification for Item No. {11}

The item includes providing & fixing **concealed wiring for Modular fan point** from existing switchboard with Flame Retardant, 1100 Voltage grade, single core stranded copper conductor wire with IS: 694/1990 of size 1.5 sq. mm. for phase with red colour & neutral wire with black colour and 1.5 Sq.mm continuous stranded copper conductor green wire for earth to be laid through in existing concealed Pipe.

If required in case of non tracing the circuit then wiring for Fan point will be provide through PVC Round Pipe with IS: 9537 (Part-III) 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 groove shall be prepared by contractor on wall/ceiling as case may be & the conduit pipe shall be laid through prepared groove and in case of new construction the pipes shall be laid during reinforcement work. After laying of pipe the groove shall be closed with mixture of cement & sand and to match with existing surface of wall/ceiling.

The work consists providing & fixing of latest modular type SP switch 6A/10A x 240V latest modular type with ISI mark and to meet specifications of IS: 3854, modular Step cut electronic fan regulator with rotary steps & 3 plate Ceiling Rose including its modular plates & GI boxes. 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.

(12) Technical Specification for Item No. {12}

The item includes providing & fixing **surface wiring for Modular fan point** from switchboard with Flame Retardant, 1100 Voltage grade, single core stranded copper conductor wire with IS: 694/1990 of size 1.5 sq. mm. for phase with red colour & neutral wire with black colour and 1.5 Sq.mm continuous stranded copper conductor green wire for earth to be laid through PVC heavy duty casing Capping Strip and other accessories such as Tee, junction box, inspection bends, elbow etc. of approved make as directed by Engineer-in-Charge. The PVC heavy duty flat casing Capping Strip conduit shall be fixed rigidly on wall/ceiling with suitable size heavy duty PVC saddle set with base, clamp & screw at the interval of 0.5 meter.

The work consists providing & fixing of latest modular type SP switch 6A/10 x 240V with ISI mark and to meet specifications of IS: 3854, modular Step cut electronic fan regulator with rotary steps & 3 plate Ceiling Rose including its modular plates & GI boxes. 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.

(13) Technical Specification for Item No. {13}:

Full plug point

The item includes providing & fixing concealed wiring for Modular Plug Point with Flame Retardant, 1100 Voltage grade, single core stranded copper conductor wire with IS: 694/1990 of size 1.5 sq. mm. for phase with red colour & neutral wire with black colour and 1.5 Sq.mm continuous stranded copper conductor green wire for earth to be laid through in existing concealed Pipe, by removing old wires.

If required in case of non tracing the circuit, then wiring for full plug point will be provide through PVC Round Pipe with IS: 9537 (Part-III) of size 32 mm & above 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 groove shall be prepared by contractor on wall/ceiling as case may be & the conduit pipe shall be laid through prepared groove and after laying of pipe, the groove shall be closed with mixture of cement & sand and to match with existing surface of wall and Ceiling.

The work consists providing & fixing of 1 no. Modular SP switch 6A/10 x 240V with spark shield with ISI mark and 2 Modular 2 in 1 socket 6A/10A X 240 V with modular plates & GI boxes. 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.

Half plug point

The item includes providing & fixing half Modular point in switch board with Flame Retardant, 1100 Voltage grade, single core stranded copper conductor wire with IS: 694/1990 of size 1.5 sq. mm. for phase with red colour, neutral with black colour & earth with green colour to be laid through in existing concealed Pipe, by removing old wires.

If required in case of non-tracing the circuit, then wiring for hall plug point will be provide through PVC Round Pipe with IS: 9537 (Part-III) of size 32 mm & above 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 groove shall be prepared by contractor on wall/ceiling as case may be & the conduit pipe shall be laid through prepared groove and after laying of pipe, the groove shall be closed with mixture of cement & sand and to match with existing surface of wall and Ceiling.

The work consists providing & fixing of one modular SP switch 6A/10A x 240V with modular plates & boxes and 2 Module Modular 2 in 1 socket 6 A/10 A X 240 V with modular plates & GI boxes. 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.

(14) Technical Specification for Item No. {14} :

The item includes providing & fixing surface wiring for -

Full plug point with Flame Retardant, 1100 Voltage grade, single core stranded copper conductor wire with IS: 694/1990 of size 1.5 sq. mm. for phase with red colour & neutral wire with black colour and 1.5 Sq.mm continuous stranded copper conductor green wire for earth to be laid through in the PVC heavy duty flat casing Capping Strip and shall be fixed rigidly on wall/ceiling with suitable size heavy duty PVC saddle set with base, clamp & screw at the interval of 0.5 meter. Other accessories such as Tee, junction box, inspection bends, elbow etc. by removing old wires and casing capping strip of the approved make as directed by Engineer-in-Charge.

The work consists providing & fixing of 1 no. Modular SP switch 6A/10A x 240V with spark shield with ISI mark and 2 Modular 2 in 1 socket 6A X 250 V with its modular plates & GI boxes. 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.

Half plug point

The item includes providing & fixing half point in switch board with Flame Retardant, 1100 Voltage grade, single core stranded copper conductor wire with IS: 694/1990 of size 1.5 sq. mm. for phase with red colour, neutral with black colour & earth with green colour to be laid through in the PVC heavy duty flat casing Capping Strip and shall be

fixed rigidly on wall/ceiling with suitable size heavy duty PVC saddle set with base, clamp & screw at the interval of 0.5 meter. Other accessories such as Tee, junction box, inspection bends, elbow etc. by removing old wires and casing capping strip of the approved make as directed by Engineer-in-Charge.

The work consists providing & fixing of 1 no. Modular SP switch 6A/10A x 240V with spark shield with ISI mark and 2 Modular 2 in 1 socket 6A/10A X 240 V with its modular plates & GI boxes The complete work consists necessary wiring connections and earth linking with all materials and labour as directed by Engineer-in-charge.

(15) Technical Specification for Item No. 15

Power point The item includes providing and fixing concealed/surface wiring for Modular Power Point with Flame Retardant, 1100 Voltage grade, single core stranded copper conductor wire of size 4.0 sq. mm. for phase with red colour & neutral wire with black colour and 2.5 Sq.mm continuous stranded copper conductor green wire for earth to be laid in The PVC heavy duty Conduit/flat Casing Capping strip.

The work consists providing & fixing of PVC heavy duty Conduit/flat Casing Capping Strip in prepared groove. The work consists providing & fixing of 2 module 16 A/20 A X 240 V socket with shutter with ISI mark, 1 module SP switch 16 A/20 A X 240 V with spark shield with ISI mark and 1 module 10/16 A fuse unit along with its modular plates & GI boxes. 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

The item includes providing and fixing concealed/surface wiring for Modular 6 Amp./10 Amp. 5 in 1 modular type switch socket with 1100 Voltage grade, single core stranded copper conductor wire of size 1.5 sq. mm. for phase with red colour & neutral wire with black colour and 1.5 Sq.mm continuous stranded copper conductor green wire for earth to be laid in The PVC heavy duty Conduit/flat Casing Capping Strip.

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.

(17) Technical Specification for Item No. 17

This includes providing and fixing concealed/surface wiring for AC Point with Flame Retardant 1100 voltage grade, single core stranded copper conductor wire of size 4.0 sq.mm. for phase with red colour & neutral wire with black colour and 2.5 sq.mm. continuous stranded copper conductor green wire for each to be laid through the PVC heavy duty Conduit/flat Casing Capping Strip shall be fixed as per site requirement rigidly on wall/ceiling with suitable size heavy duty PVC saddle set with base, clamp & screw at the interval of 0.5 meter other accessories such as Tee, junction box, inspection bends, elbow etc. of approved make. The proper size of groove shall be prepared by contractor on wall.

The work consists providing & fixing of 2 module 25 A X 240 V socket with ISI mark and 2 module modular switch 25 A X 240 V with its modular plates and GI boxes. 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.

(18) Technical Specification for Item No. 18

- (a) **Supply** : This includes supply of energy efficient LED 10 Watt, cool white, surface mounted bulk head light fixture of approved make and as directed by Engineer In Charge.
- (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 X 1.5 sq.mm. flexible copper cable from nearest source of supply & necessary connections & earth linking with all material and labour and as directed by Engineer-In-Charge.

(19) Technical Specification for Item No. 19

This includes supply & fixing of 8 way double doors SPN DB with IP42 degree of protection in Quarters Category E-type and F-type and 12 ways in Quarters Category A-type to D-type. The 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. Alongwith each DB box, the following MCBs shall be supplied.

Sr. No	Description for 1 Box (8 ways)	Qty For each DB
1	SP MCB 6-10 Amp 'C' Curve 10 KA	1
2	DP MCB 20 Amp 'C' Curve 10 KA	1
3	SP MCB 32 Amp. 'C' curve 10 KA	1

4	4 Pole 40 Amp. MCB 'C' Curve 10 KA	1
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Sr. No	Description for 1 Box (12 ways)	Qty For each DB
1	SP MCB 6-10 Amp 'C' Curve 10 KA	6
2	SP MCB 32 Amp. 'C' Curve 10 KA	2
3	4 Pole 40 Amp. RCCB with 100 ma tripping	1

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.

(20) Technical Specification for Item No. {20}

This includes supply of DIN Rail mounted 2 Pole RCCB (EL+MCB) 25 Amps. X 240 Volts 50 Hz. with 100 mA sensitivity & 10 kA Breaking capacity. The RCCB consist 3 in 1 protection against overload protection, protection against electrical leakage in the circuit. The supplied RCCB shall be conform to IS: 12640-2:2001, IEC: 61009-2-1:1996. 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.

(21) Technical Specification for Item No. {21}

This includes supply of DIN Rail mounted 4 Pole RCCB (EL+MCB) 40 Amps. X 415 Volts 50 Hz. with 100mA sensitivity & 10 kA Breaking capacity. The RCCB consist 3 in 1 protection against overload protection, protection against electrical leakage in the circuit. The supplied RCCB shall be conform to IS: 12640-2:2001, IEC: 61009-2-1:1996. 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.

(22) Technical Specification for Item No. {22}

This includes supply at site 4 Core, 16 sq. mm. aluminium conductor, XLPE insulated armoured cable confirming to IS : 7098 (Part-I) 1985 with up to date amendments and of approve 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 having marking/embossing at the interval of every meter showing its progressive length. The contractor shall produce the routine test certificate during supply of cable at site. The rate shall inclusive of all taxes, duties, packing, forwarding, insurance, transportation, and unloading at site of work, etc.

(23) Technical Specification for Item No. {23}

This includes supply at site 4 Core, 35 sq. mm. aluminium conductor, XLPE insulated armoured cable conforming to IS : 7098 (Part-I) 1985 with up to date amendments and of approve 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 having marking/embossing at the interval of every meter showing its progressive length. The contractor shall produce the routine test certificate during supply of cable at site. The rate shall inclusive of all taxes, duties, packing, forwarding, insurance, transportation, and unloading at site of work, etc.

(24) Technical Specification for Item No. {24}

This includes laying of cable through following type.

24 (a) Hard/Soft Soil:

This includes laying of single length LT XLPE Insulated armoured aluminium Conductor 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 & end termination of relevant size of approved make. This includes all labour and material as directed by Engineer-in-Charge.

In RCC/CC/Paver/Interlocking block

Cable shall be laid through RCC/CC and Payvot/interlocking block by cutting/breaking and removing by through suitable tools and plants after that trench 600 mm depth and 300 mm width trench shall be preparing and by providing and laying HDPE/DWC pipe, cable shall be laid through suitable diameter HDPE/DWC pipe. After laying of cable redone the surface area as per its positions. This includes all labour and material as directed by Engineer-in-charge.

24 (b) Road through HDD method:

LT XLPE Cables of various sizes shall be laid underneath by using Horizontal Directional Drilling (HDD) method by putting suitable diameter HDPE pipe. HDPE pipe having strength 10Kg/sq.cm} shall in contractor scope), the contractor shall have arranged suitable equipment's for horizontal drilling and after drilling HDPE heavy duty pipe of size 50 mm and above shall be inserted before laying of any cable at their own cost. The cable shall be pass underneath the road without disturbing their stone arrangement through heavy duty HDPE pipe buried beneath complete road height wise as directed by EIC. For single size/length cable, individual HDPE pipe shall be passing through a road, for another cable; separate heavy duty HDPE pipe shall pass through the Tunnel / trench. Laying of HDPE pipes coupled by HDPE socket only after standard length in excavated trench/tunnel and also sealing of HDPE pipe ends by suitable cap. Back filling & dressing of excavated trenches as per specification. This includes all labour and material as directed by Engineer-in- Charge.

- 24 (c)** This includes laying of single length LT XLPE Insulated armoured aluminium Conductor Cable of 1.1KV Grade (excluding supply of cable) on wall by suitable size of GI clamps fixed on wall at a distance of 0.5 Mtr. This includes all labour and material as directed by Engineer-in- Charge.

(25) Technical Specification for Item No. {25}

The work includes removal of existing single/three phase energy meter and redressing, termination of the wires property as directed by Engineer-in-Charge with the new system to entire satisfaction of EIC. This also includes connecting the earth wire to main complete with labour and material.

(26) Technical Specification for Item No. {26}

This includes preparation of earth station with chemical treated back filled compound Corrosion protection by hot dip 12.7 - 30 mm dia Pipe-in-Pipe GI Type 3 Mtr Depth, Maintenance free including with all accessories & Masonry work. The work shall be carried out to entire satisfaction of Engineer-in-charge. This work includes all labour and material as directed by Engineer-in-Charge. After completion of work the contractor shall witness the real value of earth pit by earth meter to entire satisfaction of EIC.

(27) Technical Specification for Item No. {27}

The works include providing & fixing the Main DB/Meter/SB or as per site requirement. 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.

i). 8 SWG GI wire.

This includes supply, Laying & connecting, 8 SWG GI wire, from DB/Meter /SB to earth station by providing & fixing suitable Dia Medium duty PVC conduit pipe in concealed manner, the works include 8 SWG earth wire will be pass through conduit pipe. The earth wire shall be connected nut bolts rigidly or as directed by EIC.

(28) Technical Specification for Item No. {28}

This items includes supply and fixing of 20 watt LED gate light (2 nos. in each 'A' & 'B' type quarters) with operating on 180 to 240 V single phase 50 HZ supply. The model will be decided by EIC before procurement.

(29) Technical Specification for Item No. {29}

This includes Complete dismantling & removal of existing deteriorated pole with overhead conductor & street light including relevant accessories. Before dismantling & removal of Pole the conductor & street light shall be removed from each pole in such a way that same shall not be get damaged. All the items dismantled have to be minutely recorded and handed over to the substation, Gopalpuri, DPA or as directed by EIC.

(30) Technical Specification for Item No. {30}

This includes follow of methodology in the wiring (Surface/Concealed) for keeping the provision for inverter circuit for lights and fan points only for each quarter.

(31) Technical Specification for Item No. {31}

This includes fixing of existing TV cable through conduit pipe/casing capping in proper way upto TV point with complete labour and material and as directed by EIC.

Note :- All the materials shall be as per approved make list of DPA but before procurement approval from the Engineer Incharge shall be obtained. However, wherever the items are not available in the approved make list then the approval of the same shall be obtained from the Engineer-in-Charge.

Sd/-

Seal & Signature
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	SIEMENS/HAGER L&T/ABB
	LT DISTRIBUTION PANELS	
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/AMPA RE 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/ PRESTOPLAST/ 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 $\geq 10KV$ for fittings & internal Surge Protection for Driver of $\geq 4KV$, 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	SUKAM / MICROTEK
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
Note: In case of supply of Make of material which is neither available in the DPA approved, the said material should be supplied as per the Make decided by EIC for which written intimation will be given to the contractor. Before procurement of material, the Make of the material should be approved by EIC in writing.		

Seal & Signature of Contractor

Sd/-
Executive Engineer (E)
Deendayal Port Authority