Schedule-B

Sr. No.	Description	Qty	Unit	Rate	Amount
1	Providing & fixing following concealed wiring for single phase sub-circuit from the main switch /meter/DBs /MCBs to the switch board with 2 x 2.5 Sq.mm. copper conductor to be used as phase & neutral and bare copper wire as earthing as per Technical Specification No. 1	515	Mtr.		
2	Providing and Fixing concealed wiring for modular light/tube/bell point with PVC insulated single core standard 1.5 Sq.mm. copper conductor wire as per Technical Specification No.2	135	Nos.		
3	Providing and Fixing concealed wiring for modular Fan point with PVC insulated single core standard 1.5 Sq.mm. copper conductor wire & single/twin module step cut electronic fan regulator as case may be as per Technical Specification No. 03	20	Nos.		
4	Providing and fixing concealed wiring for 3 x 5/6A X250 Volt Modular Half point as per Technical Specification No. 04	25	Nos.		
5	Providing and fixing concealed wiring for 15/16A X250 Volt Modular power point as per Technical Specification No. 5	10	Nos.		
6	Providing and fixing concealed wiring for 20A, Modular A.C point as per Technical Specification no. 6	10	Nos.		
7	Providing and fixing concealed wiring for 3 x 5/6A X250 Volt modular plug point with 3nos. SP switches for computer as per Technical Specification No. 7	05	Nos.		
8	Providing & fixing following concealed wiring for single phase sub-circuit from the main switch /meter/DBs /MCBs to the switch board with 2 x 6 Sq.mm. copper conductor to be used as phase & neutral and bare copper wire as earthing as per Technical Specification No. 8	245	Mtr.		

9	Supply, Installation of following Load Point Panel as per Technical specification No:- 09	01	No.		
10	Supply of following type distribution board as per Technical specification No:- 10 a). 4 Way TPN (8 + 12 Module) Double Door Distribution Board.	05	Nos.		
11	Installation of following type distribution board as per Technical specification No:- 11 a). 4 Way TPN (8 + 12 Module) Double Door Distribution Board.	05	Nos.		
12	Supply of following type of MCCB, RCCB & MCBs as per Technical Specification No. 12				
a)	6-32 A SP MCB with 10kA Breaking Capacity in 'C' Series	70	Nos.		
b)	4Pole, 100 Amp. RCCB	6	Nos.		
c)	100 A 4-Pole MCB with 10kA Breaking Capacity in 'C' Series	6	Nos.		
13	Fixing of following type of MCCB, RCCB & MCBs as per Technical Specification No. 13				
a)	6-32 A SP MCB with 10kA Breaking Capacity in 'C' Series	60	Nos.		
b)	4Pole, 100 Amp. RCCB /100 A TPN MCB with 10kA/6kA Breaking Capacity in 'C' Series	5	Nos.		
c)	100 Amp 4-Pole MCCB with 25kA Breaking Capacity	5	Nos.		
14	Supply of 4 KVA UPS Inverter as per Technical Specification no. 14	1	No.		
15	Installation, Testing & Commissioning of 4 KVA UPS Inverter as per Technical Specification no. 15	1	No.		
16	Supply of GI Perforated Cable tray as per technical specification no. 16	75	Meter		
17	Fixing of GI Perforated Cable tray as per technical specification no. 17	75	Meter		
18	Supply of 18 Watt Sleek LED Down Light as per Technical Specification No:- 18	95	Nos.		

19	Fixing of 18 Watt Sleek LED Down Light as per Technical Specification No:- 19	95	Nos.		
20	Supply of 7 Watt Recessed LED Spot COB light as per Technical Specification No:- 20	60	Nos.		
21	Fixing of 7 Watt Recessed LED Spot COB light as per Technical Specification No:- 21	60	Nos.		
22	Supply of 35 Watt LED post top Lantern Light complete with 4/5 meter pole and accessories as per Technical Specification No:- 22	8	Nos.		
23	Fixing of 35 Watt LED post top Lantern Light as per Technical Specification No:- 23	8	Nos.		
24	Supply of Installation, Testing commissioning of VRV AC SYSTEM as per Technical Specification No:- 24	1	Complete Job		
25	Supply of 1200 mm Sweep BLDC fan as per technical specification no. 25	16	Nos.		
26	Installation of 1200 mm Sweep BLDC fan as per technical specification no. 26	16	Nos.		
27	Supply of 300 mm Sweep exhaust fan as per technical specification no. 27	5	Nos.		
28	Installation of 300 mm Sweep exhaust fan as per technical specification no. 28	5	Nos.		
29	Supply of Street Light 140 watt warm white LED light along with connector, complete in all respect as per Technical Specification No:- 29	8	Nos.		
30	Installation , Testing commissioning of Street Light 140 watt warm white light along with connector, fasteners, hardware complete in all respect as per Technical Specification No:- 30	8	Nos.		
31	Supply at site LT armored XLPE cable of 1.1KV grade of the following type & size as per Technical Specification No. 31 a) 4 Core, 300 Sq. mm. Aluminum Cable b) 4 Core x 25 Sq. mm. Copper Cable	 800 150	 Meter Meter		
32	Lying Single / Double length of LT armored aluminum conductor XLPE cable of 1.1kV grade				

	up to 300 Sq.mm through various route as per Technical Specification no. 32 a) Through Hard / Soft Soil Excavation. b) Through RCC Road/Rail HDD(Horizontal Directional Drilling) by Putting HDPE pipe	 650 150	 Meter Meter		
33	Lying Single / Double length of 4 Core LT armored aluminum conductor XLPE cable of 1.1kV grade up to 50 Sq.mm in cable tray/in fall ceiling as per technical specification no. 33	150	Meter		
34	Preparation earthing station, chemical treated back filled compound earthing system with Pipe-In-Pipe 50 mm Dia GI type 3 Mtr Depth , Maintenance free as per Technical Specification No. 34.	3	Nos.		
35	Providing & connecting following type earth wire for earth station to equipments as per requirement As per Tech. spec. No:- 35. a) 12 SWG GI earthing wire. b) 25X3 Hot Dip GI Strips	 200 50	 Mtr. Mtr.		
36	Supply, Installation, Testing and Commissioning of smoke detector as per technical specification no.36	12	Nos.		
37	Supply, Installation, Testing and Commissioning of flame detector as per technical specification no.37	1	No.		
38	Supply, Installation, Testing and Commissioning of fire alarm control panel as per technical specification no.38	1	Set		
				Total Amount in INR	

(In words Rupees _____ only)

(NOTE: The rates should be inclusive of all taxes, duties, fees, cess etc and all incidental charges; but exclusive of GST).

Signature & Seal of Contractor

Executive Engineer (E)
Deendayal Port Authority

SCOPE OF WORK

The Deendayal Port Authority is the one of the Major Port in India, under administrative control of Shipping Ministry, Govt. Of India. The Specification is intended to cover the Electrification work for newly constructed building. The works will be carried out simultaneously with Civil work , which includes electrical part i.e. Supply & laying of power cables from the different sources, Supply, Installation and Commissioning of LDP, fire alarm system, VRV system with all latest features and state of art technology, Supply & fixing of LED fittings/ internal concealed wiring. The work shall be executed as per IER & to the satisfaction of the Engineer-in -Charge. For installation of equipments, the contractor shall arrange all types of tool & tackles.

TECHNICAL SPECIFICATIONS

Technical Specification No. 1

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 suitable 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 grove and incase of new construction the pipes shall be laid during reinforcement work. After laying of pipe the grove 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.

Technical Specification No. 2

The item includes providing & fixing concealed 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 & 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 grove shall be prepared in old construction by contractor on wall/ floor and the conduit pipe shall be laid through prepared grove in such case on the ceiling portion the pipe is to be laid on the false ceiling by clamping properly. But for new construction the pipes shall be laid during reinforcement work. After laying of pipe the grove shall be closed with mixture of cement & sand and to match with existing surface of wall/ceiling/ floor also incase of false ceiling the pipe shall be properly clamped over the ceiling. The work consists providing & fixing of one Module Bell Push/SP switch 6A x 250V with spark shield ISI mark and to meet specifications of IS & 3 plate Ceiling Rose/Angle Holder made from polycarbonate on suitable size of PVC box with cover. The PVC unbreakable concealed box for required modules shall be embedded properly in the wall and the switches shall be fixed on Modular Plates for required Modules on 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.

Technical Specification No. 3

The item includes providing & fixing concealed wiring for Modular 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 grove shall be prepared in old construction by contractor on wall/ floor and the conduit pipe shall be laid through prepared grove in such case on the ceiling portion the pipe is to be laid on the false ceiling by clamping properly. But for new construction the pipes shall be laid during reinforcement work. After laying of pipe the grove shall be closed with mixture of cement & sand and to match with existing surface of wall/ceiling. The work consists providing & fixing of one module SP switch 6A x 250V with spark shield with ISI mark and to meet specifications of IS, 2 module 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 unbreakable concealed box for required modules shall be embedded properly in the wall and the switches shall be fixed on Modular Plates for required Modules on 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.

Technical Specification No. 4

The item includes providing & fixing half Modular point in existing switch board with Flame Retardant, 1100 Voltage grade, single core stranded copper conductor wire with IS of size 1.5 sq. mm. for phase, neutral & earth. The work consists providing & fixing of one module SP switch 6A x 250V with spark shield with ISI mark and to meet specifications of IS, and 2 Module Modular 2 in 1 socket 6A x 250V with shutter made from polycarbonate on existing modular plate (by considering 3 extra modules for half point in point wiring for light/fan/tube/bell point). The complete work consists necessary wiring connections and earth linking with all materials and labour as directed by Engineer-in-charge.

Technical Specification No. 5

The item includes providing & fixing concealed wiring for Modular Power point with Flame Retardant, 1100 Voltage grade, single core stranded copper conductor wire with IS 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 with IS 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 grove shall be prepared in old construction by contractor on wall/ floor and the conduit pipe shall be laid through prepared grove in such case on the ceiling portion the pipe is to be laid on the false ceiling by clamping properly. But for new construction the pipes shall be laid during reinforcement work. After laying of pipe the grove shall be closed with mixture of cement & sand and to match with existing surface of wall/ceiling. The work consists providing & fixing of 2 module 16A x 250V socket with shutter with ISI mark and to meet specifications of IS, 1 module

SP switch 16A x 250V with spark shield with ISI mark and to meet specifications of IS & 1 module 10/16A fuse unit on suitable size of PVC unbreakable concealed box with 4 module modular plate. The PVC unbreakable concealed box shall be embedded properly in the wall and the fuse, switch & Socket shall be fixed on 4-module modular plate and modular plate shall be fixed on 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.

Technical Specification No. 6

This includes providing & fixing concealed wiring for A.C point with Flame Retardant, 1100 Voltage grade, single core stranded copper conductor wire with IS: 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 with IS: 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 grove shall be prepared in old construction by contractor on wall/ floor and the conduit pipe shall be laid through prepared grove in such case on the ceiling portion the pipe is to be laid on the false ceiling by clamping properly. But for 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 2 module 25A x 250V socket with ISI mark and to meet specifications of IS & 2 module SP switch 25A x 250V with spark shield with ISI mark and to meet specifications of IS, on suitable size of PVC unbreakable concealed box with 4 module modular plate. The PVC unbreakable concealed box shall be embedded properly in the wall and the fuse, switch & Socket shall be fixed on 4-module modular plate and modular plate shall be fixed on the embedded box. The above switch is to be fitted on the outside of the room to control the lighting ckt of individual switchboard from outside, the work also consists necessary wiring connections and earth linking at both the ends with all materials and labour as directed by Engineer-in-charge.

Technical Specification No. 7

The item includes providing & fixing concealed wiring for Modular plug point for computers (With 2 module, 4 nos. 2 in 1 socket 6A x 250V & 4 nos. 1 module SP switch 6A x 250V with spark shield) with Flame Retardant, 1100 Voltage grade, single core stranded copper conductor wire with IS 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 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 grove shall be prepared in old construction by contractor on wall/ floor and the conduit pipe shall be laid through prepared grove in such case on the ceiling portion the pipe is to be laid on the false ceiling by clamping properly. But for 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 2 module, 4nos. 2 in 1 socket 6A x 250V & 4 nos. 1 module SP switch 6A x 250V with spark shield with ISI mark and to meet specifications of IS on suitable size of PVC unbreakable concealed box with 12 module modular plate. The PVC unbreakable concealed box shall be embedded properly in the wall / wooden

table and the switches & Sockets shall be fixed on 12-module modular plate and modular plated shall be fixed on 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.

Technical Specification No.8

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 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 suitable size 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 grove shall be prepared by contractor on wall/ceiling as case may be & the conduit pipe shall be laid through prepared grove and incase of new construction the pipes shall be laid during reinforcement work. After laying of pipe the grove 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.

Technical Specification No.9

This includes design, supply, Installation, Testing and commissioning of outdoor type Panel with double door, top canopy and handle with locking arrangement. Sub Load Point Panel board frame shall be fabricated from Heavy Duty CRCA sheet steel minimum 2.5 mm thick, pressed & shaped.
The Board shall be enclosed by sheet steel of minimum 2 mm thickness smoothly finished & level, door & covers shall be made 1.6 mm thick sheet steel. Adequate stiffeners shall be provided wherever necessary.

Dust & vermin proof Protection Class: IP 52.

Bottom Cable entry.

All panel edges and door edges shall be reinforced against distortion. Cut outs shall be true in shape and devoid of sharp edges.

The complete structure shall be rigid, self-supporting free from vibration, twists & bends.

The Panel shall be painted with two coats of zink rich primer paint and two coats of colour pigmented epoxy paint.

Finished painted appearance of equipment shall present an aesthetically, pleasing appearance, free from dents and uneven surfaces.
The Sub Load Point Panel shall be specious for easy maintenance and shall be provided with following electrical items:

1) 800 Amp, 4P ACB (Microprocessor based), 50kA: 1 No. for Incomer
2) 800 Amp, 4 P Change Over Switch
3) A set of TPN Copper bus bar rated for 800A (after considering all necessary ratings) 3 phase 4wire, 50Hz.
4) (All Internal Wiring With copper Wire)

5) 250 Amp, 4P MCCB, 36 kA: 4 No. (Outgoing)
6) 125 Amp, 4P MCCB, 25 kA: 4 Nos. (Outgoing)
7) 100 Amp. 4 P MCCB: 25 kA: 4 Nos. (Outgoing)
8) Digital Multi-Function Energy Meter (Accuracy Class 0.5): 1 No.
9) 800/5 Amp CT (Class 1): 3 Nos.
10) Phase R, Y & B Indication Lamp: 3 Nos.

Technical Specification No.10

This includes supply of 4 way Double Dorr TPN DB as per following specification & make.
- No. of Ways: 4 (8 Incomer + 12 Outgoing)
Protection device type: Main incomer: Molded case circuit breaker (MCB) - 3P or 4P
Outgoing: Miniature circuit breaker (MCB) - 1P or 3P
Enclosure/Cubicle description: Double door enclosure
Enclosure material: CRCA
Colour: White (RAL 9003)
Total number of 18 mm modules: 20

Environment

- IP degree of protection IP43
- IK degree of protection IK09
Standards IS 8623-1 IS 8623-3 IEC 61439-3
Product certifications: NABL
Make: L & T/Schneider/Siemens/ABB/Hager
The DB shall be fitted with Busbar, DIN Rail and neutral link. The rates shall be excluding the cost of MCB as directed by Engineer-in-Charge.

Technical Specification No. 11

This includes fixing & commissioning of supplied double door 4 Way TPN 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.

Technical Specification No. 12

a) This includes supply of DIN Rail mounted 'C' Series 6-32 Amps. X 240 Volts 50 Hz. Single Pole MCB with 10kA Breaking Capacity. The terminals of MCB shall be serrated type. The impulse withstand voltage and impulse power frequency voltage shall be 4KV (1.2/50 μs & 2KV (50Hz.).
b) This includes supply of 100 Amp., 4 Pole RCCB as per following technical specifications.
   1) Poles description: 4P
   2) [In] rated current: 100 Amp.
   3) Network type: AC
   4) Earth-leakage sensitivity: 40 Ma
   5) Earth-leakage protection time delay: Instantaneous
   6) Earth-leakage protection class : Type AC
   7) Network frequency: 50 Hz
   8) Rated operational voltage : 380...415 V AC, 50 Hz
   9) Residual current tripping technology: Voltage independent

10) Rated breaking and making capacity: Idm 1500 A, Im 1500 A
11) Rated conditional short-circuit current: 10 kA
12) Rated insulation voltage: 500 V
13) Rated impulse withstand voltage: 6 kV
14) Surge current: 250 A
15) Contact position indicator: Yes
16) Control type: Toggle
17) Mounting mode: Clip-on
18) Mounting support: DIN Rail

Environment

Standards : EN/IEC 61008-1
Product certifications: ISI SNI
IP degree of protection: IP20 conforming to IEC 60529
Electromagnetic compatibility: 8/20 µs impulse withstand, 250 A conforming to EN/IEC 61008-1

c) This includes supply of 100 Amp., 4 Pole TPN MCB as per following technical specifications.
1) Poles description/ Number of protected poles: 4P/4
2) Rated current: 100 Amp. At 30 C
3) Network type: AC
4) Trip unit technology: Thermal-magnetic
5) Curve code: C
6) Breaking capacity: 10000 A Icn at 230...400 V AC 50/60 Hz conforming to EN/IEC 60898-1
7) Suitability for isolation: Yes conforming to IEC 60947-2
8) Rated operational voltage : 380...415 V AC, 50 Hz/440 V 50 Hz
9) Magnetic tripping limit: 5...10 x In
10) Rated insulation voltage: 500 V AC 50 Hz conforming to EN/IEC 60947-2
11) Rated impulse withstand voltage: 6 kV conforming to EN/IEC 60947-2
12) Contact position indicator: Yes
13) Control type: Toggle
14) Mounting mode: Clip-on
15) Mounting support: DIN Rail

Environment

Standards : EN/IEC 60947-2
EN/IEC 60898-1
Product certifications: EAC/ ISI SNI
IP degree of protection: IP20 conforming to IEC 60529
Pollution degree: 3 conforming to IEC 60947-2
Overvoltage category: IV
Tropicalisation: 2 conforming to IEC 60068-1

Make of MCB,RCCB, MCCB: Make: L & T/Schneider/Siemens/ABB/Hager

Note: The supplied MCBs, RCCB, TPN MCB & MCCB shall be compatible for fixing in 4 way Double Dorr TPN Distribution board.

Technical Specification No. 13

a) This includes fixing & commissioning of supplied 6-32 Amp SP MCB in above supplied double door DB on wall / structure. The MCB shall be fixed on DIN Rail provided in existing DB. This includes necessary 1ϕ wiring, connections, distribution & earth linking of DB with all material, labour tools & tackles as directed by Engineer-In-charge.

b) This includes fixing & commissioning of supplied 4 Pole 100 Amp RCCB/100 Amp TPN MCB in supplied double door DB on wall / structure. The MCB shall be fixed on DIN Rail provided in existing DB. This includes necessary 3ϕ wiring, connections, distribution & earth linking of DB with all material, labour tools & tackles as directed by Engineer-In-charge.

c) This includes fixing & commissioning of supplied 4 Pole MCB in supplied double door DB on wall / structure. The MCCB shall be fixed on DIN Rail provided in existing DB. This includes necessary 3ϕ wiring, connections, distribution & earth linking of DB with all material, labour tools & tackles as directed by Engineer-In-charge.

Technical Specification No. 14

This includes supply of Single Phase 4 KVA Inverter as per following specification.
Ratings in VA: 4 KVA
Ratings in Watts: 3360 Watts Minimum
Warranty: 24 Months
Waveform: Pure Sine Wave
Battery Voltage : 48 V
No of 12V Batteries required:
Recommended Battery Capacity : 150 AH
Make: Luminous/Microtek/APC

Technical Specification No. 15

This includes Installation, testing & commissioning of 4 KVA Ups Inverter single phase in single phase out ON-LINE UPS including connection etc with batteries as required. Supplying and erecting 12 V/180AH TUBULAR Battery with battery Each terminal wire, duly charged complete with 36 months warranty. Required size lugs / glands, laying, dressing / clamping, glanding and termination of all the power/ control cables from the Incoming distribution board to UPS input end, battery, UPS to main distribution board, between UPS etc. is in the scope of the bidder. Necessary wiring of batteries and ups power wiring will be in the scope of bidder with all required labors and material.

Technical Specification No. 16

This includes supply of 50 mm (W) x 25 mm (h) heavy duty 14 SWG Perforated type Galvanized steel cable trays with cable tray covers, clamping bolts and other cable tray accessories such as coupler plates, bends, tees, reducers, vertical elbows etc.

Technical Specification No. 17

This include fabrication & Installation of perforated type cable trays including horizontal, vertical bends, reducers, tees, cross members & other accessories as required and duly suspended from the ceiling and /or fix to steel/RCC columns, beams or any other structure members with MS suspenders, angles, channels

with all required material, accessories and labors as directed by Engineer-In-charge.

Technical Specification No. 18

This includes supply of 18 Watt Round Sleek LED Down Light having Robust Design with Pressure Die-Cast Alu. Housing, ensuring long life as per per following technical specification.

1) Lumen: 2000 Lm
2) System Power : 18 Watt
3) CCT: 4000 K
4) CRI >80
5) Efficacy of >110 lm/w
6) Surge Protection: 2.5 kV
7) SDCM : < 5
8) THD (i) : < 10%
9) Input Voltage Range: 130-320 V AC
10) Beam Angle 120°
11) Optical Cover/Lens Type: Polycarbonate
10) Material : Housing: Pressure Die Cast Aluminum
Diffuser: Polycarbonate
Clip : Steel Clip (Spring)
11) Driver: Non Integral
12) Serviceability : Class B
13) Power Factor (Min): 0.95
14) Life: L70B50@50K Hrs.
15) Warrantee: 2 Year
Make: Phillips

Technical Specification for Item No. 19

This includes fixing & commissioning of supplied 18 Watt Round Sleek LED Down Light Luminaries on existing false ceiling by making & providing necessary cutout of fitting dimensions and required supporting material, facilitate mounting in false ceilings as directed. The fitting shall be fixed rigidly nearby fitting through suitable size of screws/nut bolts/anchor fasteners and connections with 3 core flexible copper cable from nearest source of supply/ceiling rose & necessary connections with all material and labour and as directed by Engineer-In-charge.

Technical Specification No.20

This includes supply of 7 Watt Recessed LED Spot light following technical specifications.

1) Adjustable spot head : Yes
2) LED Integrated: Yes
3) Centerpiece: Yes
4) Material: Aluminum Die Cast
5) Finish: White
6)Lumen: 630 Lm
7) System Power : 7 Watt
8) CCT: 3000/4000 K
4) CRI >80

5) Efficacy of > 90 lm/w
6) Surge Protection: 2 kV
7) Input Voltage Range: 160-360 V AC
10) Beam Angle 36°
11) Material : Metal
12) Class of Protection: Class II
13) IP Code: IP 20
14) Life: 35,000 hourS
15) Warrantee: 2 Year
Make: Phillips

Technical Specification No.21

This includes fixing & commissioning of supplied 7 Watt LED recessed spot COB light Luminaries on existing false ceiling/Corridor by making & providing necessary cutout of fitting dimensions and supporting material facilitate mounting in false ceilings/corridor as directed. The fitting shall be fixed rigidly nearby fitting through suitable size of screws/nut bolts/anchor fasteners and connections with 3 core flexible copper cable from nearest source of supply/ceiling rose & necessary connections with all material and labour and as directed by Engineer-In-charge.

The works also including necessary wiring, connections & necessary earth linking connections with all material, labour, tools & tackles as directed by Engineer-In-charge.

Technical Specification No.22

This includes supply of Aluminum pressure die-casting with integrated pole top with Polyester powder coated 35 Watt LED post top Lantern Light complete with 4/5 meter pole light following technical specifications. The light shall be Suitable for installation up to 6 m height max.

1) Initial luminous flux: 4000 lm
2) Mech. impact protection code: IK10
3) Ingress protection code: IP66
4) Surge Protection (Common/Differential): Surge protection level until 4 kV
5) Dimmable: Yes
2) System Power : 35 Watt
7) Luminaire light beam spread: 120°
8) Optical cover/lens type: UV stabilized Polycarbonate cover
9) Driver included: Yes
10) Flammability mark : F
11) Optic type: Distribution symmetrical
12) Init. Color Rendering Index: ≥70
13) Initial luminous flux: 4000 lm
14) Serviceability: Class B
15) Mounting On the pole (Dia. 60mm) suitable for cylindrical pole
3) CCT: 4000 K
4) CRI >80
5) Efficacy of > 115 lm/w
7) Driver specs : 120-277 V, Surge 4 KV, Auto restart, high cut off (>325V), Auto Restart, THD < 10% at full load

11) IP Code: IP 20
15) Warrantee: 2 Year
Make: Phillips

Technical Specification No.23

This includes complete erection fixing & commissioning of supplied 35 Watt LED post top Lantern Light along with 4/5 meter Poles, with all supporting material, for mounting as directed. The fitting shall be fixed rigidly nearby fitting through suitable size of screws/nut bolts/anchor fasteners and connections with 3 core flexible copper cable from nearest source of supply/ceiling rose & necessary connections with all material and labour and as directed by Engineer-In-charge. Necessary civil foundation/Civil Part work as directed by Engineer-In-Charge, for erection of pole will be in the scope of bidder.

The cable shall be passed through HDPE pipe of suitable size.

Technical Specification No.24

Supply, installation, testing & commissioning of Air Conditioning VRV System as per following technical specification.

1) Capacity: 32 Ton Minimum
2) Voltage Range: 208-230 V and 460 V

Features:

- **Vapor Injection:** Two-stage compression improves heating efficiency and boosts heating performance even in extremely cold weather.
- **Extended Compressor Speed 15~150Hz:** Multi V IV compressor elaborately adjusts its speed in respond to required temperature, thus reducing energy loss while providing comfort in a short period of time.
- **(High Pressure Oil Return):** Resolves compressor efficiency loss and improves part load efficiency by directly collecting oil to the inside of the compressor.
- **Optimal Heat Exchanger Circuit:** Variable Heat Exchanger Circuit intelligently selects the optimal number of heat exchanging paths to increase efficiency.
- **Smart Load Control:** It adjusts indoor discharge air according to outdoor and indoor temperature. This optimizies energy efficiency and maximizes indoor comfort level in cooling/heating modes.
- **Uncompromising Performance:** Multi V IV promises comfort indoor atmosphere regardless of external environments
- **Wide Operation Range:** Multi V IV has extended the range of cooling and heating operation through enhanced inverter compressor and control technology.
- **Comfort Cooling:** By adjusting refrigerant flow, Multi V IV maintains comfort indoor environment once it reaches the target temperature.
- **Redefined Convenience:** Flexible design capability and smart system diagnosis of Multi V IV provides most convenience for all.
- **Upgraded Fault Detection & Diagnosis (FDD):** The whole new FDD quickly diagnoses system errors and provides optimal solution for maintenance.

- **Expanded Piping Capabilities:** Multi V IV boasts long piping capabilities. 1000 meters in total piping length (longest piping length between outdoor & indoor unit is 200 meters).
- **Lightweight Outdoor Units:** Multi V IV is easy to handle and install due to lightweight outdoor units.
- **Large Capacity:** Multi V IV's larger capacity unit significantly saves valuable building space.
- Supply of Modulating outdoor units, with multi scroll compressors with inverter type compressor, special pre-coated fins, panel, corrosion resistant(suitable for sea side installation)coated condenser, inverter based condenser fan, Vibration isolation pads, electrical & microprocessor panel, isolating valves and all the necessary accessories for proper functioning of the units.

The scope also include complete installation, testing and commissioning of VRV system with copper tubing/piping with all joints and U-Bends and all required materials and labors.

Warranty: Five Year
Make: Daikin/LG/O General

Technical Specification for Item No. 25:
This includes supply of 1200 mm sweep ceiling as per following technical specification

Size/Type/Performance as per IS 374 Latest		
1	Fan Size	1200 millimeter
2	Type of Fan/Type of the Motor	DC/Brushless DC (BLDC)
3	Minimum Air Delivery and service value	As per clause 8.1 of IS: 374 latest
Energy Efficiency		
1	BEE Star Rating (Central Ministries/Departments while procuring shall ensure that the items carry 5 star or higher Star Rating of BEE	5 Star
1	Air delivery at test voltage (m^3/min)	220/230
2	Power Consumption	26 Watt to 35 Watt
3	Service Value at rated voltage (m^3/min/w)	6.2 to 8.4
4	Power Factor	0.98/0.99
5	Rated Speed (rev/min)	350 to 380
6	Number of Blades	3
7	Type of Regulator	Electronic Regulator
8	Number of Running Position	5
9	Class of Insulation	Basic Insulation
Material/Construction		
1	Blade Material	Aluminum
2	Blade Thickness	1.1 millimeter
3	Total Harmonic Distortion (%)	4 to 5

4	Standard Colour	White
5	Number of Canopy	2
6	Length of Down Rod (without Shackle)	400 millimeter
7	Shank Thickness - Minimum	2 millimeter
8	Overall weight of the ceiling fan	3 to 5 Kg
Salient Features		
1	Salient Features	Resistant to abrasion, Hassle-free operations, Trendy design, Decorative Design, Remote Control
2	Compliance to governing specification (IS: 374 latest)	Finish As per clause 7.7,Marking As per clause 9
Accessories		
1	Accessories in the scope of supply	Nut, Bolt, Clamp, Remote
Warranty		
	Warranty (in year) Min	5

Technical Specification for Item No. 26:

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. The rotary step cut electronic regulator shall be fixed and screwed rigidly on switch board including wiring and connection etc. with all material and labour as directed by Engineer-in-charge.

Technical Specification for Item No. 27:

This includes supply of exhaust fan of size 300 mm with capacitor start and run type motor, continuously rated, totally enclosed fitted with heavy duty grease filled double ball bearing that ensures noiseless performance and long lasting smoother life of fan suitable for single phase 220/250 Volts A.C. 50HZ. The impeller shall be used in an Exhaust Fan is of the propeller type & both hub and impeller shall be dynamically balanced, frames and arms mounted on rubber bushings, to avoid vibrations.

Technical Specification for Item No. 28:

This includes fixing & commissioning of supplied exhaust fan as per direction of EIC on exhaust hole so that discharge of exhaust air can be done easily. However if exhaust hole is not provided, it is to be done by contractor. The grouting of the fan is to be done by suitable size of anchor fastener bolts, and by providing metallic mesh/louvers as directed to other side so that birds can be restricted in the passage. This includes connections 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.

Technical Specification for Item No. 29:

Supply at site energy efficient LED 140 watt warm White LED Street light fixture. The LED fixtures should be suitable for pole pipe bracket which is including with LED.

The contractor shall take prior approval from the Engineer in charge for make of LED Street Light fixture

1) Light source color: 857 daylight
2) Driver included: Yes
3) Optic type: Asymmetric Beam angle 60°
3) Optical cover/lens type: Polycarbonate
4) Beam angle of light source: 60°
5) Protection class IEC: Safety class I
6) Warranty Period: 2 Years
7) Material: Aluminum
8) Input Voltage: 120 to 277 V
9) Initial input power: 140 Watt
10) Housing Material: Aluminium Die Cast
11) IP Code : 66
12) Mech. Impact Prot. Code: IK 08
13) Initial luminous flux (system flux): 16000 lm
14) Initial LED luminaire efficacy: 122 lm/W
15) Color Temperature: 5000 to 5700 K
16) Init. Color Rendering Index: > 70
17) Median useful life L70B50: 50000
18) Internal Surge Protection: 4 KV
Make: Phillips

Technical Specification for Item No. 30:

This includes fixing & commissioning of supplied LED Street Light for outer periphery of building. The supplied fitting shall be fixed on nipple on pipe/bracket at building height. This works includes supply & fixing the DB Box, the DB shall contain with one Digital timer. 3 phase 40 amps Contactor.20 amps DP for switching/control the street light complete with internal wiring (with providing & connecting with 3CX 2.5 sq.mm copper flexible cable) & necessary pipe/bracket with all required accessories & hardware for fixing of street light.

The works also including necessary wiring, connections & necessary earth linking connections with all material, labour, tools & tackles as directed by Engineer-In-charge.

Technical Specification for Item No. 31:

This includes laying of cable as per following

a) Supply at site 4C X 300 Sq.mm XLPE Insulated 1.1 KV grade, Aluminum conductor, XLPE insulated armored cable confirming to IS: 7098 (Part-I) 1988 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 5 years old. The cable shall have marking/embossing at the interval of every meter showing its progressive length. During the cable inspection, the manufacturer shall show the relevant ROUTINE TESTS to inspecting authority or otherwise the manufacturer shall produce the routine test certificate during supply of cable at site.

b) Supply at site 4C X 25 Sq.mm XLPE Insulated 1.1 KV grade, 4 core Copper conductor, XLPE insulated armored cable confirming to IS: 7098 (Part-I) 1988 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 5 years old. The cable shall have marking/embossing at the interval of every meter showing its progressive length. During the cable inspection, the manufacturer shall show the relevant ROUTINE TESTS to inspecting authority or otherwise the manufacturer shall produce the routine test certificate during supply of cable at site.

i). 4C X 25 Sq.mm XLPE Insulated.

Technical Specification No.32

This includes laying of cable size up to size of cable up to 4 core x 300 Sq.mm LT armored aluminum Conductor XLPE Cable of 1.1KV Grade as per following.

a). In Hard / soft Soil: - the cable shall be laid 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. This includes providing & laying of half round RCC Pipe on cable lengthwise i.e. parallel to the cable and the gaps shall be filled by fresh river sand. The cable shall be covered by keeping half round heavy duty RCC NP 2 Pipe. The filling of the trench shall be done with by provided Sand cover (at least 50mm from cable surface) completely & followed by 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 spreaded 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) In RCC/Rail/Road through HDD method: - Cable shall be laid underneath by using Horizontal Directional Drilling (HDD) method by putting suitable diameter Dia HDPE (suitable for cable size up to LT 4C/3.5CX 150 Sq.mm} HDPE pipe having strength 10Kg/sq.cm} shall in contractor scope), the contractor shall arranged JCB Machine for excavation, water for drilling, de- watering pump, HDD equipments at their own cost. The cable shall be pass through heavy duty HDPE pipe buried at nominal minimum depth 165 cm or according to construction of RCC Road/ Rail network or as per directed by EIC. For single size/length cable, individual HDPE pipe shall be passing through a road /rail crossing, for another cable; separate 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

Technical Specification No.33

This include Laying Single / Double length of 4 Core LT armored aluminum conductor XLPE cable of 1.1kV grade up to 50 Sq.mm in cable tray/in fall ceiling through PVC pipe/conduit pipe.

Technical Specification No.34

This includes preparation of earth station with chemical treated back filled compound 50 mm dia. Pipe In Pipe GI Type 2 Mtr Depth , Maintenance free including all accessories & Masonry work Enclosure with cover plate.

A cement concrete (ratio 1:4:8) chamber of at least 30 Cm. x 30 Cm. shall be provided just below the surface of ground over the funnel for watering and having RCC/CI cover

of suitable size as directed. This also includes removal of extra-excavated earth from the site. 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. The works also include earthing value marking & painting on earth strips & earthing station by suitable paints (Green Color on Strips) and also mentioned the earth value on earth pits.

Technical Specification No.35

The works include providing & fixing the following size earth strip from earth station to equipment / Main DB 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). 12 SWG GI earthing wire

ii). 25X 3 Hot DIP GI strips, having minimum 80 Micron galvanized coating.

This includes supply, Laying & connecting, 12 SWG GI earthing wire , from DB/Meter /Switch 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 using cooper nut bolts rigidly or as directed by EIC.

Technical Specification No.36

Supply, Installation, Testing and Commissioning of Automatic Floating Sensitivity type Analog addressable Photo (thermal) smoke detector with mounting base LED, Address Switch to programme the detectors, complete as required. BELOW FALSE CEILING
Make: Honeywell.

Technical Specification No.37

Supply, Installation, Testing and Commissioning of Flame Detectors which enables simple coverage of fire hazard areas across many fire hazard applications. Installation, set-up and operation are simple. The detector shall have wide solid area coverage and fast speed of response optimized safety.
Make: Honeywell.

Technical Specification No.38

This include supply, installation and commissioning of an audio visual fire alarm control panel with latest technology. This control panel shall be compatible with both smoke detector & flame detector for proper integration and shall be provided with all required cables and other accessories for successful commissioning of the entire fire alarm system. It shall be of Honeywell make.

Note: 1) Any ancillary work arises during the execution of work, which is required to complete the work, the Contractor shall complete the item/items by carrying out such ancillary work without any extra payment.

2) The work shall be carried out with entire satisfaction of Engineer-in-Charge.

Signature & Seal of Contractor

Executive Engineer (E)

Deendayal Port Authority

SPECIAL CONDITIONS FOR ELECTRICAL PART IN CIVIL WORK

1. In the event of dimension figures upon a drawing differing from those obtained by measuring drawings shall be referred to the Chief Engineer, whose decision shall be final and binding upon the Contractor.

2. The contractor shall have valid Electrical Contractor license issued by IMP Department, Govt. of Gujarat for carrying out electrical part of work.

3. The Contractor shall submit the colored three sets Hard copy of approved drawing of cable routes, circuit diagram of LT installation layout, plans of wiring with technical literature and three sets of as made drawing on completion of work.

4. For successfully Execute the work, the firm shall depute or nominate their Engineer or project-In-Charge or competent person, who deal the Electrical Part of the project to Engineer-In-Charge.

5. 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.

6. 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.

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. Incase 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. All the supporting frame work 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.

9. Caution board vitreous enameled 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.

10. Necessary cable route indicators and cable joint indicators shall provide at an interval of 200 Meters approximately.

11. The work shall be carried out in accordance with the best standards of workmanship and to the entire satisfaction of the Engineer-in-Charge.

12. The electrical installation shall conform to all latest applicable IS standard.

13. Necessary earthing of wiring, Load Panel, etc set will be carried as per the IE rule & Act.

14. 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,.

15. 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.

16. Queries about the Technical Data

The Engineer-in-Charge will clarify queries on the Technical Data.

17. Instructions

The contractor shall follow all instructions of the Engineer in Charge or his nominee which comply with applicable laws where the site is located.

18. Safety

The Contractor shall be responsible for the safety of all activities on the Site.

19. 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.

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.

20. Payments Terms:

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 & acceptance of the same by DPA .

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. and after inspection & certification of the same by DPA .

iii) 10% will be released after successful completion of whole work and handing over to DPA.

21. The payments toward laying of cables, Sub Circuit wiring/Point wiring, installation of Load Point Panel/DBs, LED Street Light will be released only after successfully Testing, Commissioning/Charging.

22. For Erection of Load point Panel necessary civil work shall be carry out by the contractor as per direction of Engineer In charge or his nominee.

23. 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 Trust

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

25. 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.

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

27. 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.

28. 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

Sr. No.	Description	Recommended Makes
1	LT XLPE CABLES	POLYCAB/TORRENT/RPG ASIAN/ RAVIN/ HAVELLS/ KEI/APAR
2	CHANGE OVER SWITCH	SIEMENS/L&T/ABB/SCHNEIDER
3	MCCB FOR LT DISTRIBUTION PANELS	SIEMENS/L&T/ABB/SCHNEIDER
4	MCB/ELCB/RCCB/ RCCBO	SIEMENS/L&T/ABB/SCHNEIDER
5	DISTRIBUTION BOARD	SIEMENS/L&T/ABB/SCHNEIDER/HAGER
6	DIGITAL KWH METERS	L&T/ENERCON/SECURE/L&G/ RISHABH
8	ANALOG VOLT/AMPARE METER	RISHABH/AE/ENERCON/L&T
9	SLECTOR SWITCH FOR VOLTMETER/AMPARE METER	L&T/SIEMENS/KAYCEE/ABB
10	PVC WIRE WITH COPPER CONDUCTOR	POLYCAB/FINOLEX/ANCHOR/HAVELLS/RR CABLE/KEI
11	E SWITCHES, SOCKETS, HOLDERS AND CEILING ROSES & ELECTRONIC REGULATORS	ANCHOR/MK/NORTHWEST/PHILLIPS
12	DOOR BELLS/CALL BELLS	ANCHOR/LEGEND/MK/NORTHWEST
13	SEM Modular / MODULAR SWITCHES, SOCKETS, PLATES & BOXES	ANCHOR / MK / NORTHWEST / LEGRAND
14	PVC CONDUIT/OVAL CONDUIT & CASSING CAPPING AND ACCESSORIES	PRECISION/VULCAN/FINOLEX/ GARWARE/ANCHOR/ASTRAL
15	CEILING FANS	BAJAJ/ORIENT/CROMPTON GREAVES/GEC
16	EXHUAST FANS	BAJAJ/ORIENT/CROMPTON GREAVES/GEC
17	LUGS & CABLE GLANDS	DOWELLS / JAINSON / BRACO

Sd/-

Seal & Sign of Contractor

Executive Engineer (E)
Deendayal Port Authority