



GOVERNMENT OF MAHARASHTRA

PUBLIC WORKS DEPARTMENT
(ELECTRICAL WING)



CURRENT SCHEDULE OF RATES
FOR YEAR
2022-2023



स्वातंत्र्याचा अमृत महात्सव

SAVING
ENERGY



**GOVERNMENT OF MAHARASHTRA
PUBLIC WORKS DEPARTMENT
(ELECTRICAL WING)**

**CURRENT SCHEDULE OF RATES FOR THE YEAR
2022 - 2023**

This CSR comes into force from **28th July 2022**

*Current schedule of rates is approved by the Chief Engineer (Electrical),
Public Works Department, Mumbai vide letter No.CE(Elec)/Desk-3/ 1526
/2022, dated 28/07/2022.*

sd/-
(S.A.Patil)
Chief Engineer (Electrical)
P.W.Dept. Mumbai

GOVERNMENT OF MAHARASHTRA PUBLICATION

[Price As per printed copy]

INDEX

<u>General Notes</u>	1		
Chapter 1 Wiring (WG)			
1.1 Concealing of Conduits	3	4.1 Solar hot water system	74
1.2 PVC Flexible/Rigid Conduits/ Casing-n-Capping/Under Floor Trunking/Raceways and Box System	4	4.2 Pipes for solar hot water system	74
1.3 Bunch of Wires	5	4.3 Solar Batteries	76
1.4 Mains on GI Bare Wire	6	4.4 Rooftop OFF grid solar systems	77
1.5 Wiring Accessories	7	4.5 Rooftop ON grid solar systems	78
1.6 Modular switches and Accessories	8	4.6 Heat Pump	80
1.7 Point Wiring	11	4.7 Electric Vehicle Charger	81
1.8 Telephone, Audio and Video Wiring	14	4.8 Miscellaneous	82
1.9 Telephone Accessories	16	4.9 Dismantling	83
1.10 ELV Cabling	17	Chapter 5 Switchgear (SW)	
1.11 Networking Components	19	5.1 Change Over Switch, SDF	84
1.12 Networking Accessories	20	5.2 Mini Feeder Pillar/Street Light Control Panel	88
1.13 Dismantling	22	5.3 LT - MCBs/MCB Change Over Switch	90
Chapter 2 Fittings (FG)		5.4 LT - MCBDBs	91
2.1 Indoor LED Fittings	23	5.5 LT - MCCBs	93
2.2 Industrial Fittings	26	5.6 RCCB / RCBO	94
2.3 Accessories for Indoor Fittings	26	5.7 MCCB Panel Boards and Accessories	96
2.4 Outdoor Fittings	30	5.8 LT - Air Circuit Breakers	98
2.5 Decorative Outdoor Fitting	31	5.9 HT SF6 Load Break Switch /VCB/RMU	99
2.6 Highbay LED Fittings	32	5.10 Accessories	102
2.7 Accessories for Outdoor Fittings	32	5.11 Accessories for MCCBs	104
2.8 Lamps and Tubes for Indoor & Outdoor	34	5.12 Dismantling	105
2.9 Aviation Light Fitting	35	Chapter 6 Control Panel (CP)	
2.10 Fans	35	6.1 Sheets	106
2.11 Accessories for Fans	38	6.2 Bus bars	108
2.12 Dismantling	39	6.3 Measuring Instruments	109
Chapter 3 Appliances (AP)		6.4 H.T. Metering	113
3.1 Water Heaters	40	6.5 Accessories	114
3.2 Air Conditioners	41	6.6 Surge Protective Devices	115
3.3 Water Coolers & Refrigerators	47	6.7 Energy Devices (Harmonic Filter, APFC Panel)	116
3.4 Air-Coolers	48	6.8 Sandwich Bus bar Trunking System	118
3.5 Water Purifiers	49	6.9 Air Insulated Bus bar Trunking System	123
3.6 Inverter	49	Chapter 7 Cables (CB)	
3.7 Online Uninterruptible Power Supply (UPS)	50	7.1 LT Cables (Aluminium)	125
3.8 Batteries for Inverter & UPS	51	7.2 LT Cables (Copper)	130
3.9 Voltage Stabilizers	51	7.3 HT Cables	134
3.10 Accessories for AC & Water cooler	52	7.4 Cable Joints & End Termination Kits (LT Cables)	136
3.11 VRV/VRF Air conditioning	55	7.5 Cable Joints & End Termination Kits (HT Cables)	137
3.12 Dismantling	73	7.6 Cable Enclosures	139
		7.7 Cable Glands	141
		7.8 Street Light Boxes and Cable Indicators	142
		7.9 Cable Lugs (Copper)	142
		7.10 Cable Lugs (Aluminium)	143
		7.11 Cable Tray	144
		7.12 Dismantling	145

Chapter 8 Over Head Systems (OH)			Chapter 13 Fire Fighting and Fire Alarm (FF)		
8.1	Steel Poles	146	13.1	Main Fire Pumps (Single Stage Centrifugal)	208
8.2	Hot Dipped Galvanized Poles & High-Mast	147	13.2	Jockey Pumps (Centrifugal)	211
8.3	Brackets	151	13.3	Booster Pump	213
8.4	Conductors	155	13.4	Main Fire Pumps Diesel Engine Driven (Centrifugal)	214
8.5	Insulators	157	13.5	Fire Pump Control Canel	216
8.6	Accessories	157	13.6	Pipes	219
8.7	Dismantling	159	13.7	Valves	219
Chapter 9 Earthing (EA)			13.8	Fire Fighting Accessories	222
9.1	Plate, Pipe type earthing	160	13.9	Conventional Fire Alarm System	224
9.2	Accessories	160	13.10	Intelligent Addressable Fire Alarm System	225
9.3	Lightning Conductor and Accessories	161	13.11	P A System	227
Chapter 10 Sub Stations (SS)			13.12	Sprinklers	228
10.1	Non-sealed transformers	162	13.13	Fire Sealant System	228
10.2	Hermetically Sealed Transformer	167	13.14	Fire Safety Audit	228
10.3	Single Phase Sealed Transformer	173	13.15	Fire Extinguisher	228
10.4	Compact Substation	174	Chapter 14 Temporary EI (TE - IL)		
10.5	Dry type Transformer	176	14.1	Temporary Illumination	229
10.6	Accessories	180	14.2	Hiring of Generators	235
10.7	Dismantling	182	Chapter 15 Siren (SRN)		
Chapter 11 Generators (GEN)			15.1	Siren	237
11.1	Generators	183	15.2	Accessories for Siren	237
11.2	Auto Mains Failure Panels (AMF Panels)	190	15.3	Dismantling	237
11.3	Servicing of DG set	192	Chapter 16 Civil Work (CW)		
11.4	Dismantling	194	16.1	Excavation	238
Chapter 12 Water Pumps (WP)			16.2	Masonry Work	238
12.1	Centrifugal pumps	195	16.3	C.C. Foundation	239
12.2	Submersible pumps for Borewell	196	16.4	Painting	240
12.3	Submersible pumps for Openwell	202	16.5	Plumbing	241
12.4	Accessories	203	16.6	Plumbing Accessories	242
12.5	Dewatering Pump	206	Chapter 17 Lift (LFT)		
12.6	Pressure Pump	206	17.1	New Installation	244
12.7	Dismantling	207	17.2	Dismantling	277
			Chapter 18 Miscellaneous (MSC)		
			18.1	Rewinding	280
			18.2	Replacement	282
			18.3	Accessories	283
			Chapter 19 Credit for Dismantled Material		
			19.1	Credit for Dismantled Material	285
			Abbreviations		
			287		
			References		
			290		

General Notes

1. Detailed specifications of the items described in “Current Schedule of Rates for the year 2022-23” (hereinafter it will be termed as CSR) shall be strictly followed as per the “specifications for electrical works 2008 approved by PWD (Elect) (amended upto date)” (hereinafter it will be termed as specification book).

The detailed specifications of the newly introduced items in CSR will be added in the specification book. Deletion of the specifications of the items which are deleted in the present CSR from previous CSR will be taken care. If any type of ambiguity is observed regarding any item, concerned Executive Engineer is empowered to resolve the same with ex-post facto approval of the Chief Engineer (Elect.).

2. Material and method of construction of the electrical installation works carried out as per CSR shall be conforming to below mentioned standards and specifications.
 - A. Relevant standards from Bureau of Indian Standards (BIS) / International Electrotechnical Commission (IEC) (amended upto date)
 - B. Central Electricity Authority (Measures relating to Safety and electric Supply) Regulations 2010 (amended upto date)
 - C. National Electrical Code 2020(
 - D. National Building Code 2016 (amended upto date)
 - E. Chapter 16 of PWD Handbook
 - F. specifications for electrical works(First edition 2008) (Compiled and prepared by PWD (Electrical) (amended upto date)
 - G. Energy Conservation Building Code (ECBC) 2017.
 - H. GRIHA rating system.
 - I. Technical specifications of Ministry of New and Renewable Energy.

Note : In case of, any conflict between the Standards and the specifications, the standards and codes will supersede the specifications.

3. ISI marked material shall be used for execution of the works. If the same is not available, then the material which is in the list of materials approved by Chief Engineer (Electrical), P.W.D. shall be used in its place. Substandard material shall not be used in any case on Government installations.
4. RoHS compliant products shall be preferred.
5. Material used on government installations will be liable for testing from Central / State Government test laboratory / Regional test laboratories/ Government approved NABL accredited laboratory for confirmation of the relevant parameters.
6. Black coloured PVC conduit shall not be used for surface wiring on electrical installation works.
7. The items which are not covered in the CSR i . e. non CSR items shall be processed by the respective Executive Engineer after following the guidelines issued vide शासन परिपत्रक क्र.२०१७/प्र.क्र. ११/नियोजन ३ मंत्रालय मुंबई ४००३२, दि. ११/०४/२०१७ (with further amendments if any).
8. Centage charges shall be levied as per Public Works Department GR no . सीएनसी १००३/प्रक्र ९७ /अर्थ १-मंत्रालय, मुंबई दि. २०.१० .२००३ and other relevant circulars issued time to time.
9. Basic Labour rates in respective Rate Analysis of the items in CSR are considered as per Chief Labour Commissioner, Ministry of Labour & Employment, Government of India, and Circular No. FNO1/4&(3)/2022-LS-II dated 31/03/2022.

10. Work insurance shall be drawn as per GR no. वित्त विभाग /विमास /प्र.क्र.१०९८ /शासनहमी /९८ /९२८, मंत्रालय, मुंबई दि.१९ ऑगस्ट, 1998 (amended upto date). If required insurance document is not submitted by the agency then insurance amount shall be recovered from the first bill as per the prevailing guidelines issued by the concerned Government department.
11. The rates of items in CSR are inclusive of cess, insurance, overhead and transportation etc. but are excluding Goods and Service Tax. In the estimate, GST provision shall be considered as per the prevailing guidelines issued by the concerned department.
12. The rates proposed in CSR will vary as per site locations. The detail of increase in percentage over CSR rate is mentioned below.

a.	District headquarters	as per CSR
b.	Municipal Corporation areas	as per CSR
c.	Other than a, b and notified tribal areas	10% over CSR rates
d.	other than a, b and Non tribal areas	5% over CSR rates
e.	For hilly inaccessible areas like Matheran, Mahabaleshwar, Panchgani, Pratapgad, Raigad Fort, Chikhaldara, Toranmal, Dharni, Bhamragarh, Sironcha, Etapalli, Dodamarg, Trimbakeshwar, Mahur.	20% over CSR rates
f.	Electrical installation works in occupied jails, mental hospitals and printing press.	15% over CSR rates

The notified **hilly / inaccessible** areas shall be considered as per GR , planning department No . DVK/1089/P-66/Y-19/dtd. 23.11.90 & 13.06.2003 & डीविका-२०१५/ प्र.क्र.४२/ का.१४८१-अ , १५ जून, २०१८.

13. The rates of items pertaining to civil work shall be based on SSR of the Civil department.
14. Concerned Executive Engineer shall make provision of sub metering as per the prevailing guidelines in Energy Conservation Building Code (ECBC) 2017 and GRIHA 2015.
15. All the electrical works shall be carried out in relevance with the bar chart of respective civil works by observing the planning instructions issued vide lt. no. BDG2018/prakra109/bldg1/dtd. 06.06.2018 from Public Works Deptt.
16. Repairs to the electrical machineries shall be proposed in conjunction with the yellow book 1991.
17. All rights are reserved. No part of this publication, be reproduced in any form/any other language or by any means, electronic or mechanical including photocopy, recording or any information storage and retrieval system, without permission in writing, from the Chief Engineer (Elect), PWD, Mumbai.

Disclaimer

The rates taken in CSR are indicative and actual rates shall be governed by the variable trends in market. The other Government Departments, PSUs, Local bodies and other private organisations using this CSR, shall be at their own risk and discretion. PWD shall not be responsible for any ambiguity, discrepancy, dispute or financial loss arising directly or indirectly by using or following items of CSR by other Government Departments, PSUs, Local bodies and other private organisations.

Chapter: 1
Wiring (WG)

1.1 Concealing of Conduits	(WG-MA/CC)
1.2 PVC Flexible/Rigid Conduits/ Casing-n-Capping/ Under Floor Trunking/Raceways and Box System	(WG-MA/CON)
1.3 Bunch of Wires	(WG-MA/BW)
1.4 Mains on GI Bare Wire	(WG-MA/GB)
1.5 Wiring Accessories	
1.6 Modular switches and Accessories	
1.7 Point Wiring	(WG-PW)
1.8 Telephone, Audio and Video Wiring	(WG-TW/TW)
1.9 Telephone Accessories	(WG-TW/TA)
1.10 ELV Cabling	(WG-COC)
1.11 Networking Components	(WG-NWC)
1.12 Networking Accessories	(WG-NAS)
1.13 Dismantling	(WG- DM)

Chapter: 1 WIRING (WG)

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>1.1 Concealing of Conduits (WG-MA/CC)</u>			
1-1-1	Supplying and erecting rigid steel conduit 16 SWG 20 mm dia. with necessary accessories in wall/floor with chiselling appropriately as per specification No: WG-MA/CC.	m	197
1-1-2	Supplying and laying rigid steel conduit 16 SWG 20 mm dia. with necessary accessories in RCC work/false ceiling/false flooring as per specification No: WG-MA/CC.	m	181
1-1-3	Supplying and erecting rigid steel conduit 16 SWG 25 mm dia. with necessary accessories in wall/floor with chiselling appropriately as per specification No: WG-MA/CC.	m	240
1-1-4	Supplying and laying rigid steel conduit 16 SWG 25 mm dia. with necessary accessories in RCC work/false ceiling/false flooring as per specification No: WG-MA/CC.	m	222
1-1-5	Supplying and erecting rigid steel conduit 16 SWG 32 mm dia. with necessary accessories in wall/floor with chiselling appropriately as per specification No: WG-MA/CC.	m	332
1-1-6	Supplying and laying rigid steel conduit 16 SWG 32 mm dia. with necessary accessories in RCC work/false ceiling/false flooring as per specification No: WG-MA/CC.	m	313
1-1-7	Supplying and erecting HMS PVC conduit FRLS grade 20 mm dia. with necessary accessories in wall/floor with chiselling appropriately as per specification No: WG-MA/CC.	m	113
1-1-8	Supplying and laying HMS PVC conduit FRLS grade 20 mm dia. with necessary accessories in RCC work/false ceiling/false flooring as per specification No. WG-MA/CC.	m	99
1-1-9	Supplying and erecting HMS PVC conduit FRLS grade 25 mm dia. with necessary accessories in wall/floor with chiselling appropriately as per specification No: WG-MA/CC.	m	127
1-1-10	Supplying and laying HMS PVC conduit FRLS grade 25 mm dia with necessary accessories in RCC work/false ceiling/false flooring as per specification No. WG-MA/CC.	m	117
1-1-11	Supplying and erecting HMS PVC conduit FRLS grade 32 mm dia. with necessary accessories in wall/floor with chiselling appropriately as per specification No: WG-MA/CC.	m	180
1-1-12	Supplying and laying HMS PVC conduit FRLS grade 32mm dia. with necessary accessories in RCC work/false ceiling/false flooring as per specification No. WG-MA/CC.	m	157
1-1-13	Concealing of provided G.I. pipe/H.G. screwed conduit/PVC pipe in wall/floor/false ceiling complete as per specification No: WG-PW/CW	m	74

Note:- Add Rs. 3/- per metre for erecting conduit on stone wall.

1.2 PVC Flexible/Rigid Conduits/Casing-n-Capping/Under Floor Trunking/Raceways and Box System (WG-MA/CON)

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
1-2-1 (New)	Supplying and erecting 20mm dia. corrugated flexible polypropylene conduit	m	16
1-2-2 (New)	Supplying and erecting 25 mm dia. corrugated flexible polypropylene conduit	m	21
1-2-3	Supplying and erecting HMS PVC conduit FRLS grade 20 mm dia. with PVC accessories on wall / ceiling as per specification No: WG-MA/CON.	m	82
1-2-4	Supplying and erecting HMS PVC conduit FRLS grade 25 mm dia. with PVC accessories on wall / ceiling as per specification No: WG-MA/CON.	m	96
1-2-5	Supplying and erecting HMS PVC conduit FRLS grade 32 mm dia. with PVC accessories on wall / ceiling as per specification No: WG-MA/CON.	m	136
1-2-6	Supplying and erecting PVC trunking (PVC casing-n-capping) of size 20 mm with accessories on wall/ceiling as per specification No: WG-MA/CON.	m	41
1-2-7	Supplying and erecting PVC trunking (PVC casing-n-capping) of size 25 mm with accessories on wall/ceiling as per specification No: WG-MA/CON.	m	44
1-2-8	Supplying and erecting PVC trunking (PVC casing-n-capping) of size 32 mm with accessories on wall/ceiling as per specification No: WG-MA/CON.	m	53
1-2-9	Supplying and erecting PVC trunking (PVC casing-n-capping) of size 40 mm with accessories on wall/ceiling as per specification No: WG-MA/CON.	m	81
1-2-10	Supplying and erecting PVC box trunking of size 50x16/20 mm. with accessories on wall/ceiling as per specification No: WG-MA/BOX.	m	101
1-2-11	Supplying and erecting PVC box trunking of size 50x50 mm. with accessories on wall/ceiling as per specification No: WG-MA/BOX.	m	168
1-2-12	Supplying and erecting PVC box trunking of size 75x50 mm. with accessories on wall/ceiling as per specification No: WG-MA/BOX.	m	364
1-2-13	Supplying and erecting PVC box trunking of size 75x75 mm. with accessories on wall/ceiling as per specification No: WG-MA/BOX.	m	471
1-2-14	Supplying and erecting PVC box trunking of size 100x50 mm. with accessories on wall/ceiling as per specification No: WG-MA/BOX .	m	537
1-2-15	Supplying and erecting PVC slotted box trunking of size 25x25 mm. with accessories on wall/ceiling as per specification No: WG-MA/SLBOX.	m	70
1-2-16	Supplying and erecting PVC slotted box trunking of size 45x30 mm. with accessories on wall/ceiling as per specification No: WG-MA/SLBOX.	m	120
1-2-17	Supplying and erecting PVC slotted box trunking of size 60x45 mm. with accessories on wall/ceiling as per specification No: WG-MA/SLBOX.	m	171
1-2-18	Supplying and erecting PVC slotted box trunking of size 75x75 mm. with accessories on wall/ceiling as per specification No: WG-MA/SLBOX.	m	249
1-2-19	Supplying and erecting PVC slotted box trunking of size 100x100 mm. with accessories on wall/ceiling as per specification No: WG-MA/SLBOX.	m	473
1-2-20	Supplying & erecting GI flexible Conduit 25 mm dia. conforming to I.S. with required number of couplings, bushes, check nuts etc. complete	m	49

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
1-2-21	Supplying & erecting GI flexible Conduit 40 mm dia. conforming to I.S. with required number of couplings, bushes, check nuts etc. complete	m	59
1-2-22	Supplying & erecting GI flexible Conduit 50 mm dia. conforming to I.S. with required number of couplings, bushes, check nuts etc. complete	m	68
Note	Add Rs. 3/- per metre for erecting conduit on stone wall		
<i>1.3 Bunch of Wires (WG-MA/BW)</i>			
1-3-1	Supplying and erecting mains with 2x1.5 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No: WG-MA/BW	m	40
1-3-2	Supplying and erecting mains with 2x2.5 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places. as per specification No: WG-MA/BW	m	62
1-3-3	Supplying and erecting mains with 2x4 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places. as per specification No: WG-MA/BW	m	89
1-3-4	Supplying and erecting mains with 2x6 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places. as per specification No: WG-MA/BW	m	132
1-3-5	Supplying and erecting mains with 2x10 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No: WG-MA/BW	m	232
1-3-6	Supplying and erecting mains with 3x2.5 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No: WG-MA/BW	m	93
1-3-7	Supplying and erecting mains with 3x4 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No: WG-MA/BW	m	135
1-3-8	Supplying and erecting mains with 3x6 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No: WG-MA/BW	m	196
1-3-9	Supplying and erecting mains with 3x10 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No: WG-MA/BW	m	347
1-3-10	Supplying and erecting mains with 4x16 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No: WG-MA/BW	m	693
1-3-11	Supplying and erecting mains with 4x25 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No: WG-MA/BW	m	1231
1-3-12	Supplying and erecting mains with 4x35 sq.mm FRLSH copper PVC insulated wire laid in provided conduit/trunking/inside pole/Bus bars or any other places as per specification No: WG-MA/BW	m	1704
1-3-13	Supplying and erecting PVC insulated PVC round sheathed 1 sq.mm (32 no. x 0.20mm dia.) 3 core flexible multi stranded copper Industrial cable for voltage grade up to 1.1 kV	m	43

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
1-3-14	Supplying and erecting PVC insulated PVC round sheathed 1.5 sq.mm (30 no. x 0.25 mm dia.) 3 core flexible multi stranded copper Industrial cable for voltage grade up to 1.1 kV	m	61
1-3-15	Supplying and erecting PVC insulated PVC round sheathed 2.5 sq.mm (50 no. x 0.25 mm dia.) 3 core flexible multi stranded copper Industrial cable for voltage grade up to 1.1 kV	m	96
1-3-16	Supplying and erecting PVC insulated PVC round sheathed 4 sq.mm (56 no. x 0.30 mm dia.) 3 core flexible multi stranded copper Industrial cable for voltage grade up to 1.1 kV	m	145

Note 1) Double the rate of two wire bunch for calculating rate of four wire bunch upto 10 Sq.mm.

2) Continuous earth wire size shall be selected as per IS 732: 2019 below, where "S" is cross section area in sq. mm. of phase conductor.

Table 14 Minimum Cross-Sectional Area of Protective Conductors - Clause 5.4.3.1.1 of IS 732:2019.

Cross section of Phase conductor	Cross section Area of earth
S≤16	S
16<S≤35	16
S>35	S/2

3) Rates of earth wire shall be calculated as one half rate of mains of bunch of two wire

4) All wires shall be of stranded type.

5) Earth wire shall be of Green colour.

6) For FRLS wire subtract 2% from rate of FRLSH wire.

1.4 Mains on GI Bare Wire (WG-MA/GB)

1-4-1	Supplying and erecting mains with WP 2 x 2.5 sq. mm. 1100 V grade aluminium PVC insulated and PVC sheathed wires on G.I. bearer wire No. 8 SWG complete erected with required size of porcelain reel insulators and 16 SWG G.I. binding wire.	m	73
1-4-2	Supplying and erecting mains with WP 2 x 4 sq. mm. 1100 V grade aluminium PVC insulated and PVC sheathed wires on G.I. bearer wire No. 8 SWG complete erected with required size of porcelain reel insulators and 16 SWG G.I. binding wire.	m	74
1-4-3	Supplying and erecting mains with WP 2 x 6 sq. mm. 1100 V. grade aluminium PVC insulated and PVC sheathed wires on G.I. bearer wire No. 8 SWG complete erected with required size of porcelain reel insulators and 16 SWG G.I. binding wire.	m	87
1-4-4	Supplying and erecting mains with WP 3 x 4 sq. mm. 1100 V. grade aluminium PVC insulated and PVC sheathed wires on G.I. bearer wire No. 8 SWG complete erected with required size of porcelain reel insulators and 16 SWG G.I. binding wire.	m	117
1-4-5	Supplying and erecting mains with WP 3 x 6 sq. mm. 1100 V. grade aluminium PVC insulated and PVC sheathed wires on G.I. bearer wire No. 8 SWG complete erected with required size of porcelain reel insulators and 16 SWG G.I. binding wire.	m	147

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
1-4-6	Supplying and erecting mains with WP 4 x 4 sq. mm. 1100 V. grade aluminium PVC insulated and PVC sheathed wires on G.I. bearer wire No. 8 SWG complete erected with required size of porcelain reel insulators and 16 SWG G.I. binding wire.	m	142
1-4-7	Supplying and erecting mains with WP 4 x 6 sq. mm. 1100 V. grade aluminium PVC insulated and PVC sheathed wires on G.I. bearer wire No. 8 SWG complete erected with required size of porcelain reel insulators and 16 SWG G.I. binding wire.	m	174
<i>1.5 Wiring Accessories</i>			
1-5-1	Supplying and erecting shockproof 6A porcelain base T.Switch / bell push erected on filled polypropylene board or polished double wooden block / 3 mm thick hylam sheet / 4mm thick plywood pasted with 1.5 mm thick laminate with S M screws and duly connected.	Each	36
1-5-2	Supplying and erecting One/Two way piano type switch 6A./bell push erected on filled polypropylene board or double polished wooden board/ folded or screwed board with top of either wooden/ 3 mm thick hylam sheet/ 4mm thick plywood pasted with 1.5 mm thick laminate with S M screws and duly connected.	Each	40
1-5-3	Supplying and erecting shockproof T. switch 16 A porcelain base surface mounting type / flush mounting type erected on filled polypropylene board or polished thick varnished double wooden block/folded or screwed board with top of either wooden/ 3 mm thick hylam sheet/ 4mm thick plywood pasted with 1.5 mm thick laminate with S M screws and duly connected.	Each	86
1-5-4	Supplying and erecting shockproof piano type switch 250 V, 16 A , erected on filled polypropylene board or polished double wooden/ folded or screwed board with top of either wooden/ 3 mm thick hylam sheet/ 4mm thick plywood pasted with 1.5 mm thick laminate with S M screws and duly connected.	Each	77
1-5-5	Supplying and erecting shockproof 3 pin plug socket 6A with porcelain base / flush type erected on filled polypropylene board or polished thick varnished double wooden block / folded or screwed board with top of either wooden / 3 mm thick hylam sheet/ 4mm thick plywood pasted with 1.5 mm thick laminate with S M screws and duly connected.	Each	44
1-5-6	Supplying and erecting shockproof 3 pin plug socket 16A with porcelain base/ flush type erected on filled polypropylene (IS:14772-2000) board or polished thick varnished double wooden block / folded or screwed board with top of either wooden/3 mm thick hylam sheet/ 4mm thick plywood pasted with 1.5 mm thick laminate with S M screws and duly connected.	Each	59
1-5-7	Supplying and erecting Ceiling rose / Batten holder / Slanting holder / hanging cord switch / hanging bell push / pendant holder bakelite base 6A. erected on filled polypropylene board or polished double wooden block/ PVC junction box.	Each	39
1-5-8	Supplying and erecting adaptor for lamp holder 230 V.A.C. supply.	Each	33
1-5-9	Supplying and erecting recess type, 3 pin plug socket 6A with piano switch 6A erected on M.S Box made of 16 SWG sheet duly painted and covered with bakelite hylam sheet of 3 mm thickness connected with earth terminals and leads duly concealed	Each	93

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
1-5-10	Supplying and erecting recess type, 3 pin plug socket 6A with piano switch 6 A combined unit erected on polished double wooden block/ folded or screwed board with top of either wooden or plywood pasted with sunmica and with connecting leads	Each	98
1-5-11	Supplying and erecting flush, shock proof plug socket 6 pin 6A and 16A with switch 16A combined unit erected in recess in 16 gauge M.S sheet box duly painted and connected with earth terminal and leads	Each	125
1-5-12	Supplying and erecting flush type, shockproof plug socket 6 pin 6A and 16A with switch 16A combined unit erected on filled polypropylene board or double wooden block / 3mm thick hylam sheet / 4mm thick plywood pasted with 1.5 mm thick sunmica with S M screws and duly connected.	Each	139
1-5-13	Supplying and erecting flush type shockproof plug socket 6A & 16A (6 pin) with 16A switch combined with indicator lamp and fuse with gang box on wooden board.	Each	162
1-5-14	Supplying and erecting shockproof bell push on filled polypropylene board or wooden block covered with sunmica with 2 core (TRS type) PVC insulated copper wire of size 0.5 sq mm 5 m length connected to the point.	Each	43
1-5-15	Supplying and erecting recess type 3 pin plug socket 6A with piano switch 6A combined unit erected on M.S box made up of 16 gauge sheet and covered with sunmica and with connecting leads	Each	116
1-5-16	Supplying 6 amp. 3 pin plug Top bakelite type of 230 V. A.C. supply.	Each	40
1-5-17	Supplying 16 amp. 3 pin plug Top bakelite type of 230 V. A.C. supply.	Each	61
Note:-	Accessories erected on provided board, Rs. 8/- per accessory shall be deducted for board.		
<u>1.6 Modular switches and Accessories</u>			
1-6-1	Supplying and erecting modular type switch 6A / 10A duly erected on provided plate and box with wiring connections complete.	Each	72
1-6-2	Supplying and erecting modular type switch 16A duly erected on provided plate and box with wiring connections complete.	Each	106
1-6-3	Supplying and erecting modular type bell-push 6A / 10A duly erected on provided plate and box with wiring connections complete.	Each	106
1-6-4	Supplying and erecting modular type bell-push with indicator 2 modules 6A / 10A , duly erected on provided plate and box with wiring connections complete.	Each	129
1-6-5	Supplying and erecting modular type Two way switch 6A / 10A (2 Module) , duly erected on provided plate and box with wiring connections complete.	Each	108
1-6-6	Supplying and erecting modular type switch 16 / 20 A with indicator , duly erected on provided plate and box with wiring connections complete.	Each	137
1-6-7	Supplying and erecting modular type switch one way 16 / 20 A , duly erected on provided plate and box with wiring connections complete with neon indicator.	Each	121
1-6-8	Supplying and erecting modular type D.P. switch 32A with indicator , duly erected on provided plate and box with wiring connections complete.	Each	210
1-6-9	Supplying and erecting modular type 32A, DP key tag switch with key tag , duly erected on provided plate and box with wiring connections complete.	Each	441

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
1-6-10	Supplying and erecting modular type 3 pin 6A multi socket with safety shutter , duly erected on provided plate and box with wiring connections complete.	Each	112
1-6-11	Supplying and erecting modular type 3 pin 6 / 16A multi socket with safety shutter , duly erected on provided plate and box with wiring connections complete.	Each	160
1-6-12	Supplying and erecting modular type indicator lamp , duly erected on provided plate and box with wiring connections complete.	Each	72
1-6-13	Supplying and erecting modular type 6 / 16A fuse unit, duly erected on provided plate and box with wiring connections complete.	Each	110
1-6-14	Supplying and erecting modular type T.V. socket single outlet , duly erected on provided plate and box with wiring connections complete.	Each	95
1-6-15	Supplying and erecting modular type telephone socket one gang with safety shutter , duly erected on provided plate and box with wiring connections complete.	Each	96
1-6-16	Supplying and erecting modular type telephone socket two gang with safety shutter , duly erected on provided plate and box with wiring connections complete.	Each	120
1-6-17	Supplying and erecting modular type computer Jack RJ45 with safety shutter, duly erected on provided plate and box with wiring connections complete.	Each	130
1-6-18	Supplying and erecting modular type bell indicator , duly erected on provided plate and box with wiring connections complete.	Each	183
1-6-19	Supplying and erecting modular type buzzer 220 / 250V , duly erected on provided plate and box with wiring connections complete.	Each	124
1-6-20	Supplying and erecting modular type (one module) electronic dimmer 400 / 450W , duly erected on provided plate and box with wiring connections complete.	Each	245
1-6-21	Supplying and erecting modular type (two module) electronic dimmer 600/650W , duly erected on provided plate and box with wiring connections complete.	Each	318
1-6-22	Supplying and erecting modular type (two module) electronic dimmer 1000W , duly erected on provided plate and box with wiring connections complete.	Each	486
1-6-23	Supplying and erecting modular type (two module) electronic step regulator for fan , duly erected on provided plate and box with wiring connections complete.	Each	382
1-6-24	Supplying and erecting modular type blanking plate one module , duly erected on provided plate & box.	Each	21
1-6-25	Supplying and erecting modular type blanking plate two module , duly erected on provided plate & box.	Each	30
1-6-26	Supplying and erecting PVC Surface modular switch box with double mounting plate for 1 module complete duly erected.	Each	124
1-6-27	Supplying and erecting PVC Surface modular switch box with double mounting plate for 2 module duly erected.	Each	128
1-6-28	Supplying and erecting PVC Surface modular switch box with double mounting plate for 3 module duly erected.	Each	148
1-6-29	Supplying and erecting PVC Surface modular switch box with double mounting plate for 4 module duly erected.	Each	172

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
1-6-30	Supplying and erecting PVC Surface modular switch box with double mounting plate for 6 module duly erected.	Each	222
1-6-31	Supplying and erecting PVC Surface modular switch box with double mounting & front plate for 8 module complete duly connected.	Each	262
1-6-32	Supplying and erecting PVC Surface modular switch box with double mounting plate for 12 module duly erected.	Each	343
1-6-33	Supplying and erecting PVC Surface modular switch box with double mounting plate for 16 / 18 module duly erected.	Each	408
1-6-34	Supplying and erecting unbreakable concealed type modular switch box with double mounting plate for 1 module duly erected flush to wall with required chiselling and finishing with cement mortar / POP as per required to match the background.	Each	220
1-6-35	Supplying and erecting unbreakable concealed type modular switch box with double mounting plate for 2 module duly erected flush to wall with required chiselling and finishing with cement mortar / POP as per required to match the background.	Each	221
1-6-36	Supplying and erecting unbreakable concealed type modular switch box with double mounting plate for 3 module duly erected flush to wall with required chiselling and finishing with cement mortar / POP as per required to match the background.	Each	250
1-6-37	Supplying and erecting unbreakable concealed type modular switch box with double mounting plate for 4 module duly erected flush to wall with required chiselling and finishing with cement mortar / POP as per required to match the background.	Each	277
1-6-38	Supplying and erecting unbreakable concealed type modular switch box with double mounting plate for 6 module duly erected flush to wall with required chiselling and finishing with cement mortar / POP as per required to match the background.	Each	335
1-6-39	Supplying and erecting unbreakable concealed type modular switch box with double mounting plate for 8 module duly erected flush to wall with required chiselling and finishing with cement mortar / POP as per required to match the background.	Each	417
1-6-40	Supplying and erecting unbreakable concealed type modular switch box with double mounting plate for 12 module duly erected flush to wall with required chiselling and finishing with cement mortar / POP as per required to match the background.	Each	523
1-6-41	Supplying and erecting unbreakable concealed type modular switch box with double mounting plate for 16 / 18 module duly erected flush to wall with required chiselling and finishing with cement mortar / POP as per required to match the background.	Each	579
1-6-42	Supplying and erecting white footlight with 4 modules concealed modular box and LED lights with cover complete erected on wall /flush to wall with necessary chiselling in wall and finishing with cement and mortar / POP as per required and duly connected.	Each	392
1-6-43	Supplying and erecting 16 / 20 / 25 A starter (modular range) 2 module for AC unit on provided box complete & duly concealed with necessary material and connected.	Each	343
1-6-44	Supplying and erecting 6 to 32 A, 10kA, SPMCB suitable to fix in 1 module of modular switch in provided box complete & duly concealed with necessary material and connected.	Each	212

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
1-6-45	Supplying and erecting 16 to 32 A, 10kA, DPMCB suitable to fix in 2 module of modular switch in provided box complete & duly concealed with necessary material and connected.	Each	236
1-6-46	Supplying and erecting PVC Surface modular double mounting plate 1 module complete duly erected.	Each	64
1-6-47	Supplying and erecting PVC Surface modular double mounting plate 2 module complete duly erected.	Each	72
1-6-48	Supplying and erecting PVC Surface modular double mounting plate 3 module complete duly erected.	Each	85
1-6-49	Supplying and erecting PVC Surface modular double mounting plate 4 module complete duly erected.	Each	100
1-6-50	Supplying and erecting PVC Surface modular double mounting plate 6 module complete duly erected.	Each	136
1-6-51	Supplying and erecting PVC Surface modular double mounting plate 8 module complete duly erected.	Each	159
1-6-52	Supplying and erecting PVC Surface modular double mounting plate 12 module complete duly erected.	Each	205
1-6-53	Supplying and erecting PVC Surface modular double mounting plate 16/18 module complete duly erected.	Each	231
1-6-54	Supplying and erecting modular type 5 pin socket with safety shutters 3 module socket 6A 240V AC supply, duly erected on provided plate and box with wiring connections complete duly erected.	Each	121
1-6-55	Supplying and erecting modular safety power strip with one modular switch 16A and three sockets each 13A combination with overload and surge protection unit on double mounting plate, duly erected complete.	Each	1150
1-6-56	Supplying and erecting modular switch with LED indicator available to connect in a switch board to glow LED when connected load is off, on provided double mounting plate complete duly erected.	Each	121
1-6-57	Supplying and erecting modular type USB Charger socket of 1 Module with nominal output voltage of 5V DC $\pm 5\%$ and nominal output current of 5 V - 750 mA , duly erected on provided plate and box with wiring connections complete.	Each	618
1-6-58	Supplying and erecting modular pop up Box 8 module erected with provided AV/ HDMI , RJ 45,6 A electrical sockets and switch on provided table.	Each	3744
1-6-59	Supplying power strip with one switch 6A and 4 sockets each 6A,230 V combination with surge and spike protection unit complete.	Each	397
<i>Point Wiring (PW)</i>			
<i>1.7 Point Wiring (WG-PW)</i>			
1-7-1	Point wiring in for light/fan/bell in 20 mm metal conduit with 1.5 sq.mm (2+1E) FRLSH grade copper wire, flush type switch, earthing and required accessories as per specification No: WG-PW/SW	Point	856
1-7-2	Point wiring for independent plug in 20 mm metal conduit with 1.5 sq.mm (2+1E) FRLSH grade copper wire, flush type switch, earthing and required accessories as per specification No: WG-PW/SW	Point	941

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
1-7-3	Point wiring for light/fan/bell in 20 mm FRLS grade HMS PVC conduit with 1.5 sq.mm (2+1E) FRLSH grade copper wire with flush type switch and required accessories as per specification No: WG-PW/SW	Point	494
1-7-4	Point wiring for independent plug in 20 mm FRLS grade HMS PVC conduit with 1.5 sq.mm (2+1E) FRLSH grade copper wire, flush type switch, earthing and required accessories as per specification No: WG-PW/SW	Point	560
1-7-5	Point wiring for light/bell concealed type in min 20 mm FRLS grade HMS PVC conduit with 1.5 sq.mm. (2+1E) FRLSH grade copper wires, modular type switch, earthing and required accessories as per specification No: WG-PW/CW	Point	717
1-7-6 (New)	Point wiring for ceiling fan concealed type in min 20 mm FRLS grade HMS PVC conduit with 1.5 sq.mm. (2+1E) FRLSH grade copper wires, modular type switch, earthing and required accessories as per specification No: WG-PW/CW	Point	803
1-7-8	Point wiring for independent plug, concealed type in min 20 mm FRLS grade HMS PVC conduit with 1.5 sq.mm (2+1E) FRLSH grade copper wires, modular type switch, earthing and required accessories as per specification No WG-PW/SW	Point	781
1-7-9	Supplying and drawing of 2x1.5 sq.mm. FRLSH grade copper wires with 1.5 sq.mm earth wire in provided concealed pipes for concealed type light/bell point wiring and terminating on modular accessories in box for point wiring for light/fan/bell as per specification No: WG-PW/CW	Point	444
1-7-10 (New)	Supplying and drawing of 2x1.5 sq.mm. FRLSH grade copper wires with 1.5 sq.mm earth wire in provided concealed pipes for concealed type fan point wiring and terminating on modular accessories in box as per specification No: WG-PW/CW	Point	532
1-7-11	Supplying and drawing of 2x1.5 sq.mm. FRLSH grade copper wires with 1.5 sq.mm earth wire in provided concealed pipes and terminating on modular accessories in box for point wiring for independent plug as per specification No WG-PW/SW	Point	529
1-7-12	Point wiring for light/bell/exhaust fan in 20 mm FRLS grade HMS PVC conduit with 1.5 sq.mm (2+1E) FRLSH grade copper wire, modular type switch, earthing and required accessories as per specification No: WG-PW/SW .	Point	776
1-7-13	Point wiring for ceiling fan in 20 mm FRLS grade HMS PVC conduit with 1.5 sq.mm (2+1E) FRLSH grade copper wire, modular type switch, earthing and required accessories as per specification No: WG-PW/SW	Point	859
1-7-14	Point wiring for independent plug in 20 mm FRLS grade HMS PVC conduit with 1.5 sq.mm (2+1E) FRLSH grade copper wire, modular type switch, earthing and required accessories as per specification No: WG-PW/SW	Point	1001
1-7-15	Point wiring for light/bell hybrid type (Surface type under false ceiling and concealed type for drops & switch boards on walls) in min 20 mm PVC conduit / casing n capping with 1.5 sq.mm. (2+1E) FRLSH grade copper wires, modular type switch, earthing and required accessories as per specification No: WG-PW/HW	Point	550
1-7-16 (New)	Point wiring for ceiling fan (Surface type under false ceiling and concealed type for drops & switch boards on walls) in min 20 mm PVC conduit / casing n capping with 1.5 sq.mm. (2+1E) FRLSH grade copper wires, modular type switch, earthing and required accessories as per specification No: WG-PW/HW	Point	638

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
1-7-17	Point wiring in PVC trunking (casing-capping) with 1.5 sq.mm (2+1E) FRLSH grade copper wire, flush type switch, earthing and required accessories as per specification No: WG-PW/SW	Point	365
1-7-18	Point wiring for independent plug in PVC trunking (casing-capping) with 1.5 sq.mm FRLSH grade copper wire, flush type switch, earthing and required accessories as per specification No: WG-PW/SW	Point	434
1-7-19	Point wiring for light/bell/exhaust fan in PVC trunking (casing-capping) with 1.5 sq.mm (2+1E) FRLSH grade copper wire, modular type switch, earthing and required accessories as per specification No: WG-PW/SW	Point	552
1-7-20 (New)	Point wiring for ceiling fan in PVC trunking (casing-capping) with 1.5 sq.mm (2+1E) FRLSH grade copper wire, modular type switch, earthing and required accessories as per specification No: WG-PW/SW	Point	610
1-7-21	Point wiring for independent plug in PVC trunking (casing-capping) with 1.5 sq.mm (2+1E) FRLSH grade copper wire, modular type switch, earthing and required accessories as per specification No: WG-PW/SW	Point	748
1-7-22	Secondary point wiring for additional light/ bell point, concealed type in min 20 mm FRLS grade PVC conduit with 1.5 sq.mm. (2+1E) FRLSH grade copper wires with required accessories as per specification No: WG-PW/CW	Point	204
1-7-23	Secondary point wiring for additional light/ bell point in PVC trunking (casing-capping) with 1.5 sq.mm (2+1E) FRLSH grade copper wire with required accessories as per specification No: WG-PW/SW	Point	197
1-7-24	Secondary point wiring for additional light/ bell point in min 20 mm metal conduit with 1.5 sq.mm (2+1E) FRLSH grade copper wire with required accessories as per specification No: WG-PW/SW	Point	351
1-7-25	Wiring for plug on board with flush Switch socket , copper wiring and earthing as per specification No: WG-PW/SW	Point	116
1-7-26	Wiring for plug on board with Switch socket surface/concealed type , copper wiring and earthing and with modular accessories as per specification No: WG-PW/CW	Point	386
1-7-27	Concealing of provided M.S./ PVC switch box in wall with finishing as per specification No: WG-PW/CW	Each	66
1-7-28	Refilling the holes for dismantled point wiring with cement mortar & finishing.	Point	36
Note:-	<p>1) In case length of point wiring exceeds 6 meters, add 10% of rate, for every additional length of 1 metre or part thereof.</p> <p>2)Point wiring starts from mainboard/intermediate switch board and suitable circuit mains are to be considered from D.B. to first board and between boards.</p> <p>3)For point wiring in stair case with 2 way control point increase rate by 50% of point wiring.</p> <p>4) for point wiring on stone wall add Rs. 15.00 per point wiring.</p> <p>5) Acrylic sheet of appropriate size shall be provided for covering at wall entries.</p> <p>6) For concealed type wiring multistranded wires shall be used.</p> <p>7) Earth wire of 1.5 sq.mm. shall be terminated in each point.</p>		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	8) For point wiring in FRLS wire subtract 2% from rate of point wiring in FRLSH wire.		
	<i>1.8 Telephone, Audio and Video Wiring (WG-TW/TW)</i>		
1-8-1	Supplying & erecting 2 pair telephone copper cable 0.5 mm dia. with high density polyethylene insulation, polyester taped, Nylon Rip Cord & grey colour sheathed with FR PVC, conforming to ITD specification S/WS 113C laid in provided PVC casing capping/conduit as per specification No. WG-TW	m	23
1-8-2	Supplying & erecting 3 pair telephone copper cable 0.5 mm dia. with high density polyethylene insulation, polyester taped, Nylon Rip Cord & grey colour sheathed with FR PVC, conforming to ITD specification S/WS 113C laid in provided PVC casing capping/conduit as per specification No. WG-TW	m	31
1-8-3	Supplying & erecting 4 pair telephone copper cable 0.5 mm dia. with high density polyethylene insulation, polyester taped, Nylon Rip Cord & grey colour sheathed with FR PVC, conforming to ITD specification S/WS 113C laid in provided PVC casing capping/conduit as per specification No. WG-TW	m	40
1-8-4	Supplying & erecting 5 pair telephone copper cable 0.5 mm dia. with high density polyethylene insulation, polyester taped, Nylon Rip Cord & grey colour sheathed with FR PVC, conforming to ITD specification S/WS 113C laid in provided PVC casing capping/conduit as per specification No. WG-TW	m	49
1-8-5	Supplying & erecting 10 pair telephone copper cable 0.5 mm dia. with high density polyethylene insulation, polyester taped, Nylon Rip Cord & grey colour sheathed with FR PVC, conforming to ITD specification S/WS 113C laid in provided PVC casing capping/conduit as per specification No. WG-TW	m	76
1-8-6	Supplying & erecting 20 pair telephone copper cable 0.5 mm dia. with high density polyethylene insulation, polyester taped, Nylon Rip Cord & grey colour sheathed with FR PVC, conforming to ITD specification S/WS 113C laid in provided PVC casing capping/conduit as per specification No. WG-TW	m	142
1-8-7	Supplying & erecting 50 pair telephone copper cable 0.5 mm dia. with high density polyethylene insulation, polyester taped, Nylon Rip Cord & grey colour sheathed with FR PVC, conforming to ITD specification S/WS 113C laid in provided PVC casing capping/conduit as per specification No. WG-TW	m	337
1-8-8	Supplying & erecting 100 pair telephone copper cable 0.5 mm dia. with high density polyethylene insulation, polyester taped, Nylon Rip Cord & grey colour sheathed with FR PVC, conforming to ITD specification S/WS 113C laid in provided PVC casing capping/conduit as per specification No. WG-TW	m	660
1-8-9	Supplying & erecting 10 pair, 0.5mm dia, jelly filled unarmoured telephone copper cable with poly-al laminate moisture barrier, laid in provided PVC casing capping/conduit as per specification No. WG-TW	m	104
1-8-10	Supplying & erecting 20 pair, 0.5mm dia, jelly filled unarmoured telephone copper cable with poly-al laminate moisture barrier, laid in provided PVC casing capping/conduit as per specification No. WG-TW	m	173

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
1-8-11	Supplying & erecting 50 pair, 0.5mm dia, jelly filled unarmoured telephone copper cable with poly-al laminate moisture barrier, laid in provided PVC casing capping/conduit as per specification No. WG-TW	m	346
1-8-12	Supplying & erecting 100 pair, 0.5mm dia, jelly filled unarmoured telephone copper cable with poly-al laminate moisture barrier, laid in provided PVC casing capping/conduit as per specification No. WG-TW	m	509
1-8-13	Supplying & erecting 10 pair, 0.5 mm dia. jelly filled armoured telephone copper cable with poly-al laminate moisture barrier, polythene sheathed, G.S.Tape armoured polythene jacketed having laid in provided trench as per specification No. WG-TW	m	144
1-8-14	Supplying & erecting 20 pair, 0.5 mm dia. jelly filled armoured telephone copper cable with poly-al laminate moisture barrier, polythene sheathed, G.S.Tape armoured polythene jacketed having laid in provided trench as per specification No. WG-TW	m	204
1-8-15	Supplying & erecting 50 pair, 0.5 mm dia. jelly filled armoured telephone copper cable with poly-al laminate moisture barrier, polythene sheathed, G.S.Tape armoured polythene jacketed having laid in provided trench as per specification No. WG-TW	m	411
1-8-16	Supplying & erecting 100 pair, 0.5 mm dia. jelly filled armoured telephone copper cable with poly-al laminate moisture barrier, polythene sheathed, G.S.Tape armoured polythene jacketed having laid in provided trench as per specification No. WG-TW	m	752
1-8-17	Supplying & erecting 0.5 mm dia, copper jumper wire as per specification No. WG-TW	m	22
1-8-18	Supplying & erecting co-axial copper cable low voltage grade tri-shielded RG-11 as per specification No. WG-TW	m	70
1-8-19	Supplying & erecting co-axial copper cable low voltage grade tri-shielded RG-6 as per specification No. WG-TW	m	47
1-8-20	Supplying and erecting 15m VGA cord low voltage grade to be laid in provided conduits and terminating with male/female VGA connectors complete.	Each	2678
1-8-21	Supplying and erecting 3m HDMI cord low voltage grade minimum 4k compliant to be laid in provided conduits with male/female 19 pin HDMI connectors complete.	Each	1246
1-8-22	Supplying and erecting 5m HDMI cord low voltage grade minimum 4k compliant to be laid in provided conduits with male/female 19 pin HDMI connectors complete.	Each	2259
1-8-23	Supplying and erecting 10m HDMI cord low voltage grade minimum 4k compliant to be laid in provided conduits with male/female 19 pin HDMI connectors complete.	Each	4235
1-8-24	Supplying and erecting 15m HDMI cord low voltage grade minimum 4k compliant to be laid in provided conduits with male/female 19 pin HDMI connectors complete.	Each	4996
1-8-25	Supplying and erecting 20m HDMI cord low voltage grade minimum 4k compliant to be laid in provided conduits with male/female 19 pin HDMI connectors complete.	Each	6524

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
1-8-26	Supplying and erecting 25m HDMI cord low voltage grade minimum 4k compliant to be laid in provided conduits with male/female 19 pin HDMI connectors complete.	Each	9814
1-8-27	Supplying and erecting 15m Audio Video cord low voltage grade as per specification with required 3RCA x 3RCA connector complete.	Each	3554
1-8-28	Supplying & erecting HDMI Extender Over RJ45 Ethernet Cable Cat 6, 60m/200ft complete.	Each	5736
1-8-29	Supplying, installing, testing & commissioning of DVI to HDMI Convertor high-speed category, supporting full HD 1080p, 2K and 4K video up to 30 ft length, 3D having 24k gold-plated 19-pin Type-A connectors with high-flex CL3-rated jacket, RoHS compliant complete.	Each	7233
<u>1.9 Telephone Accessories (WG-TW/TA)</u>			
1-9-1	Supplying, erecting & commissioning MDF Box 50x50 pairs made from min. 1.5mm thick MS sheet as per specification no. WG-TW	Each	2192
1-9-2	Supplying, erecting & commissioning MDF Box 100x100 pairs made from min. 1.5mm thick MS sheet as per specification no. WG-TW	Each	3553
1-9-3	Supplying, erecting & commissioning MDF Box 150x150 pairs made from min. 1.5mm thick MS sheet as per specification no. WG-TW	Each	4972
1-9-4	Supplying, erecting & commissioning MDF Box 200x200 pairs made from min. 1.5mm thick MS sheet as per specification no. WG-TW	Each	7233
1-9-5	Supplying, erecting & commissioning MDF Box 250x250 pairs made from min. 1.5mm thick MS sheet as per specification no. WG-TW	Each	9193
1-9-6	Supplying, erecting & commissioning MDF Box 300x300 pairs made from min. 1.5mm thick MS sheet as per specification no. WG-TW	Each	10473
1-9-7	Supplying, erecting & commissioning MDF Box 400x400 pairs made from min. 1.5mm thick MS sheet as per specification no. WG-TW	Each	14266
1-9-8	Supplying, erecting & commissioning MDF Box 500x500 pairs made from min. 1.5mm thick MS sheet as per specification no. WG-TW	Each	17249
1-9-9	Supplying, erecting & commissioning MDF Box 600x600 pairs made from min. 1.5mm thick MS sheet as per specification no. WG-TW	Each	20662
1-9-10	Supplying, erecting & commissioning MDF Box 800x800 pairs made from min. 1.5mm thick MS sheet as per specification no. WG-TW	Each	26595
1-9-11	Supplying, erecting & commissioning 10 pairs FR junction box with moulded plastic enclosure as per specification no. WG-TW	Each	708
1-9-12	Supplying, erecting & commissioning 20 pairs FR junction box with moulded plastic enclosure as per specification no. WG-TW	Each	856
1-9-13	Supplying, erecting & commissioning 30 pairs FR junction box with moulded plastic enclosure as per specification no. WG-TW	Each	1148
1-9-14	Supplying, erecting & commissioning 40 pairs FR junction box with moulded plastic enclosure as per specification no. WG-TW	Each	1256
1-9-15	Supplying, erecting & commissioning 50 pairs FR junction box with moulded plastic enclosure as per specification no. WG-TW	Each	1482
1-9-16	Supplying, erecting & commissioning 100 pairs M.S. junction box made from min. 1.5mm thick MS sheet as per specification no. WG-TW	Each	2310
1-9-17	Supplying, erecting & commissioning 150 pairs M.S. junction box made from min. 1.5mm thick MS sheet as per specification no. WG-TW	Each	2921

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
1-9-18	Supplying, erecting & commissioning 10 pair module for connection & disconnection of telephone cable as per specification no. WG-TW	Each	365
1-9-19	Supplying & erecting over voltage protection magazine suitable for 10 pair as per specification no. WG-TW	Each	396
1-9-20	Supplying & erecting rosette box RJ type Bakelite box on wall with LED indication duly connected as per specification no. WG-TW	Each	114
1-9-21	Supplying and erecting broadband splitter unit with 1 input & 2 output RJ 11 female connectors complete.	Each	273
1-9-22	Supplying, installing, testing & commissioning analogue type EPABX of 3 x 8 extension complete.	Job	14699
1-9-23	Supplying, installing, testing & commissioning analogue type EPABX of 3 x 8 extension complete with CLI and Voice DISA (Direct inward station access) Expandable upto 32 Extension as per specification No. WG-TW .	Job	17328
1-9-24	Supplying, installing, testing & commissioning digital (hybrid) type EPABX of 3 x 8 extensions complete.	Job	22498
1-9-25	Supplying, installing, testing & commissioning digital (hybrid) type EPABX of 6 x 16 extension complete.	Job	44323
1-9-26	Supplying and installing, testing & commissioning of digital (hybrid) type EPABX of 6 x 32 extensions suitable upto 96 extensions complete.	Job	60679
1-9-27	Supplying, installing, testing & commissioning IP EPABX for 10 extensions complete.	Job	28902
1-9-28	Supplying, installing, testing & commissioning push button telephone instrument desk top unit as per specification complete	Each	771
1-9-29	Supplying, installing, testing & commissioning push button telephone instrument desk top/wall mount with caller ID & Speaker unit as per specification complete.	Each	993
1-9-30	Supplying, installing, testing & commissioning IP telephone instrument as per specification complete.	Each	7069
1-9-31	Supplying, installing, testing & commissioning analogue type 1+1 basic twin instrument telephone set without display complete	Each	4008
1-9-32	Supplying, installing, testing & commissioning analogue type 1+1 cordless twin instrument telephone set with speaker phone and display complete	Each	5448
1-9-33	Supplying & installing expansion cabinet for extension of digital hybrid EPABX to expand system by 32 ports with programming and configuration of extensions and Direct lines with required accessories complete.	Job	43571
Note :-	<p>1) Add Rs. 38159.00 for additional 16 extension card for digital (hybrid) type EPABX</p> <p>2) Add Rs. 19032.00 for additional 8 extension card for digital (hybrid) type EPABX</p> <p>3) Add Rs. 22025.00 for additional 8 trunks lines card for digital (hybrid) type EPABX</p> <p>4) Minimum one digital key telephone instrument is essential for commissioning digital type EPABX</p>		
<u>1.10 ELV Cabling (WG-COC)</u>			
1-10-1	Supplying and installing cat-6 cable suitable for networking as per specification no. WG-COC/NC	m	53
1-10-2	Supplying and installing cat-6 LSZH cable suitable for networking as per specification no. WG-COC/NC	m	66

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
1-10-3 (New)	Supplying and installing enhanced cat-6 cable with 4-connector channel, performance test report as per ANSI/TIA-568.2-D suitable for networking complete as per specification.	m	66
1-10-4	Supplying and installing enhanced cat-6 LSZH cable with 4-connector channel Performance test report as per ANSI/TIA-568.2-D suitable for networking complete as per specification.	m	77
1-10-5	Supplying and installing cat-6 STP cable suitable for networking complete as per specification.	m	96
1-10-6	Supplying and installing cat-6 cable with rodent proof and anti termite jacket suitable for networking as per specification No. WG-COC/NC	m	126
1-10-7	Supplying and installing cat-6 armoured cable with ECCS tape suitable for networking as per specification No. WG-COC/NC	m	124
1-10-8	Supplying and erecting LSZH armoured multimode optical fibre cable with 6 fibres , core dia 50/125 μm (OM3), suitable upto 10 GBPS , ethernet distance at 850 nm of wavelength, on wall/ceiling or laid in provided pipe/trench as per specification no. WG-COC/OFC LSZH	m	200
1-10-9	Supplying and installing armoured single mode optical fibre cable with 6 fiber , core dia 50/125 μm (OS1/OS2) 10/40 GBPS speed in provided underground HDPE pipe complete.	m	104
1-10-10	Supplying and installing armoured single mode optical fibre cable 12 fiber , core dia 50/125 μm . (OS1/OS2) 10/40 GBPS speed in provided underground HDPE pipe complete.	m	112
1-10-11	Supplying and erecting LSZH armoured multimode optical fibre cable with 12 fibres , core dia 50/125 μm (OM3), suitable up to 10 GBPS ethernet distance at 850 nm of wavelength, on wall/ceiling or laid in provided pipe/trench as per specification No. WG-COC/OFC	m	319
1-10-12	Supplying and erecting LSZH armoured multimode optical fibre cable with 24 fibres , core dia 50/125 μm (OM3), suitable up to 10 GBPS ethernet distance at 850 nm of wavelength, on wall/ceiling or laid in provided pipe/trench as per specification No. WG-COC/OFC	m	478
1-10-13	Supplying and erecting LSZH armoured multimode optical fibre cable with 6 fibres , core dia 50/125 μm (OM4) suitable up to 10 GBPS ethernet distance at 850 nm of wavelength, on wall/ceiling or laid in provided pipe/trench as per specification No. WG-COC/OFC	m	1202
1-10-14	Supplying and erecting LSZH armoured multimode optical fibre cable with 12 fibres , core dia 50/125 μm (OM4) suitable up to 10 GBPS ethernet distance at 850 nm of wavelength, on wall/ceiling or laid in provided pipe/trench as per specification No. WG-COC/OFC	m	2024
1-10-15	Supplying and erecting LSZH armoured multimode Optical Fibre Cable with 24 fibres , core dia 50/125 μm (OM4) suitable up to 10 GBPS ethernet distance at 850 nm of wavelength, on wall/ceiling or laid in provided pipe/trench as per specification No. WG-COC/OFC	m	3450
1-10-16	Supplying and fixing 1 m UTP patch cord of Cat 6 type in position as per specification No. WG-COC/PC	Each	233
1-10-17 (New)	Supplying and fixing 1 m length, UTP patch cord of enhanced Cat 6 type with 4-connector channel, performance test report as per ANSI/TIA-568.2-D in position as per specification No. WG-COC/PC	Each	254
1-10-18	Supplying and fixing 2 m UTP patch cord of cat 6 type in position as per specification No. WG-COC/PC	Each	323

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
1-10-19	Supplying and fixing 3 m UTP patch cord of Cat 6 type in position as per specification No. WG-COC/PC	Each	335
1-10-20 (New)	Supplying and fixing 3 m UTP patch cord of enhanced Cat 6 type with 4-connector channel, performance test report as per ANSI/TIA-568.2-D in position as per specification No. WG-COC/PC	Each	443
1-10-21	Supplying and installing 3 m fibre patch cord duplex single mode for OS1/OS2 complete.	Each	2437
1-10-22	Supplying and plugging 3 m fibre patch cord LC-SC MM (50) OM3 LSZH duplex complete as per specification no. WG-COC/FPC	Each	2655
1-10-23	Supplying and plugging 3 m fibre patch cord LC-SC MM (50) OM4 LSZH duplex complete as per specification no. WG-COC/FPC	Each	3041
1-10-24	Supplying and plugging 3 m fibre patch cord LC-LC MM (50) OM3 LSZH duplex complete as per specification no. WG-COC/FPC	Each	3203
1-10-25	Supplying and plugging 3 m fibre patch cord LC-LC MM (50) OM4 LSZH duplex complete as per specification no. WG-COC/FPC	Each	4728
1-10-26	Supplying and installing 6 port single mode fibre adapter with plate complete.	Each	4423
1-10-27	Supplying and installing single mode simplex pigtail with SC/LC splicing complete.	Each	780
1-10-28 (New)	Supplying and fixing multimode pigtails with SC/SC type splicing for (OM4) complete.	Each	988
1-10-29	Supplying and fixing IP66 enclosure for fibre splicing complete.	Each	9175
<i>1.11 Networking Components (WG- NWC)</i>			
1-11-1	Supplying, fixing, and configuring 8-ports 1 G unmanaged gigabit POE switch erected in provided rack complete.	Each	17973
1-11-2	Supplying, fixing, and configuring 8-ports managed gigabit, Layer-2 switch, 10/100/1000 base-T, POE smart switch plus 2 SFP erected in provided rack complete.	Each	25482
1-11-3	Supplying, fixing, and configuring 24 ports, POE switch in provided rack as per specification No. WG-NWC/ENS	Each	52048
1-11-4 (New)	Supplying, fixing, and configuring 24 ports with 4 (SFP+) port, ethernet managed switch with web view/CLI, 6KV surge protection on ethernet port and console port for management in provided rack as per specification no. WG-NWC/GBS	Each	40653
1-11-5	Supplying, fixing, and configuring 20 SFP ports + 4 Combo SFP 10/100/1000 Base-T erected in provided rack complete.	Each	204412
1-11-6	Supplying, fixing, and configuring 20 Ports+4G Combo, Managed Layer 2, POE Switch erected in provided rack complete.	Each	121114
1-11-7	Supplying, fixing, and configuring 20 Ports + 4 SFP combo, Layer 2, GB managed ethernet switch, with web view/CLI erected in provided rack complete	Each	60877
1-11-8	Supplying, fixing, and configuring 20 (1G-RJ45) ports + 4 combo 1G ports + 4 10G (SFP+) ports, Layer 3 switch, SI Image, 6KV surge protection on ethernet port and console port for management erected in provided rack complete.	Each	253543

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
1-11-9 (New)	Supplying, fixing, and configuring 24 ports + (4 SFP+) POE switch , 370W, 6KV surge protection on ethernet port and console port for management on provided rack as per specification No. WG-NWC/ENS	Each	105576
1-11-10 (New)	Supplying, fixing, and configuring 24 ports + 4 (SFP+) port, Managed Layer 2, POE Switch of , 370W, 6KV surge protection on ethernet port and console port for management erected in provided rack complete.	Each	166872
1-11-11 (New)	Supplying, fixing, and configuring 24 ports + (4 SFP+) ports Managed Layer 2 switch of and web View/CLI, 6KV surge protection on ethernet port and console port for management as per specification complete.	Each	89006
1-11-12	Supplying, fixing, and configuring 48 Ports managed gigabit switch 10/100/1000 Mbps + 4 SFP ports erected in provided rack complete.	Each	70967
1-11-13	Supplying, fixing, and configuring 48 ports managed gigabit switch Layer 2 with 48 10/100/1000 Base-T ports management switch with 4 10GE SFP+ ports erected in provided rack complete.	Each	201673
1-11-14	Supplying, fixing, and configuring min. 580 watt redundant power supply system erected in provided rack complete.	Each	89620
1-11-15	Supplying, fixing, and configuring 10G Base -SR (SFP+) simplex MM transceiver erected in provided rack complete.	Each	29027
1-11-16	Supplying, fixing, and configuring 1-port mini-GBIC SX MM fibre transceiver (up to 550m, support 3.3V power) erected in provided rack complete.	Each	10430
1-11-17	Supplying, fixing, and configuring broadband ADSL router with all accessories, on provided rack as per specification No. WG-NWC/ADSL	Each	4882
1-11-18	Supplying, fixing, and configuring modularised multi-service router 802.11/a/n/ac unified Wave 2.5 GHz, with RJ-45 port, supporting 1 to 13 channels for 2.4 GHz, with unified wireless access point complete.	Each	170077
1-11-19	Supplying, fixing, and configuring dual-path serial card single-lane(x1)PCI-Express end-point controller, PHY integrated, compliant with PCI Express 2.0 Gen1 & PCI power management 1.2 supporting for all operating system complete.	Each	39983
1-11-20	Supplying, fixing, and configuring DB-60 (male) to 2 x DB-34 (male) connector cable for V.35 DTE complete.	Each	3537
<u>1.12 Networking Accessories (WG-NAS)</u>			
1-12-1	Supplying, installing and testing UTP connector (RJ-45) as per specification No. WG-NAS/UTPC.	Each	79
1-12-2	Supplying and fixing tool-less IO (Ethernet) flush/surface type in provided modular box as per specification no. WG-NAS/IO	Each	506
1-12-3	Supplying and fixing tool-less shutter keystone jack (RJ-45) in provided patch panel complete as per specification no. WG-NAS/KJ	Each	113
1-12-4	Supplying and fixing 24 port patch panel with tool-less keystone jacks in provided U Rack complete as per specification no. WG-NAS/PP	Each	10616
1-12-5	Supplying and fixing 12 ports light guide unloaded interconnect unit, rack mounted type , with adapter panel for termination of optical fibre cables in provided U rack complete as per specification no. WG-NAS/ LIU	Each	4853

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
1-12-6	Supplying and fixing 12 ports light guide unloaded interconnect unit, wall mounted type , with adapter panel for termination of optical fibre cables on wall in provided U rack complete as per specification no. WG-NAS/ LIU	Each	5059
1-12-7	Supplying and fixing 24 ports light guide unloaded interconnect unit, rack mounted type , with adapter panel for termination of optical fibre cables in provided U rack complete as per specification no. WG-NAS/ LIU	Each	5333
1-12-8	Supplying and fixing 24 ports light guide unloaded interconnect unit, wall mounted type , with adapter panel for termination of optical fibre cables on wall in provided U rack complete as per specification no. WG-NAS/ LIU	Each	5698
1-12-9	Supplying and fixing 1 x 6 duplex adapter panel-SC complete.	Each	346
1-12-10	Supplying and fixing 1 x 12 duplex adapter panel - SC complete	Each	381
1-12-11	Supplying and fixing SC/LC type multimode duplex adapter to couple two connectors between OFC & Fibre switch/Fibre module as per specification no. WG-NAS/MMA	Each	553
1-12-12	Supplying and fixing SC/SC type multimode pigtails (OM3) for LIU to terminate OFC in LIU as per specification No. WG-NAS/LIU2	Each	737
1-12-13	Supplying and fixing SC/LC type multimode pigtails (OM3) for LIU to terminate OFC in LIU as per specification No. WG-NAS/LIU2	Each	826
1-12-14	Supplying and fixing SC/LC type multimode pigtails (OM4) as per specification complete. WG-NAS/LIU2	Each	1273
1-12-15	Supplying and fixing POE adaptor to provide DC supply to ethernet devices as per specification No. WG-NAS/PEA	Each	5025
1-12-16	Supplying and fixing Power Distribution Unit for networking rack comprises of 6/16A (6 Nos. sockets), 25 A modular MCB , appropriate rating fuse and indicator lamp, enclosed in black powder coated metal with necessary arrangement for fixing as per specification No. WG-NAS/RAK	Each	4940
1-12-17	Supplying and fixing 6U wall mount rack (Dimension-DxWxH – 500x600x367 mm) as per specification No. WG-NAS/RAK	Each	8324
1-12-18	Supplying and fixing 9U wall mount rack (Dimension-DxWxH – 500x600x500 mm) as per specification No. WG-NAS/RAK	Each	9066
1-12-19	Supplying and fixing 12U wall mount rack (Dimension-DxWxH – 500x600x635 mm) as per specification No. WG-NAS/RAK	Each	10771
1-12-20	Supplying and fixing 15U wall mount rack (Dimension-DxWxH – 500x600x767 mm) as per specification No. WG-NAS/RAK	Each	12329
1-12-21	Supplying and fixing 17U floor mount rack (Dimension-DxWxH – 800x600x954 mm) as per specification No. WG-NAS/RAK	Each	35409
1-12-22	Supplying and fixing 22 U floor mount rack (Dimension-DxWxH – 800x600x1176 mm) as per specification No. WG-NAS/RAK	Each	42338
1-12-23	Supplying and fixing 24 U floor mount rack (Dimension-DxWxH – 800x600x1265 mm) as per specification No. WG-NAS/RAK	Each	49619
1-12-24	Supplying and fixing 27 U floor mount rack (Dimension-DxWxH - 800X600x1398 mm) as per specification No. WG-NAS/RAK	Each	53136
1-12-25	Supplying and fixing 32 U floor mount server Rack (Dimension-DxWxH - 800X1000x1620 mm) as per specification No. WG-NAS/RAK	Each	71496
1-12-26	Supplying and fixing 36U floor mount server rack (Dimension-DxWxH – 800x600x1600 mm) as per specification No. WG-NAS/RAK	Each	60177

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
1-12-27	Supplying and fixing 36 U floor mount server Rack (Dimension-DxWxH - 800X1000 x1820mm) as per specification No. WG-NAS/RAK	Each	76631
1-12-28	Supplying and fixing 42U floor mount server rack (Dimension-DxWxH – 800x600x1866 mm) as per specification No. WG-NAS/RAK	Each	76620
1-12-29	Supplying and fixing 42 U floor mount server rack (Dimension-DxWxH – 800x1000x2070 mm) as per specification No. WG-NAS/RAK	Each	84963
1-12-30	Supplying and fixing 6 U IP66 outdoor mount server rack with pole mount bracket (Dimension-DxWxH - 500x600x350 mm) as per specification No. WG-NAS/RAK	Each	30886
1-12-31	Supplying and fixing 9U IP66 outdoor mount server rack with pole mount bracket (Dimension- DxWxH - 500x600x450 mm) as per specification No. WG-NAS/RAK	Each	37289
1-12-32	Supplying and fixing wireless n 150 desktop adapter in provided computer as per specification No. WG-NAS/LANC2	Each	1427
1-12-33	Supplying and fixing manageable wireless 2x2 Mesh Router , 50 m range, dual-band 802.11 n/ac unified wireless access point complete as per specification no. WG-NAS/LAP1	Each	25924
1-12-34	Supplying and fixing single band POE 2x2 Mesh Router , 802.11 n/ac 2.4 GHz, standalone/software based access point complete.	Each	46517
1-12-35	Supplying and fixing dual-band manageable wireless 3x3 Mesh Router , high performance, 802.11 n/ac unified, concurrent access point with POE in networking as per specification no. WG-NAS/LAP2	Each	30423
1-12-36	Supplying and fixing dual-band POE 3x3 Mesh Router , 802.11 n/ac, standalone/software based access point complete.	Each	36089
1-12-37	Supplying, installing and activating physical license pack software for multiple access point with management, configuration and trouble shooting for all access point in network complete.	Each	97337
1-12-38	Supplying, fixing, and configuring media convertor 1000 Base-T to 1000 base-SX SC multi-mode media converter (550m) complete.	Each	12916
<u>1.13 Dismantling (WG-DM)</u>			
1-13-1	Dismantling the existing light, fan, bell, clock, independent plug point, wiring including circuit mains of all types along with accessories etc. complete as per specification No: WG-DM/PW	Point	7
1-13-2	Dismantling the existing Telephone / LAN / WAN / TV cables and wires of all sizes along with casing-capping / conduit complete as per specification No: WG-DM/PW	m	5
1-13-3	Dismantling the existing aluminium/copper mains, sub-mains wiring upto 10 sq.mm. along with accessories etc. complete as per specification No: WG-DM/PW	m	3
Note	1) Dismantled material of Point wiring / circuit mains/ sub-mains / telephone / LAN / WAN / TV wires / cables shall be retained by contractor.		

Chapter: 2
Fittings (FG)

2.1 Indoor LED Fittings	(FG-IDF/LED)
2.2 Industrial Fittings	(FG-IDF)
2.3 Accessories for Indoor Fittings	(FG-AS)
2.4 Outdoor Fittings	(FG-ODF/LED)
2.5 Decorative Outdoor Fitting	(FG-ODF)
2.6 Highbay LED Fittings	(FG-ODF/LED)
2.7 Accessories for Outdoor Fittings	(FG-AS)
2.8 Lamps and Tubes for Indoor & Outdoor	(FG-LP)
2.9 Aviation Light Fitting	
2.10 Fans	(FG-FN)
2.11 Accessories for Fans	(FG-FN)
2.12 Dismantling	

Chapter: 2 Fittings (FG)

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>2.1 Indoor LED Fittings (FG-IDF/LED)</u>			
2-1-1	Supplying & erecting decorative pre-wired box type fitting/batten suitable for 4 feet, T8 LED tube light (excluding tube light).	Each	281
2-1-2 (New)	Supplying and erecting LED square / circular Max. 7W down lighter/ Panel Light having pressure die-cast aluminium housing, polystyrene diffuser having system lumens output of Min. 770 Lumens , min. efficacy of 110 lumen/W, CRI>80, CCT upto 6500K, Beam Angle of 120 deg., max. ripple of 5%, THD<10%, p.f. >0.95, operating range of 120-270V, surge protection of 2.5 kV, Life class of 50,000 Hrs. at L70B50, including driver, having mounting arrangement with board for surface type or spring loaded mounting clips complete with 3 years warranty.	Each	653
2-1-3 (New)	Supplying and erecting LED square / circular Max. 11 W down lighter/Panel Light having pressure die-cast aluminium housing, polystyrene diffuser having system lumens output of Min. 1200 Lumens , min. efficacy of 110 lumen/W, CRI>80, CCT upto 6500K, Beam Angle of 120 deg., max. ripple of 5%, THD<10%, p.f. >0.95, operating range of 120-270V, surge protection of 2.5 kV, Life class of 50,000 Hrs. at L70B50, including driver, having mounting arrangement with board for surface type or spring loaded mounting clips complete with 3 years warranty.	Each	796
2-1-4 (New)	Supplying and erecting LED square / circular Max. 14 W down lighter/Panel Light having pressure die-cast aluminium housing, polystyrene diffuser having system lumens output of Min. 1500 Lumens , min. efficacy of 110 lumen/W, CRI>80, CCT upto 6500K, Beam Angle of 120 deg., max. ripple of 5%, THD<10%, p.f. >0.95, operating range of 120-270V, surge protection of 2.5 kV, Life class of 50,000 Hrs. at L70B50, including driver, having mounting arrangement with board for surface type or spring loaded mounting clips complete with 3 years warranty.	Each	1213
2-1-5 (New)	Supplying and erecting LED square / circular Max. 18 W down lighter/ Panel Light having pressure die-cast aluminium housing, polystyrene diffuser having system lumens output of Min. 2000 Lumens , min. efficacy of 110 lumen/W, CRI>80, CCT upto 6500K, Beam Angle of 120 deg., max. ripple of 5%, THD<10%, p.f. >0.95, operating range of 120-270V, surge protection of 2.5 kV, Life class of 50,000 Hrs. at L70B50, including driver, having mounting arrangement with board for surface type or spring loaded mounting clips complete with 3 years warranty.	Each	1533
2-1-6 (New)	Supplying and erecting LED square / circular Max. 25 W down lighter/ Panel Light having pressure die-cast aluminium housing, polystyrene diffuser having system lumens output of Min. 2750 Lumens , min. efficacy of 110 lumen/W, CRI>80, CCT upto 6500K, Beam Angle of 120 deg., max. ripple of 5%, THD<10%, p.f. >0.95, operating range of 120-270V, surge protection of 2.5 kV, Life class of 50,000 Hrs. at L70B50, including driver, having mounting arrangement with board for surface type or spring loaded mounting clips complete with 3 years warranty.	Each	1951

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
2-1-7 (New)	Supplying and erecting LED Panel Light(600mm X 600mm) Max. 30 W having CRCA powder coated housing, polystyrene diffuser having system lumens output of Min. 3600 Lumens , min. efficacy of 120 lumen/W, CRI>80, CCT upto 6500K, Beam Angle of 120 deg., max. ripple of 5%, THD<10%, p.f. >0.95, operating range of 120-270V, surge protection of 2.5 kV, Life class of 50,000 Hrs. at L70B50 including driver, having mounting arrangement with board for surface type or spring loaded mounting clips complete with 3 years warranty.	Each	2524
2-1-8 (New)	Supplying and erecting LED Panel Light(600mm X 600mm) Max. 35 W having CRCA powder coated housing, polystyrene diffuser having system lumens output of Min 4200 Lumens , min. efficacy of 120 lumen/W, CRI>80, CCT upto 6500K, Beam Angle of 120 deg., max. ripple of 5%, THD<10%, p.f. >0.95, operating range of 120-270V, surge protection of 2.5 kV, Life class of 50,000 Hrs. at L70B50 including driver, having mounting arrangement with board for surface type or spring loaded mounting clips complete with 3 years warranty.	Each	2924
2-1-9 (New)	Supplying and erecting rectangular shaped LED Panel Light(1200mm X 300mm) Max. 35 W having CRCA powder coated housing, polystyrene diffuser having system lumens output of Min. 4200 Lumens , min. efficacy of 120 lumen/W, CRI>80, CCT upto 6500K, Beam Angle of 120 deg., max. ripple of 5%, THD<10%, p.f. >0.95, operating range of 120-270V, surge protection of 2.5 kV, Life class of 50,000 Hrs. at L70B50, including driver, having mounting arrangement with board for surface type or spring loaded mounting clips complete with 3 years warranty.	Each	2924
2-1-10 (New)	Supplying and erecting LED Strip light 5m Length Max. 45 W IP20 class having minimum lumens output of 800 Lumens/m , min. efficacy of 90 lumen/W, CRI>80, CCT upto 5000K, Beam Angle of 110 deg., THD<10%, p.f. >0.95, operating range of 230-270V, Life class of 30,000 Hrs. at L70B50, including driver with 1 year warranty.	Each	1906
2-1-11 (New)	Supplying and erecting LED Strip light 5m Length Max. 95 W IP20 class having minimum lumens output of 1600 Lumens/m , min. efficacy of 90 lumen/W, CRI>80, CCT upto 5000K, Beam Angle of 110 deg., THD<10%, p.f. >0.95, operating range of 230-270V, Life class of 30,000 Hrs. at L70B50 including driver with 1 year warranty.	Each	2744
2-1-12	Supplying LED concealed type foot / step light with aluminium body for indoor/outdoor application suitable for 4W-6W LED including driver and erecting by making necessary arrangement / recess in wall to make it flush with surface with 1 year warranty.	Each	1915
2-1-13	Making suitable size recess in any type of false ceiling for erection of flush type down lighter and finishing the background to match the original surface upto 20W.	Each	78
2-1-14	Making suitable size of recess in any type of false ceiling for erection of flush type LED panel light 600mm x 600mm/1200x300mm and finishing the background to match the original ceiling surface.	Each	134
2-1-15	Supplying and erecting bulk head LED fitting max. 10W with high transitivity diffuser with system lumens output of min. 1100 lumens , min. efficacy of 110 lumen/W, CRI>80, CCT upto 6500K, Beam Angle of 120 deg., THD<10%, p.f. >0.95, operating range of 140-260V, in built surge protection of 2.5 kV, Life class of 50,000 Hrs. at L70B50, including driver, IP66, IK09 rated on provided PVC Block / wooden board with 3 years warranty.	Each	1416

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
2-1-16	Supplying and erecting anodized aluminium corridor / passage / mirror light LED fitting (2 feet) Max. 12W with high transitivity diffuser with min. system lumens output of 1200 lumens , min. efficacy of 100 lumen/W, CRI>80, CCT upto 6000K, Beam Angle of 110 deg., Ripple<5%, THD<10%, p.f. >0.95, operating range of 200-270V, surge protection of 2 kV, Life class of 50,000 Hrs. at L70B50, including driver with end caps on provided PVC Block / wooden board with 3 years warranty.	Each	433
2-1-17	Supplying and erecting CRCA powder coated corridor/passage light LED fitting (4 feet) Max. 17W with high transitivity diffuser with system lumens output of Min. 2000 lumens , min. efficacy of 120 lumen/W, CRI>80, CCT upto 6500K, Beam Angle of 120 deg., Ripple<5%, THD<10%, p.f. >0.95, operating range of 120-270V, surge protection of 4 kV, Life class of 50,000 Hrs. at L70B50, including driver, with end caps on provided PVC Block / wooden board with 3 years warranty.	Each	619
2-1-18	Supplying and erecting anodized aluminium corridor / passage light LED fitting (4 feet) Max. 22W with high transitivity diffuser with system lumens output of Min.2200 lumens , min. efficacy of 100 lumen/W, CRI>80, CCT upto 6000K, Beam Angle of 110 deg., Ripple<5%, THD<10%, p.f. >0.95, operating range of 200-270V, surge protection of 2 kV, Life class of 50,000 Hrs. at L70B50, including driver, with end caps on provided PVC Block / wooden board with 3 years warranty.	Each	797
2-1-19 (New)	Supplying and erecting CRCA powder coated corridor / passage light LED fitting (4 feet) Max. 33W with high transitivity diffuser with system lumens output of Min. 4000 lumens , min. efficacy of 120 lumen/W, CRI>80, CCT upto 6500K, Beam Angle of 120 deg., Ripple<5%, THD<10%, p.f. >0.95, operating range of 120-270V, surge protection of 4 kV, Life class of 50,000 Hrs. at L70B50, including driver, with end caps on provided PVC Block / wooden board with 3 years warranty.	Each	1450
2-1-20 (New)	Supplying and erecting CRCA powder coated corridor / passage light LED fitting (4 feet) Max. 50W with high transitivity diffuser with system lumens output of Min. 6000 lumens , min. efficacy of 120 lumen/W, CRI>80, CCT upto 6500K, Beam Angle of 120 deg., Ripple<5%, THD<10%, p.f. >0.95, operating range of 120-270V, surge protection of 4 kV, Life class of 50,000 Hrs. at L70B50, including driver, with end caps on provided PVC Block / wooden board with 3 years warranty.	Each	1806
2-1-21 (New)	Supplying & erecting inverter LED batten 10W tube light fitting with polycarbonate housing , heat sink, integrated HF electronic driver, Min. 2600 mAh Lithium ion Battery with charging time of 8-10 Hours and backup time of Min. 3 hrs. with minimum 25% of initial Watts having luminous efficacy of 100 lumen/watt , CRI>80, CCT of 6500K and THD<=20% having useful life of minimum 25000 hrs. with overheating protection with 2 years warranty.	Each	666
2-1-22 (New)	Supplying & erecting inverter LED batten 20W tube light fitting with polycarbonate housing , heat sink, integrated HF electronic driver, Min. 2600 mAh Lithium ion Battery with charging time of 8-10 Hours and backup time of Min. 3 hrs. with minimum 25% of initial Watts having luminous efficacy of 100 lumen/watt , CRI>80, CCT of 6500K and THD<=20% having useful life of minimum 25000 hrs. with overheating protection with 2 years warranty.	Each	1114

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
2-1-23 (New)	Supplying & erecting UV Fly killer/ bug catcher Light Fitting having 2 x 20W UV Tube Lights to cover min. area of 500 sq.ft with powdered coated M.S./ steel body suitable to work on 230V, AC Supply having top mounting arrangement with SS chain complete and 3 core 1 mtr. flexible wire with 1 year warranty.	Each	5059
2-1-24	Erection of departmentally supplied 4ft / 2ft LED fitting on PVC block connected with necessary leads complete	Each	65
2-1-25	Erection of departmentally supplied surface / recess type decorative fitting with LED on PVC block connected with necessary leads.	Each	106
Note:-	1) Driver and luminaire shall be of same make. 2) LM79 and all other reports of all luminaires shall be from accredited NABL laboratory. 3) Manufacturer Logo shall be embossed on all pressure die cast Luminaires and logo shall not be screen-print / sticker type. 4) All luminaires shall conform to respective IS.		
<u>2.2 Industrial Fitting (FG-IDF)</u>			
2-2-1 (New)	Supplying and erecting IP65 and IK08 rated UV shielded polycarbonate waterproof and dustproof industrial grade LED fitting (4 feet) max. 36W with high transitivity diffuser with system lumens output of min. 4300 lumens , min. efficacy of 120 lumen/W, CRI>80, CCT upto 6500K, Beam Angle of 120 deg, Ripple<5%, THD<10%, p.f. >0.95, operating range of 120-270V, surge protection of 4 kV, Life class of 50,000 Hrs. at L70B50 , IP20 rated, including driver with auto cutoff & auto restart feature at 325V with end caps on PVC Block/wooden board with 3 years warranty.	Each	3396
Note	Reduce rate by Rs. 10/- if fitting is to be erected on existing boards / blocks.		
<u>2.3 Accessories for Indoor Fittings (FG-AS)</u>			
2-3-1	Supplying and erecting low watt loss vacuum impregnated copper choke (VPIT) suitable for FTL upto 20 W as per specification No FG/AS1	Each	242
2-3-2	Supplying and erecting low watt loss vacuum impregnated copper choke (VPIT) suitable for FTL from 24 to 40 W as per specification No. FG/AS1	Each	289
2-3-3	Supplying and erecting electronic ballast , pf > 0.9 or transformer suitable for T5 lamp upto 28 W as per specification No. FG-FG/AS1	Each	239
2-3-4	Supplying and erecting electronic ballast , pf > 0.9 or transformer suitable for FTL upto 40 W as per specification No. FG-FG/AS1	Each	270
2-3-5	Supplying 18 / 20 /36 / 40 W tube starter 230 V as per specification No. FG-FG/AS11	Each	14
2-3-6	Supplying and erecting double suspension heavy duty lacquered iron chain with hooks for erecting fluo. tube light fitting(for erecting various fixtures like FTL, LED, etc) with necessary shielded copper flexible wire three core of 1 sq mm for connecting leads. (for measurements half of the actual length used)	m	49
2-3-7	Supplying and erecting double suspension pipe rod of 16 gauge 20mm.dia H.G. conduit duly threaded and painted with two coats of enamel paint for erection of fluo. tube light fitting with necessary check nuts and shielded copper flexible wire three core of 1 sq mm for connecting leads (for measurements half of the actual length both pipes used)	m	231

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
2-3-8	Supplying and erecting ball suspension plate cast aluminium erected with spring on wooden block in position.	Each	42
2-3-9	Providing and erecting clamps for box type / industrial type fittings with provided suspension down rod of 20 mm dia. H.G. conduit, the clamp shall be made of 25 x 3 (mm) MS flat with cutting, bending, drilling erected properly with necessary nut bolt as per direction.	Each	96
2-3-10	Supplying and fixing wire mesh (Jali) cover suitable for fitting / fan or for any purpose, complete with necessary materials. The jali cover shall be made from good quality G.I. wire mesh size 25 x 25 (mm) and made up of 14 SWG G.I. wire with side / supporting MS strips of suitable size.	Each	467
2-3-11	Supplying and erecting bakelite call bell with 6 cm / buzzer with double coil suitable for 230V complete erected on PVC block.	Each	90
2-3-12	Supplying and erecting gong with double coil suitable for 230V complete erected on polished wooden block.	Each	126
2-3-13	Supplying and erecting ding dong / electronic musical type call bell with heavy duty coil suitable to operate on 230V A.C. supply erected on polished double wooden block/sunmica block of suitable size.	Each	140
2-3-14	Supplying and erecting luminous / modular type call bell indicator with plastic body , heavy duty coil and indicator lamp working on 230V A.C. supply with resetting arrangement complete erected on double wooden/ sunmica board.	Each	273
2-3-15	Supplying and erecting Electronic type cordless call bell erected on T.W. board having portable bell push working on 9V D.C. battery and (effective range upto 45 meter) bell on 250 V A.C. supply.	Each	600
2-3-16	Supplying and erecting condenser 4 microfarad for fluo. Fitting as per specification no FG-FG/AS7.	Each	84
2-3-17	Supplying and erecting electronic type 600 W dimmer complete erected on provided switch board.	Each	212
2-3-18	Supplying and erecting electronic type 300/450 W dimmer complete erected on provided switch board.	Each	185
2-3-19	Supplying and erecting electronic type driver for indoor LED 5W-9W fixtures suitable to operate on 230V A.C. 50 Hz. Having pf>0.95 and THD<10%.	Each	357
2-3-20	Supplying and erecting electronic type driver for indoor LED 10W-18W fixtures suitable to operate on 230V A.C. 50 Hz. Having pf>0.95 and THD<10%.	Each	454
2-3-21	Supplying and erecting electronic type driver for indoor LED 19W-24W fixtures suitable to operate on 230V A.C. 50 Hz. Having pf>0.95 and THD<10%.	Each	681
2-3-22	Supplying and erecting electronic type driver for indoor LED 25W-40W fixtures suitable to operate on 230V A.C. 50 Hz. Having pf>0.95 and THD<10%.	Each	696

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>2.4 Outdoor Fittings (FG-ODF/LED)</u>			
2-4-1	Supplying and erecting integrated LED street light fitting 18 to 22W IP65 & IK08 class having single piece pressure die-cast aluminium housing, having system lumens output of Min. 1800 Lumens , min. efficacy of 100 lumen/W, CRI>70, CCT upto 6500K, THD<10%, p.f. >0.95, operating range of 140-270V, inbuilt surge protection of 10 kV, Life class of 50,000 Hrs. at L70B50, including driver complete with 3 Years warranty as per specification No FG-ODF/FLS2 .	Each	1929
2-4-2	Supplying and erecting integrated LED street light fitting 23 to 25W IP65 & IK08 class having single piece pressure die-cast aluminium housing, having system lumens output of Min. 2300 Lumens , min. efficacy of 100 lumen/W, CRI>70, CCT upto 6500K, THD<10%, p.f. >0.95, operating range of 140-270V, inbuilt surge protection of 10 kV, Life class of 50,000 Hrs. at L70B50, including driver complete with 3Years warranty as per specification No FG-ODF/FLS2 .	Each	2090
2-4-3	Supplying and erecting integrated LED street light fitting 26 to 30W IP65 & IK08 class having single piece pressure die-cast aluminium housing , having system lumens output of Min. 2600 Lumens , min. efficacy of 100 lumen/W, CRI>70, CCT upto 6500K, THD<10%, p.f. >0.95, operating range of 140-270V, inbuilt surge protection of 10 kV, Life class of 50,000 Hrs. at L70B50, including driver complete with 3 Years warranty as per specification No FG-ODF/FLS2 .	Each	2570
2-4-4	Supplying and erecting integrated LED street light fitting 40 to 50W IP65 & IK08 class having single piece pressure die-cast aluminium housing, having system lumens output of Min. 4400 Lumens , min. efficacy of 110 lumen/W, CRI>70, CCT upto 6500K,THD<10%, p.f. >0.95, operating range of 140-270V, inbuilt surge protection of 10 kV, Life class of 50,000 Hrs. at L70B50, including driver complete with 3 Years warranty as per specification No FG-ODF/FLS2 .	Each	4117
2-4-5	Supplying and erecting integrated LED street light fitting 60W IP65 & IK08 class having single piece pressure die-cast aluminium housing, having system lumens output of Min. 6600 Lumens , min. efficacy of 110 lumen/W, CRI>70, CCT upto 6500K, THD<10%, p.f. >0.95, operating range of 140-270V, inbuilt surge protection of 10 kV, Life class of 50,000 Hrs. at L70B50, including driver complete with 3 Years warranty as per specification No FG-ODF/FLS2 .	Each	4970
2-4-6	Supplying and erecting integrated LED street light fitting 70-75W IP65 & IK08 class having single piece pressure die-cast aluminium housing, having system lumens output of Min. 7700 Lumens , min. efficacy of 110 lumen/W, CRI>70, CCT upto 6500K,THD<10%, p.f. >0.95, operating range of 140-270V, inbuilt surge protection of 10 kV, Life class of 50,000 Hrs. at L70B50, including driver complete with 3 Years warranty as per specification No FG-ODF/FLS2 .	Each	5945
2-4-7	Supplying and erecting integrated LED street light fitting 85-90W IP65 & IK08 class having single piece pressure die-cast aluminium housing, having system lumens output of Min. 9300 Lumens , min. efficacy of 110 lumen/W, CRI>70, CCT upto 6500K, THD<10%, p.f. >0.95, operating range of 140-270V, inbuilt surge protection of 10 kV, Life class of 50,000 Hrs. at L70B50, including driver complete with 3 Years warranty as per specification No FG-ODF/FLS2 .	Each	7300

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
2-4-8	Supplying and erecting integrated LED street light fitting 100-110W IP65 & IK08 class having single piece pressure die-cast aluminium housing, having system lumens output of Min. 11000 Lumens , min. efficacy of 110 lumen/W, CRI>70, CCT upto 6500K, THD<10%, p.f. >0.95, operating range of 140-270V, inbuilt surge protection of 10 kV, Life class of 50,000 Hrs. at L70B50, including driver complete with 3 Years warranty as per specification No FG-ODF/FLS2.	Each	8152
2-4-9	Supplying and erecting integrated LED street light fitting 120W IP65 & IK08 class having single piece pressure die-cast aluminium housing, having system lumens output of Min. 13000 Lumens , min. efficacy of 110 lumen/W, CRI>70, CCT upto 6500K, THD<10%, p.f. >0.95, operating range of 140-270V, inbuilt surge protection of 10 kV, Life class of 50,000 Hrs. at L70B50, including driver complete with 3 Years warranty as per specification No FG-ODF/FLS2.	Each	9799
2-4-10	Supplying and erecting integrated LED street light fitting 130-140W IP65 & IK08 class having single piece pressure die-cast aluminium housing, having system lumens output of Min. 15600 Lumens , min. efficacy of 120 lumen/W, CRI>70, CCT upto 6500K, THD<10%, p.f. >0.95, operating range of 140-270V, inbuilt surge protection of 10 kV, Life class of 50,000 Hrs. at L70B50, including driver complete with 3 Years warranty as per specification No FG-ODF/FLS2.	Each	11399
2-4-11	Supplying and erecting integrated LED street light fitting 160-170W IP65 & IK08 class having single piece pressure die-cast aluminium housing, having system lumens output of Min. 19000 Lumens , min. efficacy of 120 lumen/W, CRI>70, CCT upto 6500K, THD<10%, p.f. >0.95, operating range of 140-270V, inbuilt surge protection of 10 kV, Life class of 50,000 Hrs. at L70B50, including driver complete with 3 Years warranty as per specification No FG-ODF/FLS2.	Each	13799
2-4-12	Supplying and erecting integrated LED flood light fitting Max. 30W IP65 & IK07 class having pressure die-cast aluminium housing, having system lumens output of Min. 3000 Lumens , min. efficacy of 100 lumen/W, CRI>70, CCT upto 6500K, THD<10%, p.f. >0.90, operating range of 140-270V, inbuilt surge protection of 4 kV, Life class of 50,000 Hrs. at L70B50, including driver with U shaped bracket with 3 Years warranty as per specification No FG-ODF/FLS2.	Each	2646
2-4-13	Supplying and erecting integrated LED flood light fitting Max. 50W IP65 & IK07 class having pressure die-cast aluminium housing, having system lumens output of Min. 5000 Lumens , min. efficacy of 100 lumen/W, CRI>70, CCT upto 6500K, THD<10%, p.f. >0.90, operating range of 140-270V, inbuilt surge protection of 4 kV, Life class of 50,000 Hrs. at L70B50, including driver with U shaped bracket with 3 Years warranty as per specification No FG-ODF/FLS2.	Each	4246
2-4-14	Supplying and erecting integrated LED flood light fitting Max. 70W IP65 & IK07 class having pressure die-cast aluminium housing, having system lumens output of Min. 8400 Lumens , min. efficacy of 120 lumen/W, CRI>70, CCT upto 6500K, THD<10%, p.f. >0.90, operating range of 140-270V, inbuilt surge protection of 4 kV, Life class of 50,000 Hrs. at L70B50, including driver with U shaped bracket with 3 Years warranty as per specification No FG-ODF/FLS2.	Each	5846

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
2-4-15	Supplying and erecting integrated LED flood light fitting Max. 100W IP65 & IK07 class having pressure die-cast aluminium housing, having system lumens output of Min. 12000 Lumens , min. efficacy of 120 lumen/W, CRI>70, CCT upto 6500K, THD<10%, p.f. >0.90, operating range of 140-270V, inbuilt surge protection of 4 kV, Life class of 50,000 Hrs. at L70B50, including driver with U shaped bracket with 3 Years warranty as per specification No FG-ODF/FLS2.	Each	8246
2-4-16	Supplying and erecting integrated LED flood light fitting Max. 120W IP65 & IK07 class having pressure die-cast aluminium housing, having system lumens output of Min.14500 Lumens , min. efficacy of 120 lumen/W, CRI>70, CCT upto 6500K, THD<10%, p.f. >0.90, operating range of 140-270V, inbuilt surge protection of 4 kV, Life class of 50,000 Hrs. at L70B50, including driver with U shaped bracket with 3 Years warranty as per specification No FG-ODF/FLS2.	Each	9846
2-4-17	Supplying and erecting integrated LED flood light fitting Max. 155W IP65 & IK07 class having pressure die-cast aluminium housing, having system lumens output of Min. 18600 Lumens , min. efficacy of 120 lumen/W, CRI>70, CCT upto 6500K, THD<10%, p.f. >0.90, operating range of 140-270V, inbuilt surge protection of 4 kV, Life class of 50,000 Hrs. at L70B50, including driver with U shaped bracket with 3 Years warranty as per specification No FG-ODF/FLS2.	Each	12646
2-4-18	Supplying and erecting integrated LED flood light fitting Max. 195W IP65 & IK07 class having pressure die-cast aluminium housing, having system lumens output of Min. 23400 Lumens , min. efficacy of 120 lumen/W, CRI>70, CCT upto 6500K, THD<10%, p.f. >0.90, operating range of 140-270V, inbuilt surge protection of 4 kV, Life class of 50,000 Hrs. at L70B50, including driver with U shaped bracket with 3 Years warranty as per specification No FG-ODF/FLS2.	Each	15846
2-4-19 (New)	Supplying and erecting integrated LED Bollard Cylindrical/Cubical shaped 500mm 8W IP65 & IK10 class having extrusion aluminium housing with polycarbonate diffuser, having system lumens output of Min. 800 Lumens , min. efficacy of 100 lumen/W, CRI>80, CCT upto 6500K, THD<10%, p.f. >0.90, operating range of 140-240V, inbuilt surge protection of 2 kV, Life class of 25,000 Hrs. at L50B50, including driver complete with 2 Year warranty as per specification No FG-ODF/FLS2.	Each	5257
2-4-20 (New)	Supplying and erecting integrated LED Bollard Cylindrical/Cubical shaped 800mm 8W IP65 & IK10 class having extrusion aluminium housing with polycarbonate diffuser, having system lumens output of Min. 800 Lumens , min. efficacy of 100 lumen/W, CRI>80, CCT upto 6500K, THD<10%, p.f. >0.90, operating range of 140-240V, inbuilt surge protection of 2 kV, Life class of 25,000 Hrs. at L50B50, including driver complete with 2 Year warranty as per specification No FG-ODF/FLS2.	Each	6762
2-4-21	Supplying and erecting integrated LED Post Top 45W IP65 & IK10 class having die cast aluminium housing with UV protected polycarbonate diffuser, having system lumens output of Min.4500 Lumens , min. efficacy of 100 lumen/W, CRI>80, CCT upto 6500K, THD<10%, p.f. >0.90, operating range of 140-240V, inbuilt surge protection of 2 kV, Life class of 30,000 Hrs. at L50B50, including driver complete with 2 Year warranty as per specification No FG-ODF/FLS2.	Each	3713

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
2-4-22 (New)	Supplying and erecting integrated LED round burial light 6W IP65 & IK10 class having pressure die-cast housing, having system lumens output of Min. 500 Lumens , min. efficacy of 85 lumen/W, CRI>80, CCT upto 6500K, THD<10%, p.f. >0.90, operating range of 100-240V, inbuilt surge protection of 4 kV, Life class of 50,000 Hrs. at L50B50, including driver, salt spray tested for 500 Hrs. including making of recess of appropriate size for flushing into surface with 2 Year warranty as per specification No FG-ODF/FLS2 .	Each	4069
2-4-23 (New)	Supplying and erecting Concealed type foot/step light Max. 5W having IP67. IK10 rated Pressure die cast housing having system lumens output of Min. 500 Lumens , min. efficacy of 100 lumen/W, CRI>80, CCT upto 5000K, Beam Angle of 110 deg., THD<10%, SDCM<5, p.f. >0.95, operating range of 230-270V, surge protection of 2.5 kV, Life class of 25,000 Hrs. at L70B50, including driver by making necessary arrangement/recess in wall to make it flush with surface with 2 Year warranty.	Each	3836
2-4-24	Erecting the departmentally supplied WP LED street light / flood light fitting upto 80W .	Each	226
2-4-25	Erecting departmentally supplied LED street light/ flood light fitting above 80 to 150W .	Each	240
2-4-26	Erecting departmentally supplied LED street light/ flood light fitting above 150 to 400W .	Each	264
Note	<p>1) Driver and luminaire shall be of same make.</p> <p>2) LM79 and all other reports of all luminaires shall be from accredited NABL laboratory.</p> <p>3) Manufacturer Logo shall be embossed on all pressure die cast luminaires and logo shall not be screen-print/sticker type.</p> <p>4) All luminaires shall conform to respective IS.</p> <p>5) There shall be provision for earth wire termination.</p>		
<u>2.5 Decorative Outdoor Fittings (FG-ODF)</u>			
2-5-1	Supplying and erecting Gate/garden light fitting with 200mm dia. glass bowl suitable for upto 12W LED Lamp on provided pipe as per specification No. FG-ODF/GLT	Each	529
2-5-2	Supplying and erecting Gate/garden light fitting with 300mm dia. glass bowl suitable for upto 12W LED Lamp on provided pipe as per specification No. FG-ODF/GLT	Each	1145
2-5-3	Supplying & erecting integral post top lantern fixtures (mushroom type) suitable for LED lamp upto 12 W consisting of clear acrylic top cover, cast aluminium pole cap complete with accessories on provided pole /bracket as per specification no. FG-ODF/PTL	Each	2195
2-5-4	Supplying & erecting integral post top lantern fixtures (globe type) suitable for LED lamp upto 12 W consisting of aesthetic round clear acrylic top cover, cast aluminium pole cap on provided pole /bracket as per specification no. FG-ODF/PTL	Each	1670
2-5-5	Supplying & erecting integral post top lantern fixtures (light house type) suitable upto LED 18 W Lamp consisting of combination of spun aluminium canopy & clear acrylic top cover, cast aluminium pole cap on provided pole/ bracket as per specification no. FG-ODF/PTL	Each	2036

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>2.6 Highbay LED Fittings (FG-ODF/LED)</u>			
2-6-1	Supplying and erecting integrated LED Highbay Fitting 70W IP65 & IK08 class having die cast aluminium housing with polycarbonate diffuser with integrated optics, having system lumens output of Min.10000 Lumens , min. efficacy of 145 lumen/W, CRI>70, CCT upto 6500K, THD<10%, p.f. >0.90, operating range of 140-240V, inbuilt surge protection of 4 kV, Life class of 50,000 Hrs. at L50B50 , including driver complete with 3 Year warranty as per specification No FG-ODF/FLS2.	Each	10900
2-6-2	Supplying and erecting integrated LED Highbay Fitting 100W IP65 & IK08 class having die cast aluminium housing with polycarbonate diffuser with integrated optics, having system lumens output of Min. 15000 Lumens , min. efficacy of 145 lumen/W, CRI>70, CCT upto 6500K, THD<10%, p.f. >0.90, operating range of 140-240V, inbuilt surge protection of 4 kV, Life class of 50,000 Hrs. at L50B50 , including driver complete with 3 Year warranty as per specification No FG-ODF/FLS2.	Each	13698
2-6-3	Supplying and erecting integrated LED Highbay Fitting 135W IP65 & IK08 class having die cast aluminium housing with polycarbonate diffuser with integrated optics, having system lumens output of Min. 20000 Lumens , min. efficacy of 145 lumen/W, CRI>70, CCT upto 6500K, THD<10%, p.f. >0.90, operating range of 140-240V, inbuilt surge protection of 4kV, Life class of 50,000 Hrs. at L50B50 , including driver complete with 3 Year warranty as per specification No FG-ODF/FLS2.	Each	15460
<u>2.7 Accessories for Outdoor Fittings (FG-AS)</u>			
2-7-1	Supplying and erecting Street light bracket made from 25 mm. dia 'B' class G.I. Pipe, 0.6m. in length along with pole cap of 300 mm length and 80 mm dia duly welded with provided leads as per specification no. FG-BKT/BPC	Each	655
2-7-2	Supplying and erecting Street light bracket made from 40 mm. dia 'B' class G.I. Pipe, 0.6m. in length along with pole cap of 300 mm length and 80 mm dia duly welded with provided leads as per specification no. FG-BKT/BPC	Each	736
2-7-3	Supplying and erecting street light Wall bracket made from 25 mm. dia ' G.I. pipe 1.2 m. in total length complete as per specification no. FG-BKT/WB	Each	667
2-7-4	Supplying and erecting street light Wall bracket made from 40 mm. dia ' G.I. pipe 1.2 m. in total length complete as per specification no. FG-BKT/WB	Each	822
2-7-5	Supplying and erecting Street light bracket for erection of Single fitting made from 40 mm. dia 'B' class G.I. pipe 1.0 m. in length along with pole cap of 300 mm length 100 mm dia duly welded as per specification no. FG-BKT/BPC	Each	1043
2-7-6	Supplying and erecting Street light bracket for erection of Double fitting made from 40 mm. dia 'B' class G.I. pipe 1.0 m. in length along with pole cap of 300 mm length 100 mm dia duly welded as per specification no. FG-BKT/BPC	Each	1452

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
2-7-7	Supplying and erecting Street light bracket for erection of Single fitting on tubular welded pole with 40 mm. dia 1.0 m. length “B” class G.I .pipe along with pole cap of 125mm dia 600 mm long duly welded as per specification no. FG-BKT/BPC	Each	1680
2-7-8	Supplying and erecting Street light bracket for erection of Double fitting on tubular welded pole with 40 mm. dia 1.0 m. length “B” class G.I .pipe along with pole cap of 125mm dia 600 mm long duly welded as per specification no. FG-BKT/BPC	Each	2154
2-7-9	Supplying and erecting Street light bracket for erection of side entry fitting on pole with 40 mm. dia. ‘B’ class G.I. pipe of required length complete as per specification no. FG-BKT/SLB	m	562
2-7-10	Supplying and erecting Street light bracket for erection of side entry fitting on pole with 25 mm. dia. ‘B’ class G.I. pipe of required length complete as per specification no. FG-BKT/SLB	m	449
2-7-11	Supplying and erecting Control gear 1x250W for HPSV/MH lamp with all accessories for NON Integral Flood light fittings suitable for complete	Each	3288
2-7-12	Supplying and erecting Control gear for NON Integral Flood light fittings suitable for 1x400W HPSV/MH lamp with all accessories complete.	Each	4301
2-7-13	Supplying and erecting Control gear for NON Integral Flood light fittings suitable for 2x250W HPSV/MH lamp with all accessories complete.	Each	5441
2-7-14	Supplying and erecting Control gear for NON Integral Flood light fittings suitable for 2x400W HPSV/MH lamp with all accessories complete.	Each	9494
2-7-15	Supplying and erecting condenser for MV/SV/MH lamp 150W,230V as per specification no. FG-FG/AS7	Each	141
2-7-16	Supplying and erecting condenser for MV/SV/MH lamp 250W,230V as per specification no. FG-FG/AS7	Each	183
2-7-17	Supplying and erecting condenser for MV/SV/MH lamp 400W,230V as per specification no. FG-FG/AS7	Each	222
2-7-18	Supplying and erecting ignitor suitable for 230V HPSV lamp 70/150/250/400W as specification no. FG-FG/AS6	Each	188
2-7-19	Supplying and erecting electronic ignitor suitable for 230V metal halide lamp 70/150/250/400W (integral or non integral type luminaires as specification no. FG-FG/AS6	Each	280
2-7-20	Supplying and erecting VPIT heavy duty copper wound ballast 230V for 80-150W HPSV/MV/MH as per specification no. FG-FG/AS5.	Each	919
2-7-21	Supplying and erecting VPIT compound heavy duty copper wound ballast for 230V for 250W HPSV/MV/MH as per specification no. FG-FG/AS5.	Each	1728
2-7-22	Supplying and erecting VPIT heavy duty copper wound ballast for 230V for 400W HPSV/MV/MH as per specification no. FG-FG/AS4.	Each	1937
2-7-23	Supplying and erecting electronic type Driver for Outdoor LED Fittings upto 25W suitable to operate on 230V A.C. 50 Hz. Having pf>0.95 and THD<10%.	Each	529

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
2-7-24	Supplying and erecting electronic type Driver for Outdoor LED Fittings 26W-45W suitable to operate on 230V A.C. 50 Hz. Having pf>0.95 and THD<10%.	Each	858
2-7-25	Supplying and erecting electronic type Driver for Outdoor LED Fittings 46W-75W suitable to operate on 230V A.C. 50 Hz. Having pf>0.95 and THD<10%.	Each	1207
2-7-26	Supplying and erecting electronic type Driver for Outdoor LED Fittings 76W-100W suitable to operate on 230V A.C. 50 Hz. Having pf>0.95 and THD<10%.	Each	1889
2-7-27	Supplying and erecting electronic type Driver for Outdoor LED Fittings 101W-150W suitable to operate on 230V A.C. 50 Hz. Having pf>0.95 and THD<10%.	Each	2298
2-7-28	Supplying and erecting electronic type Driver for Outdoor LED Fittings 151W-200W suitable to operate on 230V A.C. 50 Hz. Having pf>0.95 and THD<10%.	Each	3372
<u>2.8 Lamps and Tubes for Indoor & Outdoor (FG-LP)</u>			
2-8-1	Supplying and erecting T8 Fluorescent tube day light 600mm, 18 W	Each	40
2-8-2	Supplying and erecting T8 Fluorescent tube day light 1200mm, 36 W	Each	45
2-8-3	Supplying and erecting T8 Fluorescent tube triphosphor / Turband phosphor 36 W.	Each	97
2-8-4	Supplying and erecting T5 14 W energy efficient fluorescent tube.	Each	97
2-8-5	Supplying and erecting T5 24 W energy efficient fluorescent tube.	Each	120
2-8-6	Supplying and erecting T5 28 W energy efficient fluorescent tube.	Each	128
2-8-7	Supplying & erecting 0.5W, 230V integral type LED Lamp suitable for B-22/E-27 base.	Each	64
2-8-8	Supplying and erecting Pigmy /candle lamp miniature type coloured / white.	Each	28
2-8-9	Supplying & erecting 3W, 230V integral type LED Lamp suitable for B-22 / E-27 base.	Each	126
2-8-10	Supplying & erecting 5W-7W, 230V integral type LED Lamp suitable for B-22 / E-27 base.	Each	141
2-8-11	Supplying & erecting 10-12W, 230V integral type LED Lamp suitable for B-22 / E-27 base.	Each	230
2-8-12	Supplying & erecting 14W, 230V integral type LED Lamp suitable for B-22 / E-27 base.	Each	309
2-8-13	Supplying & erecting 18W, 230V integral type LED Lamp suitable for B-22 / E-27 base.	Each	389
2-8-14	Supplying & erecting ready to use Retrofit T8 LED 18 / 20 tube light with polycarbonate body, heat sink, integrated HF electronic driver complete & compatible to T8 / T12 LED luminaire by disconnecting starter & ballast if necessary.	Each	627
Note			
1) System efficacy shall not be less than 100 lumens/watt			
2) LED Lamp /tube shall carry minimum two year warranty.			
2-8-15	Supplying and erecting HPSV lamp 3 pin BC/Screwed cap head / pin type 230V, 70 W SON type.	Each	187

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
2-8-16	Supplying and erecting HPSV lamp 3 pin BC/Screwed cap head /pin type 230V, 150 W SON type.	Each	388
2-8-17	Supplying and erecting HPSV lamp 3 pin BC/Screwed cap head /pin type 230V, 250 W SON type.	Each	436
2-8-18	Supplying and erecting HPSV lamp 3 pin BC/Screwed cap head /pin type 230V, 400 W SON type.	Each	507
2-8-19	Supplying and erecting HPSV lamp 3 pin BC/Screwed cap head /pin type 230V, 70 W SON-T-type.	Each	213
2-8-20	Supplying and erecting HPSV lamp 3 pin BC/Screwed cap head /pin type 230V, 150 W SON-T-type.	Each	496
2-8-21	Supplying and erecting HPSV lamp 3 pin BC/Screwed cap head /pin type 230V, 250 W SON-T-type.	Each	554
2-8-22	Supplying and erecting HPSV lamp 3 pin BC/Screwed cap head /pin type 230V, 400 W SON-T-type.	Each	627
2-8-23	Supplying and erecting Metal Halide lamp double ended 230V, 70 W .	Each	491
2-8-24	Supplying and erecting Metal Halide lamp double ended 230V, 150 W .	Each	508
2-8-25	Supplying and erecting Metal Halide lamp double ended 230V, 250 W.	Each	682
2-8-26	Supplying and erecting Metal Halide lamp double ended 230V, 400 W.	Each	757
Note	For use of single ended MH lamps increase rate by 38% of the rate of double ended lamps.		
<u>2.9 Aviation Light Fitting</u>			
2-9-1	Supplying & erecting Aviation obstruction light consisting of yellow painted die-cast aluminium alloy housing with Integral LED aviation light comprising of aluminium housing with polycarbonate enclosure complete.	Each	4825
<u>2.10 Fans (FG-FN)</u>			
2-10-1	Supplying and erecting regular/ standard model ceiling fan of 600mm. sweep complete erected in position as per specification no. FG-FN/CF	Each	1848
2-10-2	Supplying and erecting regular/ standard model ceiling fan of 900 /1050 mm. sweep complete erected in position as per specification no. FG-FN/CF	Each	2092
2-10-3	Supplying and erecting regular/ standard model ceiling fan of 1400mm. sweep complete erected in position as per specification no. FG-FN/CF	Each	2275
2-10-4	Supplying and erecting bracket fan 400 mm. sweep A. C. 230 volts 50 cycles 1350 RPM. Oscillating type, plastic or metal blades chrome plated guard with speed regulator and moisture proof treatment to winding and with 'E' class insulation.	Each	2440
2-10-5	Supplying and erecting air circulator 450 mm. sweep oscillating type, wall mounting 1440 RPM with speed regulator, overheat protection unit, totally enclosed, flame proof motor suitable for 230/250 Volts single phase, 50 cycles A.C. supply, with one meter of 3 core lead wire and with moisture proof treatment to winding and with 'E' class insulation.	Each	5439

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
2-10-6	Supplying and erecting air circulator 600 mm. sweep oscillating type, wall mounting 1440 RPM without speed regulator, overheat protection unit, totally enclosed, flame proof motor suitable for 230/250 volts single phase, 50 cycles A.C. supply, core lead wire and with moisture proof treatment to winding and with 'E' class insulation.	Each	6915
2-10-7	Supplying Pedestal fan 400 mm. 230 Volts 50 cycles oscillating type complete with guard and regulator 3 meter. of flexible wire and hand shield type 3 pin plug top.	Each	2486
2-10-8	Supplying pedestal type air circulator 450 mm. sweep oscillating type suitable to work on 230 Volts 50 cycles 1440 RPM with speed regulator, metallic blades, overhead protection unit, totally enclosed, flame proof motor with additional 3 core wire, 5 meter length and hand shield type 3 pin 5A. plug top complete with moisture proof treatment and 'E' class insulation.	Each	5030
2-10-9	Supplying pedestal type air circulator 600 mm. sweep oscillating type suitable to work on 230 Volts 50 cycles 1440 RPM without speed regulator, metallic blades, overhead protection unit, totally enclosed, flame proof motor with additional 3 core wire, 5 meter length and hand shield type 3 pin6A. plug top complete with moisture proof treatment and 'E' class insulation.	Each	8344
2-10-10	Supplying Table fan of A.C. 230 V. 50 cycles 400 mm. oscillating type with speed regulator complete with 2 meter of 3 core flexible wire and Hand shield type 3 pin plug top.	Each	2023
2-10-11	Supplying and erecting cabin fan of A.C. 230 V. 50 cycles 250 mm. /300 mm. sweep complete with necessary brackets for fixing cabin fans, wire etc.	Each	2081
2-10-12	Supplying and erecting cabin fan of A.C. 230 V. 50 cycles 400 mm. sweep complete with necessary brackets for fixing cabin fans, wire etc.	Each	2149
2-10-13	Supplying and erecting fresh air cum exhaust fan of light duty 250 V A.C. 50 cycles 300mm. 1400 RPM rust proof body & blades, wire mesh, duly erected, complete.	Each	1582
2-10-14	Supplying and erecting fresh air cum exhaust fan of light duty 250 V A.C. 50 cycles 225mm. 1400 RPM rust proof body & blades, wire mesh, duly erected, complete.	Each	1464
2-10-15	Supplying and erecting exhaust fan medium duty 230 V A.C. 50 cycles 225 mm. 1400 RPM with condenser complete erected in position with necessary materials. Fan motor with moisture proof treatment and 'E' class insulation.	Each	2032
2-10-16	Supplying and erecting exhaust fan heavy duty 230 V, A.C. 50 cycles 375/380 mm. 900 RPM complete erected in position as per specification no. FG-FN/EXF	Each	3854
2-10-17	Supplying and erecting exhaust fan heavy duty 230 V A.C. 50 cycles 375/380 mm. 1400 RPM complete erected in position as per specification no. FG-FN/EXF	Each	3976
2-10-18	Supplying and erecting exhaust fan heavy duty 230 V A.C. 50 cycles 450 mm. 1400 RPM complete erected in position as per specification no. FG-FN/EXF	Each	5425
2-10-19	Supplying and erecting exhaust fan heavy duty 230 V A.C. 50 cycles 450 mm. 900 RPM complete erected in position as per specification no. FG-FN/EXF	Each	5014

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
2-10-20	Supplying and erecting exhaust fan heavy duty 440 V A.C. 50 cycles 900 RPM 375/380 mm complete erected in position as per specification no. FG-FN/EXF	Each	4067
2-10-21	Supplying and erecting energy saving ceiling fan 230 V A.C. 50 cycles 1200 mm complete erected in position as per specification no. FG-FN/CF	Each	2397
2-10-22 (New)	Supplying and erecting Energy Saving BLDC Ceiling fan 230 V A.C. 50 cycles 1200 mm, max. energy consumption of 28W having service ratio (CMM/W) of Min. 8 , PF>0.9, THD<10% with IR remote control/compatible speed regulator, Temperature Rise of Max. 40 deg. C, having external mounted control PCB completely erected in position as per specification no. FG-FN/CF	Each	3811

Note Item No. 2-10-22 reduce rate by 10% for BLDC fan without IR remote control or without speed regulator.

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>2.11 Accessories for Fans (FG-FN)</u>			
2-11-1	Supplying and erecting condenser 2.5 micro farad for ceiling fan	Each	66
2-11-2	Supplying & fixing anchor type fastener fan hook , with 2 nos. of 10 mm dia x 75 mm long with necessary materials for ceiling fan.	Each	103
2-11-3	Supplying and erecting fan clamp of 30 x 5 mm. M.S. flat of required length and 10 mm. M.S. bolt and nuts erected with necessary hook of 10 mm. M.S. round bar and painted.	Each	195
2-11-4	Supplying and erecting fan hook of 10 mm. M.S. round bar grouted in RCC slab with making the site as original.	Each	115
2-11-5	Supplying and erecting fan hook box of 10 mm M.S. round bar bounded to the R.C.C. bars upto 50 mm length each side and pierced through a 16 S.W.G. thick aluminium/M.S. Bowl 100 mm dia. or equivalent square size and having depth upto 75 mm complete erected with duly painted by one coat of red oxide paint and two coats of paint erected in position and without any leakage of slurry of cement concrete on either side of the box and positioned to the bottom level of the slab.	Each	176
2-11-6	Supplying and erecting 'B' class G.I .pipe / M.S. pipe down rod duly painted for fan complete erected with PVC three core flexible cable 1 sq. mm copper PVC wire.	m	229
2-11-7	Erection of departmentally supplied ceiling fan with necessary materials complete.	Each	104
2-11-8	Erection of departmentally supplied exhaust fan with necessary materials complete.	Each	182
2-11-9	Supplying and erecting electronic type step regulator for ceiling fan 600/ 900/ 1200/ 1400 mm. sweep, complete erected on provided switch board.	Each	206
2-11-10	Providing recess in brick wall suitable for erection of exhaust fan up to 450 mm sweep complete with grouting of nut, bolts, plaster in hand colour washing to match the colour of the wall for the wall thickness of 150 mm.	Each	326
2-11-11	Providing recess in brick wall suitable for erection of exhaust fan up to 450mm. sweep complete with grouting of nut, bolts, plastering and colour washing to match the colour of the wall for the wall thickness of 225 mm.	Each	381
2-11-12	Providing recess in brick wall suitable for erection of exhaust fan up to 450mm. sweep complete with grouting of nut, bolts, plastering and colour washing to match the colour of the wall for the wall thickness of 375 mm.	Each	464
2-11-13	Providing recess in stone wall suitable for erection of exhaust fan up to 450mm sweep complete with grouting of nut, bolts, plastering and colour washing to match the colour of the wall.	Each	709
2-11-14	Supplying & erecting 22 SWG G.I sheet metal cawl sector shaped with 25 x 25 x 3 (mm) angle iron frame, metal mesh to avoid birds entry with necessary material, suitable for exhaust fan of 300 mm as per specification no FG-FAS/MSC	Each	1060
2-11-15	Supplying & erecting 22 SWG G.I sheet metal cawl sector shaped with 25 x 25 x 3 (mm) angle iron frame, metal mesh to avoid birds entry with necessary material, suitable for exhaust fan of 400 mm as per specification no FG-FAS/MSC	Each	1194

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
2-11-16	Supplying & erecting 22 SWG G.I sheet metal cawl sector shaped with 25 x 25 x 3 (mm) angle iron frame, metal mesh to avoid birds entry with necessary material, suitable for exhaust fan of 450 mm as per specification no FG-FAS/MSC	Each	1280
2-11-17	Supplying & erecting 20 SWG G.I sheet metal cawl rectangular / round shaped with 25 x 25x 3 (mm) angle iron frame, metal mesh to avoid birds entry with necessary material, suitable for exhaust fan of 300 mm as per specification no FG-FAS/MSC	Each	1141
2-11-18	Supplying & erecting 20 SWG G.I sheet metal cawl rectangular /round shaped with 25 x 25x 3 (mm) angle iron frame, metal mesh to avoid birds entry with necessary material, suitable for exhaust fan of 400 mm as per specification no FG-FAS/MSC	Each	1318
2-11-19	Supplying & erecting 20 SWG G.I sheet metal cawl rectangular /round shaped with 25 x 25x 3 (mm) angle iron frame, metal mesh to avoid birds entry with necessary material, suitable for exhaust fan of 450 mm as per specification no FG-FAS/MSC	Each	1398

2.12 Dismantling

2-12-1	Dismantling of existing fluorescent fittings of any type & size.	Each	16
2-12-2	Dismantling the existing W.T. fluorescent fitting / S.V./ M.V. / M.H. lamp /LED fitting from wall with brackets and making the site as original complete.	Each	47
2-12-3	Dismantling the existing W.T. fluorescent fitting/ S.V./ M.V. / M.H. lamp /LED fitting from pole with brackets complete.	Each	109
2-12-4	Dismantling the existing ceiling fan /exhaust fan / cabin fan / bracket fan complete with accessories, G.I. down rod, frame etc. and making the site clear.	Each	37

Note 1) Above rates are inclusive of transportation to the sub-divisional store or as directed by sectional officer.

2) All fans & fittings shall be marked with sr. no. & date of erection.

Chapter: 3
Appliances (AP)

3.1 Water Heaters	(AP-WH)
3.2 Air Conditioners	(AP-AC)
3.3 Water Coolers & Refrigerators	(AP-WC)
3.4 Air-Coolers	(AP-WCR/DAC)
3.5 Water Purifiers	(WPF)
3.6 Inverter	(AP-INV)
3.7 Online Uninterruptible Power Supply (UPS)	(AP-UPS)
3.8 Batteries for Inverter & UPS	
3.9 Voltage Stabilizers	
3.10 Accessories for AC & Water cooler	
3.11 VRV/VRF Air conditioning	
3.12 Dismantling	

Chapter: 3 APPLIANCES (AP)

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>3.1 Water Heaters (AP-WH)</u>			
3-1-1	Supplying and erecting storage type water heater 15 litres capacity having standing loss <0.419 kWh / 24 hour / 45°C , high impact resistance engineering plastic body with anti corrosive high grade steel inner tank heating element having hard water & corrosion protection, with minimum 3 safety protections (i.e. thermostat & thermal cut-out, multi function valve) with total pressure 8 bar withstanding capacity duly tested and marking sr. no. and date of erection complete. specification no. AP-WH/STWH	Each	8991
3-1-2	Supplying and erecting storage type water heater 25 litres capacity having standing loss <0.511kWh/24hour/45°C , high impact resistance engineering plastic body with anti corrosive high grade steel inner tank, heating element having hard water & corrosion protection, with minimum 3 safety protections (i.e. thermostat & thermal function cut-out, valve) with total pressure 8 bar withstanding capacity duly tested and marking sr. no. and date of erection complete. specification no. AP-WH/STWH	Each	11157
3-1-3	Supplying and erecting storage type water heater 35 litres capacity having standing loss <0.584 kWh / 24 hour / 45°C , high impact resistance engineering plastic body with anti corrosive high grade steel inner tank heating element having hard water & corrosion protection, with minimum 3 safety protections (i.e. thermostat & thermal cut-out, function valve) with total pressure 8 bar withstanding capacity duly tested and marking sr. no. and date of erection complete. specification no. AP-WH/STWH	Each	13496
3-1-4	Supplying and erecting storage type water heater 50 litres capacity having standing loss <0.675 kWh/24hour/45°C , high impact resistance engineering plastic body with anti corrosive high grade steel inner tank heating element having hard water & corrosion protection, with minimum 3 safety protections (i.e. thermostat & thermal cut-out, function valve) with total pressure 8 bar withstanding capacity duly tested and marking sr. no. and date of erection complete. specification no. AP-WH/STWH	Each	15881
3-1-5	Supplying and erecting storage type water heater 100 litres capacity having standing loss <0.875 kWh/24hour/45°C , high impact resistance engineering plastic body with anti corrosive high grade steel inner tank heating element having hard water & corrosion protection, with minimum 3 safety protections (i.e. thermostat & thermal cut-out, function valve) with total pressure 8 bar withstanding capacity duly tested and marking sr. no. and date of erection complete. specification no. AP-WH/STWH	Each	27335

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-1-6	Supplying and erecting midget type 3.0 litres instant type water heater of rustproof & shockproof ABS plastic body, high grade SS inner tank & 3kW heating element with corrosion & hard water protection, with minimum 3 safety protections (i.e. thermostat & thermal cut-out, function valve) complete with 6.5 bar pressure withstanding capacity 230/250V, 50Hz, A.C. supply with inlet and outlet, with 3 core PVC flexible copper wire leads duly tested and marking sr. no. and date of erection complete.	Each	4289
3-1-7	Supplying and erecting chromium plated heavy duty brass stop cock for inlet pipe of water heater (15mm. dia).	Each	235
3-1-8	Supplying & erecting 15mm brass non return valve for inlet pipe of storage water heater.	Each	256
3-1-9	Supplying & erecting dead weight pressure releasing valve for storage water heater with necessary materials complete.	Each	423
3-1-10	Supplying & erecting vacuum relief valve for storage water heater with necessary materials complete.	Each	214
3-1-11	Providing fiber reinforced PVC flexible pipe upto 1m length with brass locking nuts and washers and clips at both ends suitable for hot water and cold water both (1 set of 2 nos.) complete.	Each	189
3-1-12	Supplying and erecting heating element 2/3 kW suitable for water heater/midget of any make any capacity.	Each	988
3-1-13	Supplying and erecting thermostat suitable for water heater/midget of any make any capacity.	Each	367
3-1-14	Erecting departmentally supplied water heater of 15/25 litre capacity with wall fasteners, inlet & outlet pipes, NRV, etc. and marking sr no. and date of erection.	Each	316
3-1-15	Erecting departmentally supplied water heater of 35/50/100 litre capacity with wall fasteners, inlet and outlet pipes, NRV, etc. and marking sr. no. and date of erection.	Each	410
3-1-16	Dismantling unserviceable storage type water heater from site to workshop and back after duly repaired and re-erecting the repaired storage water heater in position with necessary material with to and fro transportation complete .	Each	366

3.2 Air Conditioners (AP-AC)

3-2-1 (New)	Supplying, installing, testing & commissioning window type variable speed inverter technology with minimum 3 to 1 convertible mode for compressor, room air conditioning unit 0.7TR to 0.9TR capacity having ISEER minimum 3.1 to maximum 3.29 suitable to operate on 250V, 50 Hz, A.C. supply having 1 no of air handling unit hi-wall/floor mounting type complete with refrigerant R32 having copper condenser, minimum 2.5PM filter, self diagnosis feature, stabilizer free operation & temperature display on indoor unit, noise level maximum 50dBA at position in provided recess with wooden frame complete specification no. AP-AC/WAC	Each	28811
----------------	---	------	-------

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-2-2 (New)	Supplying, installing, testing & commissioning window type variable speed inverter technology with minimum 3 to 1 convertible mode for compressor, room air conditioning unit 1.0TR to 1.2TR capacity having ISEER minimum 3.1 to maximum 3.29 suitable to operate on 250V, 50 Hz, A.C. supply having 1 no of air handling unit hi-wall/floor mounting type complete with refrigerant R32 having copper condenser, minimum 2.5PM filter, self diagnosis feature, stabilizer free operation & temperature display on indoor unit, noise level maximum 50dBA at position in provided recess with wooden frame complete specification no. AP-AC/WAC	Each	24688
3-2-3 (New)	Supplying, installing, testing & commissioning window type variable speed inverter technology with minimum 3 to 1 convertible mode for compressor, room air conditioning unit 1.0TR to 1.2TR capacity having ISEER minimum 3.5 suitable to operate on 250V, 50 Hz, A.C. supply having 1 no of air handling unit hi-wall/floor mounting type complete with refrigerant R32 having copper condenser, minimum 2.5PM filter, self diagnosis feature, stabilizer free operation & temperature display on indoor unit, noise level maximum 50dBA at position in provided recess with wooden frame complete specification no. AP-AC/WAC	Each	28335
3-2-4 (New)	Supplying, installing, testing & commissioning window type variable speed inverter technology with minimum 3 to 1 convertible mode for compressor, room air conditioning unit 1.3TR to 1.6TR capacity having ISEER minimum 3.1 to maximum 3.29 suitable to operate on 250V, 50 Hz, A.C. supply having 1 no of air handling unit hi-wall/floor mounting type complete with refrigerant R32 having copper condenser, minimum 2.5PM filter, self diagnosis feature, stabilizer free operation & temperature display on indoor unit, noise level maximum 50dBA at position in provided recess with wooden frame complete specification no. AP-AC/WAC	Each	28335
3-2-5 (New)	Supplying, installing, testing & commissioning window type variable speed inverter technology with minimum 3 to 1 convertible mode for compressor, room air conditioning unit 1.3TR to 1.6TR capacity having ISEER minimum 3.5 suitable to operate on 250V, 50 Hz, A.C. supply having 1 no of air handling unit hi-wall/floor mounting type complete with refrigerant R32 having copper condenser, minimum 2.5PM filter, self diagnosis feature, stabilizer free operation & temperature display on indoor unit, noise level maximum 50dBA at position as per specification no. APAC/ WAC	Each	31550
3-2-6 (New)	Supplying, installing, testing & commissioning window type variable speed inverter technology with minimum 3 to 1 convertible mode for compressor, room air conditioning unit 1.7TR to 2.00TR capacity having ISEER minimum 3.1 to maximum 3.29 suitable to operate on 250V, 50 Hz, A.C. supply having 1 no of air handling unit hi-wall/floor mounting type complete with refrigerant R32 having copper condenser, minimum 2.5PM filter, self diagnosis feature, stabilizer free operation & temperature display on indoor unit, noise level maximum 50dBA at position in provided recess with wooden frame complete specification no. AP-AC/WAC	Each	48217

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-2-7 (New)	Supplying, installing, testing & commissioning split type variable speed inverter technology with minimum 3 to 1 convertible mode for compressor, room air conditioning unit 0.7TR to 0.9TR capacity having ISEER minimum 3.8 to maximum 4.39 suitable to operate on 250V, 50 Hz, A.C. supply having 1 no of air handling unit hi-wall/floor mounting type complete with refrigerant R32 having copper condenser, minimum 2.5PM filter, self diagnosis feature, stabilizer free operation & temperature display on indoor unit, noise level maximum 50dBA at position as per specification no. APAC/ WAC	Each	36820
3-2-8 (New)	Supplying, installing, testing & commissioning split type variable speed inverter technology with minimum 3 to 1 convertible mode for compressor, room air conditioning unit 1.0TR to 1.2TR capacity having ISEER minimum 3.8 to maximum 4.39 suitable to operate on 250V, 50 Hz, A.C. supply having 1 no of air handling unit hi-wall/floor mounting type complete with refrigerant R32 having copper condenser, minimum 2.5PM filter, self diagnosis feature, stabilizer free operation & temperature display on indoor unit, noise level maximum 50dBA at position as per specification no. APAC/ WAC	Each	37992
3-2-9	Supplying, installing, testing & commissioning split type variable speed inverter technology with minimum 3 to 1 convertible mode for compressor, room air conditioning unit 1.0TR to 1.2TR capacity having ISEER minimum 5.00 suitable to operate on 250V, 50 Hz, A.C. supply having 1 no of air handling unit hi-wall/floor mounting type complete with refrigerant R32 having copper condenser, minimum 2.5PM filter, self diagnosis feature, stabilizer free operation & temperature display on indoor unit, noise level maximum 50dBA at position as per specification no. APAC/ WAC	Each	43854
3-2-10 (New)	Supplying, installing, testing & commissioning split type variable speed inverter technology with minimum 3 to 1 convertible mode for compressor, room air conditioning unit 1.3TR to 1.6TR capacity having ISEER minimum 3.8 to maximum 4.39 suitable to operate on 250V, 50 Hz, A.C. supply having 1 no of air handling unit hi-wall/floor mounting type complete with refrigerant R32 having copper condenser, minimum 2.5PM filter, self diagnosis feature, stabilizer free operation & temperature display on indoor unit, noise level maximum 50dBA at position as per specification no. APAC/ WAC	Each	45671
3-2-11 (New)	Supplying, installing, testing & commissioning split type variable speed inverter technology with minimum 3 to 1 convertible mode for compressor, room air conditioning unit 1.3TR to 1.6TR capacity having ISEER minimum 5.00 suitable to operate on 250V, 50 Hz, A.C. supply having 1 no of air handling unit hi-wall/floor mounting type complete with refrigerant R32 having copper condenser, minimum 2.5PM filter, self diagnosis feature, stabilizer free operation & temperature display on indoor unit, noise level maximum 50dBA at position as per specification no. APAC/ WAC	Each	55578

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-2-12 (New)	Supplying, installing, testing & commissioning split type variable speed inverter technology with minimum 3 to 1 convertible mode for compressor, room air conditioning unit 1.7TR to 2.0TR capacity having ISEER minimum 3.8 to maximum 4.39 suitable to operate on 250V, 50 Hz, A.C. supply having 1 no of air handling unit hi-wall/floor mounting type complete with refrigerant R32 having copper condenser, minimum 2.5PM filter, self diagnosis feature, stabilizer free operation & temperature display on indoor unit, noise level maximum 50dBA at position as per specification no. APAC/ WAC	Each	61440
3-2-13 (New)	Supplying, installing, testing & commissioning split type variable speed inverter technology with minimum 3 to 1 convertible mode for compressor. room air conditioning unit 1.7TR to 2.0TR capacity having ISEER minimum 5.0 suitable to operate on 250V, 50 Hz, A.C. supply having 1 no of air handling unit hi-wall/floor mounting type complete with refrigerant R32 having copper condenser, minimum 2.5PM filter, self diagnosis feature, stabilizer free operation & temperature display on indoor unit, noise level maximum 50dBA at position in provided recess with wooden frame complete specification no. AP-AC/WAC	Each	67302
3-2-14 (New)	Supplying, installing, testing & commissioning split type variable speed inverter technology with minimum 3 to 1 convertible mode for compressor, room air conditioning unit 2.1TR to 2.3TR capacity having ISEER minimum 3.8 to maximum 4.39 suitable to operate on 250V, 50 Hz, A.C. supply having 1 no of air handling unit hi-wall/floor mounting type complete with refrigerant R32 having copper condenser, minimum 2.5PM filter, self diagnosis feature, stabilizer free operation & temperature display on indoor unit, noise level maximum 50dBA at position as per specification no. APAC/ WAC	Each	76147
3-2-15 (New)	Supplying, installing, testing & commissioning split type room air conditioning unit 2.5TR to 2.7TR capacity with refrigerant R32 415V, 50 Hz, A.C. supply having 1 no of air handling unit (Mega split) mounting type complete with temperature display on indoor unit, noise level maximum 50dBA at position as per specification no. AP-AC/WAC	Each	69045
3-2-16 (New)	Supplying, installing, testing & commissioning split type room air conditioning unit 2.8TR to 3.2TR capacity with refrigerant R32 415V, 50 Hz, A.C. supply having 1 no of air handling unit (Mega split) mounting type complete with temperature display on indoor unit, noise level maximum 50dBA at position as per specification no. APAC/ WAC	Each	80176
3-2-17 (New)	Supplying, installing, testing & commissioning cassette type variable speed inverter technology with minimum 3 to 1 convertible mode for compressor room air conditioning unit 1.3TR to 1.7TR capacity having ISEER minimum 5.00 suitable to operate on 250V, 50 Hz, A.C. supply having 1 no of air handling unit hi-wall/floor mounting type complete with refrigerant R32/R410A having copper condenser, dust filter, self diagnosis feature, stabilizer free operation, noise level maximum 50dBA at position as per specification no. APAC/ WAC	Each	93026

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-2-18 (New)	Supplying, installing, testing & commissioning cassette type variable speed inverter technology with minimum 3 to 1 convertible mode for compressor room Air conditioning unit 1.8TR to 2.1TR capacity having ISEER minimum 5.00 suitable to operate on 250V, 50 Hz, A.C. supply having 1 no of air handling unit hi-wall/floor mounting type complete with refrigerant R32/R410A having copper condenser, dust filter, self diagnosis feature, stabilizer free operation, noise level maximum 50dBA at position as per specification no. APAC/ WAC	Each	106176
3-2-19 (New)	Supplying, installing, testing & commissioning cassette type variable speed inverter technology with minimum 3 to 1 convertible mode for compressor room Air conditioning unit 2.5TR to 2.7TR capacity having ISEER minimum 5.00 suitable to operate on 250V, 50 Hz, A.C. supply having 1 no of air handling unit hi-wall/floor mounting type complete with refrigerant R32/R410A having copper condenser, dust filter, self diagnosis feature, stabilizer free operation, noise level maximum 50dBA at position as per specification no. APAC/ WAC	Each	149774
3-2-20 (New)	Supplying, installing, testing & commissioning cassette type room Air conditioning unit 2.8TR to 3.3TR capacity with refrigerant R32/R410A 415V, 50 Hz, A.C. supply having 1 no of air handling unit (Mega split) mounting type complete with temperature display on indoor unit, dust filter, noise level maximum 50dBA at position as per specification no. APAC/ WAC	Each	147429
3-2-21 (New)	Supplying, installing, testing & commissioning cassette type room Air conditioning unit 3.4TR to 3.9TR capacity with refrigerant R32/410A 415V, 50 Hz, A.C. supply having 1 no of air handling unit (Mega split) mounting type complete with temperature display on indoor unit, minimum dust filter, noise level maximum 50dBA at position as per specification no. APAC/ WAC	Each	180783
3-2-22 (New)	Supplying, installing, testing & commissioning cassette type room Air conditioning unit 4TR to 4.4TR capacity with refrigerant R32/410A 415V, 50 Hz, A.C. supply having 1 no of air handling unit (Mega split) mounting type complete with temperature display on indoor unit, minimum dust filter, noise level maximum 50dBA at position as per specification no. APAC/ WAC	Each	182963
3-2-23 (New)	Supplying ,installing , testing and commissioning tower type room AC unit of 2.5TR to 2.9TR capacity suitable to operate on 415V, 50 Hz, A.C. supply having 1 no AHU and 1 no cabinet type floor mounting type condensing unit with refrigerant R32/410A & copper condenser coil with anticorrosive fins copper condenser , hydrophilic evaporator fins powder coated outer body ,with scroll/rotary compressor connected with provided refrigerant pipes, electric cables and drain pipe.	Each	78094
3-2-24 (New)	Supplying ,installing , testing and commissioning tower type room AC unit of 3.5TR to 3.9TR capacity suitable to operate on 415V, 50 Hz, A.C. supply having 1 no AHU and 1 no cabinet type floor mounting type condensing unit with refrigerant R32/410A & copper condenser coil with anticorrosive fins copper condenser, hydrophilic evaporator fins powder coated outer body, with scroll/rotary compressor connected with provided refrigerant pipes, electric cables and drain pipe.	Each	95334

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-2-25 (New)	Supplying, installing, testing and commissioning tower type room AC unit of 4.0TR to 4.9TR capacity suitable to operate on 415V, 50 Hz, A.C. supply having 1 no AHU and 1 no cabinet type floor mounting type condensing unit with refrigerant R32/R410A & copper condenser coil with anticorrosive fins copper condenser, hydrophilic evaporator Fins Powder coated outer body, with scroll/rotary compressor connected with provided refrigerant pipes, electric cables and drain pipe.	Each	132287
3-2-26 (New)	Supplying & erecting seamless outside & inside, smooth, dry and clean copper pipe with ROHS compliant suitable for refrigerant having 22SWG thickness and inner dia/size 12mm complete.	m	300
3-2-27 (New)	Supplying & erecting seamless outside & inside, smooth, dry and clean copper pipe with ROHS compliant suitable for refrigerant having 22SWG thickness and inner dia/size 16mm complete.	m	450
3-2-28 (New)	Supplying & erecting seamless outside & inside, smooth, dry and clean copper pipe with ROHS compliant suitable for refrigerant having 22SWG thickness and inner dia/size 22mm complete.	m	636
3-2-29 (New)	Supplying & erecting seamless outside & inside, smooth, dry and clean copper pipe with ROHS compliant suitable for refrigerant having 22SWG thickness and inner dia/size 32mm complete.	m	1117
3-2-30 (New)	Supplying & erecting seamless outside & inside, smooth, dry and clean copper pipe with ROHS compliant suitable for refrigerant having 22SWG thickness and inner dia/size 35mm complete.	m	1164
3-2-31 (New)	Supplying & erecting seamless outside & inside, smooth, dry and clean copper pipe with ROHS compliant suitable for refrigerant having 22SWG thickness and inner dia/size 42mm complete.	m	1595
3-2-32	supplying floor mounted de-humidifier of ABS engineering plastic body 320 to 360W , 220-240V, 50 Hz, A.C. supply of 16 to 22 liter/day (300°C-80%-90%RH) capacity having rotary compressor consisting with refrigerant R410A/R134A running temperature capacity 50°C-350°C, tank capacity 3-4.5litre, noise level below 40dBA with digital display, programmable timer, humidity display, humidity setting arrangement, air flow 150 to 200 cu.m/hr and suitable for cover 70-100 cu.m area.	Each	34163
3-2-33	Supplying floor mounted de-humidifier of ABS engineering plastic body 470 to 530W , 220-240V, 50 Hz , A.C. supply of 30 to 35 liter/day (300°C-80%-90%RH) capacity having rotary compressor consisting with refrigerant R410A/R134A running temperature capacity 50 ⁰ C-350 ⁰ C, tank capacity 3.7-6.5litre, noise level 45-49dBA with digital display, programmable timer, humidity display, humidity setting arrangement, air flow 190 to 220 cu.m/hr and suitable for cover 101-115 cu.m area.	Each	54438
3-2-34	Supplying floor mounted de-humidifier of ABS engineering plastic body 740W , 220-240V, 50 Hz A.C. supply of 50 litre/day (300°C-80%RH) capacity having rotary compressor consisting with refrigerant R410A/R134A running temperature capacity 50°C-350°C, tank capacity 8 liter, noise level 47dBA with digital display, programmable timer, humidity display, humidity setting arrangement, air flow 310 cu.m/hr and suitable for cover 150 cu.m area.	Each	87149
3-2-35 (New)	Supplying, installing, testing & commissioning portable type room air conditioner having ISEER minimum 3.33 suitable to operate on 250V, 50 Hz, A.C. supply minimum 1TR capacity complete with refrigerant R32/R410A at position with drain pipe arrangement with small bucket of size minimum 1 litre with necessary wheel base for movement.	Each	43958

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-2-36	Providing modifications to the existing window for erection of window room air conditioner in position with good quality teak wood as per requirement and filling the gaps to maintain air tightness.	Each	1562
3-2-37	Providing and pasting superior quality sun control film on glass to achieve better cooling effect having 1.5/2mm thickness, ultraviolet transmittance less than 2% and solar heat rejection 78%.	m ²	1295
Note	1) For copper pipe nitrile rubber insulation refer to chapter 4. 2) For drain piping refer rates of PVC pipes from chapter no. 1.		
<u>3.3 Water Coolers & Refrigerators (AP-WC)</u>			
3-3-1 (New)	Supplying single door refrigerator domestic type of 170 to 195 litres storage capacity, minimum 5 Star inverter type , stabilizer free operation suitable for operation on 100V/300 V, 50 Hz with automatic temperature control, shall be marked on unit for sealed unit in refrigeration system and marking sr. no. and date of erection complete.	Each	17663
3-3-2 (New)	Supplying single door refrigerator domestic type of 200 to 230 litres storage capacity, minimum 5 Star inverter type , stabilizer free operation suitable for operation on 100V/300 V, 50Hz with automatic temperature control, shall be marked on unit for sealed unit in refrigeration system and marking sr. no. and date of erection complete.	Each	23436
3-3-3 (New)	Supplying double door refrigerator domestic type of 300 to 360 litres storage capacity, minimum 5 Star inverter type , stabilizer free operation suitable for operation on 100V/300 V, 50Hz with automatic temperature control, shall be marked on unit for sealed unit in refrigeration system and marking sr. no. and date of erection complete.	Each	44961
3-3-4 (New)	Supplying double door refrigerator domestic type of 415 litres storage capacity, minimum 5 Star inverter type , stabilizer free operation suitable for operation on 100V/300 V, 50 Hz with automatic temperature control, shall be marked on unit for sealed unit in refrigeration system and marking sr. no. and date of erection complete.	Each	63889
3-3-5 (New)	Supplying deep freezer commercial type of make 200 litres storage capacity, with double door suitable for operation on 230/250V 50Hz with compressor automatic temperature control with minimum temperature range -18°C to -22°C, manual defrost type, with refrigerant R290/R404A marking sr. no. and date of erection complete.	Each	20068
3-3-6 (New)	Supplying deep freezer commercial type of make 400 litres storage capacity, with double door suitable for operation on 230/250V 50Hz with compressor automatic temperature control with minimum temperature range -18°C to -22°C, manual defrost type, with refrigerant R290/R404A marking sr. no. and date of erection.	Each	31080
3-3-7 (New)	Supplying, erecting, testing and commissioning self contained water cooler 230/250V 50Hz nominal cooling capacity of 20 litres per hour and storage capacity 20 litres with partially stainless steel body As per specification no. APWCR/ WC	Each	21991
3-3-8	Supplying, erecting, testing and commissioning self contained water cooler 230/250V 50Hz nominal cooling capacity of 40 litres per hour and storage capacity 80 litres with partially stainless steel body As per specification no. APWCR/ WC	Each	34549

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-3-9	Supplying, erecting, testing and commissioning self contained water cooler 230/250V 50Hz nominal cooling capacity of 80 litres per hour and storage capacity 120 litres with partially stainless steel body as per specification no. AP-WCR/WC	Each	50484
3-3-10	Supplying, erecting, testing and commissioning self contained water cooler 230/250V 50Hz nominal cooling capacity of 150 litres per hour and storage capacity 150 litres with partially stainless steel body as per specification no. AP-WCR/WC	Each	53284

3.4 Air-Coolers AP-WCR/DAC

3-4-1	Supplying 230/250V, 50Hz, evaporative air cooler (desert cooler) having normal cooling capacity of 50cu.m per minute, with 12" exhaust, min 40 to 55 litres water capacity tank with galvanised steel sheet with grade 350 minimum, leak or drip free, front grill shall be made of non-corrosive material, circular opening shall be more than fan sweep but not exceeding more than 25mm, filter pads shall be made of wood wool or any other substitute placed in non-corrosive wire mesh and tightened at places with side panels, noise level should not be more than 65dBA at 1m distance, 3 core copper cable minimum 2m length & metal casing of the electrical components, metal frame or chassis of cooler cabinet and all exposed metallic parts, shall be provided with proper earthing complete as per specification no. AP-WCR/DAC	Each	8152
3-4-2	Supplying 230/250V, 50Hz, evaporative air cooler (desert cooler) having normal cooling capacity of 60 to 70 cu.m per minute, with 12" exhaust, min 68 litres water capacity tank with galvanised steel sheet with grade 350 minimum, leak or drip free, front grill shall be made of non-corrosive material, circular opening shall be more than fan sweep but not exceeding more than 25mm, filter pads shall be made of wood wool or any other substitute placed in non-corrosive wire mesh and tightened at places with side panels, noise level should not be more than 65dBA at 1m distance, 3 core copper cable minimum 2m length & metal casing of the electrical components, metal frame or chassis of cooler cabinet and all exposed metallic parts, shall be provided with proper earthing complete as per specification no. AP-WCR/DAC	Each	9616
3-4-3	Supplying 230/250V, 50Hz, evaporative air cooler (desert cooler) having normal cooling capacity of 80cu.m per minute, with 12" exhaust, min 75 to 80 litres water capacity tank with galvanised steel sheet with grade 350 minimum, leak or drip free, front grill shall be made of non-corrosive material, circular opening shall be more than fan sweep but not exceeding more than 25mm, filter pads shall be made of wood wool or any other substitute placed in non-corrosive wire mesh and tightened at places with side panels, noise level should not be more than 65dBA at 1m distance, 3 core copper cable minimum 2m length & metal casing of the electrical components, metal frame or chassis of cooler cabinet and all exposed metallic parts, shall be provided with proper earthing complete as per specification no. AP-WCR/DAC	Each	13100

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-4-4 (New)	Supplying 230/250V, 50Hz, evaporative air cooler (desert cooler) duct type having normal cooling capacity of 100cu.m per minute, with 15" exhaust, min 75 to 80 litres water capacity tank with galvanised steel sheet with grade 350 minimum, leak or drip free, front grill shall be made of non-corrosive material, circular opening shall be more than fan sweep but not exceeding more than 25mm, filter pads shall be made of wood wool or any other substitute placed in non-corrosive wire mesh and tightened at places with side panels, noise level should not be more than 65dBA at 1m distance, 3 core copper cable minimum 2m length & metal casing of the electrical components, metal frame or chassis of cooler cabinet and all exposed metallic parts, shall be provided with proper earthing complete as per specification no. AP-WCR/DAC	Each	12273
3-4-5 (New)	Supplying 230/250V, 50Hz, evaporative air cooler (desert cooler) duct type having normal cooling capacity of 120cu.m per minute, with 17" exhaust, min 75 to 80 litres water capacity tank with galvanised steel sheet with grade 350 minimum, leak or drip free, front grill shall be made of non-corrosive material, circular opening shall be more than fan sweep but not exceeding more than 25mm, filter pads shall be made of wood wool or any other substitute placed in non-corrosive wire mesh and tightened at places with side panels, noise level should not be more than 65dBA at 1m distance, 3 core copper cable minimum 2m length & metal casing of the electrical components, metal frame or chassis of cooler cabinet and all exposed metallic parts, shall be provided with proper earthing complete as per specification no. AP-WCR/DAC	Each	19234

3.5 Water Purifiers (WPF)

3-5-1	Supplying and erecting ultra violet storage type water purifier (RO+UV+UF) with softener for safe drinking water consisting of UV germicidal tube of 8W capacity choke made of copper wire and two indicator lamps with output of purified water minimum 0.33 litre/min with activated carbon filter and softener operating on 230V, single phase A.C. supply with UV fail & filter change indication system .(for TDS more than 200)	Each	15891
3-5-2	Supplying and erecting ultra violet water purifier with softener for safe drinking water consisting of UV germicidal tube of 8W capacity, choke made of copper wire, two indicator lamps, dual function cartridge with output of purified water 1 litre/min with activated carbon filter and softener operating on 230V, single phase A.C. supply with UV fail & filter change indication system.	Each	6949

Note Add Rs.2000/- for sample water testing charges including transportation, sample collecting and report within two days.

3.6 Inverter (AP-INV)

3-6-1	Supplying, installing, testing and commissioning of single phase, 230V, 50 Hz, 700VA digital pure sine wave inverter with backup time of hrs. based on Insulated Gate Bipolar Transistor (IGBT) technology complete as per specification no. AP-INV	Each	7314
3-6-2	Supplying, installing, testing and commissioning of single phase, 230V, 50 Hz, 800 to 900VA digital pure sine wave inverter with backup time of hrs. based on Insulated Gate Bipolar Transistor (IGBT) technology complete as per specification no. AP-INV	Each	8554

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-6-3	Supplying, installing, testing and commissioning of single phase, 230V, 50 Hz, 1400 to 1600VA digital pure sine wave inverter with backup time of hrs. based on Insulated Gate Bipolar Transistor (IGBT) technology complete as per specification no. AP-INV	Each	13007
3-6-4	Supplying, installing, testing and commissioning of single phase, 230V, 50 Hz, 2500 VA digital pure sine wave inverter with backup time of hrs. based on Insulated Gate Bipolar Transistor (IGBT) technology complete as per specification no. AP-INV	Each	20403
Note	Backup time in hours and battery capacities in ampere hour (Ah) shall be specifically mentioned and suitable item from 3.8 shall be incorporated as per requirement.		
<u>3.7 Online Uninterruptible Power Supply (UPS) (AP-UPS)</u>			
3-7-1	Supplying, erecting, testing and commissioning of single phase input & 1 phase output 1 kVA capacity online pure sine wave UPS , with backup time of hrs. PWM & IGBT based, with 0.8 to unity output pf complete with all protections as per specification no. AP-UPS	Each	26577
3-7-2	Supplying, erecting, testing and commissioning of 2kVA capacity online pure sine wave , with backup time of hrs. PWM & IGBT based UPS with 0.8 to unity output pf, single phase input & 1 phase output complete with all protections as per specification no. AP-UPS	Each	48983
3-7-3	Supplying, erecting, testing and commissioning of 3kVA capacity online pure sine wave with backup time of hrs. PWM & IGBT based UPS with 0.8 to unity output pf, single phase input & 1 phase output complete with all protections as per specification no. AP-UPS	Each	49181
3-7-4	Supplying, erecting, testing and commissioning of 6kVA capacity online pure sine wave with backup time of hrs. PWM & IGBT based UPS with 0.9 to unity output pf, single phase input & 1 phase output complete with all protections as per specification no. AP-UPS	Each	117390
3-7-5	Supplying, erecting, testing and commissioning of 10kVA capacity online pure sine wave with backup time of hrs. PWM & IGBT based UPS with 0.9 to unity output pf, single phase input & 1 phase output complete with all protections as per specification no. AP-UPS	Each	136767
3-7-6	Supplying, erecting, testing and commissioning of 10kVA capacity online pure sine wave with backup time of hrs. PWM & IGBT based UPS with 0.9 to unity output pf, 3 phase input & 1 phase output complete with all protections as per specification no. AP-UPS	Each	152426
3-7-7	Supplying, erecting, testing and commissioning of 10kVA capacity online pure sine wave , with backup time of hrs. PWM & IGBT based UPS with 0.9 to unity output pf, 3 phase input & 3 phase output complete with all protections as per specification no. AP-UPS	Each	194335
3-7-8 (New)	Supplying, erecting, testing and commissioning of 20kVA capacity online pure sine wave , with backup time of hrs. PWM & IGBT based UPS with 0.9 to unity output pf, 3 phase input and 3 phase output complete with all protections as per specification no. AP-UPS	Each	313682
Note	Backup time in hours and battery capacities in ampere hour (Ah) shall be specifically mentioned and suitable item from 3.8 shall be incorporated as per requirement.		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>3.8 Batteries for Inverter & UPS</u>			
3-8-1	Supplying and erecting 12V/80Ah to 88Ah tubular battery with battery terminal wire, duly charged with 36 months warranty complete.	Each	10527
3-8-2	Supplying and erecting 12V/100Ah tubular battery with battery terminal wire, duly charged with 36 months warranty complete.	Each	13003
3-8-3	Supplying and erecting 12V/130Ah to 135Ah tubular battery with battery terminal wire, duly charged with 36 months warranty complete.	Each	16084
3-8-4	Supplying and erecting 12V/150Ah tubular battery with battery terminal wire, duly charged with 36 months warranty complete.	Each	18877
3-8-5	Supplying and erecting 12V/180Ah tubular battery with battery terminal wire, duly charged with 36 months warranty complete	Each	19789
3-8-6	Supplying and erecting 12V/200Ah tubular battery with battery terminal wire, duly charged with 36 months warranty complete	Each	24231
3-8-7	Supplying and erecting 12V/7Ah -7.5Ah SMF battery with battery terminal wire, duly charged with 12 months warranty complete	Each	957
3-8-8	Supplying and erecting 12V/17Ah -18Ah SMF battery with battery terminal wire, duly charged with 12 months warranty complete	Each	2687
3-8-9	Supplying and erecting 12V/26Ah SMF battery with battery terminal wire, duly charged with 24 months warranty complete	Each	3274
3-8-10	Supplying and erecting 12V/42Ah SMF battery with battery terminal wire, duly charged with 24 months warranty complete	Each	5425
3-8-11	Supplying and erecting 12 V/65Ah SMF battery with battery terminal wire, duly charged complete with 24 months warranty complete	Each	7377
3-8-12	Supplying and erecting 12V/100Ah SMF battery with battery terminal wire, duly charged with 24 months warranty complete.	Each	10885
Note	Item no. 3.8.7 to 3.8.12 shall be used for UPS and Lift ARD (Auto Rescue Device) system.		

3.9 Voltage Stabilizers

3-9-1	Supplying and erecting fully automatic line voltage stabilizer buck and boost type for operation on input voltage 160-270V and output voltage 200-250V rated for 0.5kVA maximum load and with voltmeter, selector switch, 6A/16A flush type 3 pin socket for output and with 3 core copper flexible cord and 3 pin 6/16A plug top with overload & short circuit protection complete.	Each	2509
3-9-2	Supplying and erecting fully automatic line voltage stabilizer buck and boost type for operation on input voltage 160-270V and output voltage 200-250V rated for, 1kVA maximum load and with voltmeter, selector switch, 6A/16A flush type 3 pin socket for output and with 3 core copper flexible cord and 3 pin 6/16A plug top suitable for with overload & short circuit protection complete.	Each	2858
3-9-3	Supplying and erecting fully automatic line voltage stabilizer buck and boost type for operation on input voltage 160-270V and output voltage 200-250V rated for 3kVA maximum load and with voltmeter, selector switch, 6A/16A flush type 3 pin socket for output and with 3 core copper flexible cord and 3 pin 6/16A plug top with overload & short circuit protection complete.	Each	3485

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-9-4	Supplying and erecting fully automatic line voltage stabilizer buck and boost type for operation on input voltage 160-270V and output voltage 200-250V rated for 4kVA maximum load and with voltmeter, selector switch, 6A/16A flush type 3 pin socket for output and with 3 core copper flexible cord and 3 pin 6/16A plug top with overload & short circuit protection complete.	Each	6110
3-9-5	Supplying and erecting fully automatic line voltage stabilizer buck and boost type for operation on input voltage 160-270 V and output voltage 200-250V rated for 5kVA maximum load and with voltmeter, selector switch, 6A/16A flush type 3 pin socket for output and with 3 core copper flexible cord and 3 pin 6/16A plug top with overload & short circuit protection complete .	Each	10459
Note	All the appliances shall be marked with sr no and date of erection with enamel paint/permanent marker after Installation.		
<u>3.10 Accessories for AC & Water cooler</u>			
3-10-1	Providing servicing of 1/1.5/2/3 TR capacity split/window air conditioning unit with all necessary material. job includes checking of performance of unit, cleaning of filters of indoor unit, cleaning of outdoor unit with blower, checking of electrical connection of indoor as well as outdoor unit complete and submitting report to Engineer incharge.	Job	538
3-10-2	Providing annual comprehensive maintenance contract for 1 TR split/window air conditioning unit complete as per terms and conditions. Job includes 1) quarterly servicing 2) on call repair 3) replacement of all spares within 24 hours 4) sending standby manpower for VIP movement. The job excludes sheet metal work and plastic material.	Year	7055
3-10-3	Providing annual comprehensive maintenance contract for 1.5TR split/window air conditioning unit complete as per terms and conditions. Job includes 1) quarterly servicing 2) on call repair 3) replacement of all spares within 24 hours 4) sending standby manpower for VIP movement. The job exclude sheet metal work and plastic material.	Year	7838
3-10-4	Providing annual comprehensive maintenance contract for 2TR split/window air conditioning unit complete as per terms and conditions. Job includes 1) quarterly servicing 2) on call repair 3) replacement of all spares within 24 hours 4) sending standby manpower for VIP movement. The job exclude sheet metal work and plastic material.	Year	9317
3-10-5	Providing annual comprehensive maintenance contract for 3TR to 4.5TR split/tower/window air conditioning unit complete as per terms and conditions. Job includes 1) quarterly servicing 2) on call repair 3) replacement of all spares within 24 hours 4) sending standby manpower for VIP movement. The job exclude sheet metal work and plastic material	Year	10222
3-10-6	Providing replacement of existing unserviceable rotary/scroll compressor of air conditioner 1TR by new one of same capacity with guarantee for one year with provided refrigerant complete.	Each	10101
3-10-7	Providing replacement of existing unserviceable rotary/scroll compressor of air conditioner 1.5TR by new one of same capacity with guarantee for one year with provided refrigerant complete.	Each	11007
3-10-8	Providing replacement of existing unserviceable rotary/scroll compressor of air conditioner 2TR by new one of same capacity with guarantee for one year with provided refrigerant complete.	Each	11762

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-10-9	Providing replacement of existing unserviceable rotary/scroll compressor of air conditioner 2.5TR to 4.5TR by new one of same capacity with guarantee for one year with provided refrigerant complete.	Each	19105
3-10-10	Providing flushing out cooling coil and condenser coil of airconditioner unit refrigerant pipes internally with dry Nitrogen pressure, complete.	Job	788
3-10-11	Providing brazing pipes and checking leakages in the split/window unit duly with dry nitrogen pressure, complete.	Job	788
3-10-12	Providing replacement of unserviceable starting relay for AC unit.	Each	343
3-10-13	Providing replacement of unserviceable starting capacitor for AC unit.	Each	715
3-10-14	Providing replacement of unserviceable running capacitor for AC unit.	Each	715
3-10-15	Providing replacement of unserviceable fan motor capacitor for AC unit.	Each	235
3-10-16	Providing replacement of unserviceable PCB for AC unit upto 3TR capacity.	Each	5712
3-10-17	Providing repair of faulty PCB for AC unit upto 3TR capacity.	Each	1097
3-10-18	Supplying and installing of new fan motor for condenser for air conditioning unit	Each	5533
3-10-19	Supplying and installing of new fan motor for indoor unit of air conditioner up to 3TR suitable to operate on 230/250V, A.C. or 280-340V DC supply having 4 to 8 poles as per requirement.	Each	3101
3-10-20	Supplying and installing new fan blade outdoor unit for AC unit.	Each	1887
3-10-21	Providing replacement of blower of indoor unit for AC unit.	Each	1743
3-10-22	Providing replacement of remote of indoor unit for AC unit.	Each	3486
3-10-23	Providing vaccumising the airconditioner system and charging with refrigerant R32 for AC unit.	kG	864
3-10-24	Providing vaccumising the airconditioner system to 200 micron and charging with refrigerant R32 for AC unit.	kG	1182
3-10-25	Providing vaccumising the airconditioner system to 200 micron and charging with refrigerant R32 for 1TR window/split AC unit.	Job	1430
3-10-26	Providing vaccumising the airconditioner system to 200 micron and charging with R32 refrigerant for 1.5TR window/split AC unit.	Job	1798
3-10-27	Providing vaccumising the airconditioner system to 200 micron and charging with refrigerant R32 for 2TR window/split AC unit.	Job	2335
3-10-28	Providing vaccumising the airconditioner system to 200 micron and charging with refrigerant R32 refrigerant for 3TR window/split AC unit.	Job	3609
3-10-29	Providing replacement of existing unserviceable compressor of 40 litre cooling capacity water cooler by new one of same capacity along with suitable refrigerant with guarantee for one year.	Job	8715
3-10-30	Providing replacement of existing unserviceable compressor of 60 litre cooling capacity water cooler by new one of same capacity along with suitable refrigerant with guarantee for one year.	Job	9653
3-10-31	Providing replacement of existing unserviceable compressor of 150 litre cooling capacity water cooler by new one of same capacity along with suitable refrigerant with guarantee for one year.	Job	11002

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-10-32	Providing replacement of existing unserviceable condenser coil of 40/80/150 litre cooling capacity water cooler by new one of same capacity, testing to the satisfaction of site engineer for cooling and along with guarantee for one year with suitable refrigerant.	Job	7189
3-10-33	Providing replacement of existing unserviceable SS water tap of 40/80/150 litre cooling capacity water cooler by new one of same capacity, testing to the satisfaction of site engineer for cooling and along with guarantee for one year with suitable refrigerant.	Job	821
3-10-34	Providing replacement of existing unserviceable relay 40/80/150 litre cooling capacity water cooler by new one of same capacity, testing to the satisfaction of site engineer for cooling and along with guarantee for one year with suitable refrigerant.	Job	219
3-10-35	Providing replacement of existing unserviceable thermostat of 40/80/150 litre cooling capacity water cooler by new one of same capacity, testing to the satisfaction of site engineer for cooling and along with guarantee for one year with suitable refrigerant.	Job	596
3-10-36	Supplying and erecting candle filter with filter pot for water cooler.	Job	1440
3-10-37	Supplying and erecting connector pipe for candle filter of water cooler.	Job	716
3-10-38	Providing replacement of base tray of water cooler of any capacity.	Job	2742

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>3.11 VRV/VRF Air conditioning</u>			
3-11-1	Supplying, erecting, testing and commissioning of 6HP, VRV/VRV air conditioning system outdoor unit (ODU) complies type-IV OEM standards working on HFC refrigerant R410A or other required/suitable green equivalent refrigerant, for minimum cooling capacity as delivering 100% capacity at 47° C, non stop cooling even at 56° C and coefficient of performance (COP) 3.00 to 4.00, modular type horizontal hot air discharge suitable for longer piping range upto 1000m operation in cooling mode with inverter/digital VRV/VRV technology microprocessor based control compressor starter/control panel with scroll compressor, air cooled copper condenser coil of suitable shape for increasing maximum heat transfer area, rain protection cover, built in oil separator, accumulator and oil receiver, copper tube aluminium fin air cooled condenser, condenser fan with motor suitable for 415V±10%, 50 Hz, 3 phase power supply (all suitable for high ambient conditions), internal copper refrigerant piping, internal wiring and refrigerant, etc. all housed in powder coated weather proof cabinet complete.	Each	232168
3-11-2	Supplying, erecting, testing and commissioning of 7HP to 8HP, VRV/VRV air conditioning system outdoor unit (ODU) complies type-IV OEM standards working on HFC refrigerant R410A or other required/suitable green equivalent refrigerant, for minimum cooling capacity as delivering 100% capacity at 47° C, non stop cooling even at 56° C and coefficient of performance (COP) 3.00 to 4.00, modular type vertical hot air discharge suitable for longer piping range upto 1000m operation in cooling mode with inverter/digital VRV/VRV technology microprocessor based control compressor starter/control panel with scroll compressor, air cooled copper condenser coil of suitable shape for increasing maximum heat transfer area, rain protection cover, built in oil separator, accumulator and oil receiver, copper tube aluminium fin air cooled condenser, condenser fan with motor suitable for 415V±10%, 50 Hz, 3 phase power supply (all suitable for high ambient conditions), internal copper refrigerant piping, internal wiring and refrigerant, etc. all housed in powder coated weather proof cabinet complete.	Each	288014
3-11-3	Supplying, erecting, testing and commissioning of 10HP, VRV/VRV air conditioning system outdoor unit (ODU) complies type-IV OEM standards working on HFC refrigerant R410A or other required/suitable green equivalent refrigerant, for minimum cooling capacity as delivering 100% capacity at 47° C, non stop cooling even at 56° C and coefficient of performance (COP) 3.00 to 4.00, modular type vertical hot air discharge suitable for longer piping range upto 1000m operation in cooling mode with inverter/digital VRV/VRV technology microprocessor based control compressor starter/control panel with scroll compressor, air cooled copper condenser coil of suitable shape for increasing maximum heat transfer area, rain protection cover, built in oil separator, accumulator and oil receiver, copper tube aluminium fin air cooled condenser, condenser fan with motor suitable for 415V±10%, 50 Hz, 3 phase power supply (all suitable for high ambient conditions), internal copper refrigerant piping, internal wiring and refrigerant, etc. all housed in powder coated weather proof cabinet complete.	Each	302137

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-11-4	Supplying, erecting, testing and commissioning of 12HP, VRF/VRV air conditioning system outdoor unit (ODU) complies type-IV OEM standards working on HFC refrigerant R410A or other required/suitable green equivalent refrigerant, for minimum cooling capacity as delivering 100% capacity at 47° C, non stop cooling even at 56° C and coefficient of performance (COP) 3.00 to 4.00, modular type vertical hot air discharge suitable for longer piping range upto 1000m operation in cooling mode with inverter/digital VRF/VRV technology microprocessor based control compressor starter/control panel with scroll compressor, air cooled copper condenser coil of suitable shape for increasing maximum heat transfer area, rain protection cover, built in oil separator, accumulator and oil receiver, copper tube aluminium fin air cooled condenser, condenser fan with motor suitable for 415V±10%, 50 Hz, 3 phase power supply (all suitable for high ambient conditions), internal copper refrigerant piping, internal wiring and refrigerant, etc. all housed in powder coated weather proof cabinet complete.	Each	320438
3-11-5	Supplying, erecting, testing and commissioning of 14HP, VRF/VRV air conditioning system outdoor unit (ODU) complies type-IV OEM standards working on HFC refrigerant R410A or other required/suitable green equivalent refrigerant, for minimum cooling capacity as delivering 100% capacity at 47° C, non stop cooling even at 56° C and coefficient of performance (COP) 3.00 to 4.00, modular type vertical hot air discharge suitable for longer piping range upto 1000 metre operation in cooling mode with inverter/digital VRF/VRV technology microprocessor based control compressor starter/control panel with scroll compressor, air cooled copper condenser coil of suitable shape for increasing maximum heat transfer area, rain protection cover, built in oil separator, accumulator and oil receiver, copper tube aluminium fin air cooled condenser, condenser fan with motor suitable for 415V±10%, 50 Hz, 3 phase power supply (all suitable for high ambient conditions), internal copper refrigerant piping, internal wiring and refrigerant, etc. all housed in powder coated weather proof cabinet complete.	Each	416619
3-11-6	Supplying, erecting, testing and commissioning of 16HP, VRF/VRV air conditioning system outdoor unit (ODU) complies type-IV OEM standards working on HFC refrigerant R410A or other required/suitable green equivalent refrigerant, for minimum cooling capacity as delivering 100% capacity at 47° C, non stop cooling even at 56° C and coefficient of performance (COP) 3.00 to 4.00, modular type vertical hot air discharge suitable for longer piping range upto 1000 metre operation in cooling mode with inverter/digital VRF/VRV technology microprocessor based control compressor starter/control panel with scroll compressor, air cooled copper condenser coil of suitable shape for increasing maximum heat transfer area, rain protection cover, built in oil separator, accumulator and oil receiver, copper tube aluminium fin air cooled condenser, condenser fan with motor suitable for 415V±10%, 50 Hz, 3 phase power supply (all suitable for high ambient conditions), internal copper refrigerant piping, internal wiring and refrigerant, etc. all housed in powder coated weather proof cabinet complete.	Each	453999

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-11-7	Supplying, erecting, testing and commissioning of 18HP, VRF/VRV air conditioning system outdoor unit (ODU) complies type-IV OEM standards working on HFC refrigerant R410A or other required/suitable green equivalent refrigerant, for minimum cooling capacity as delivering 100% capacity at 47° C, non stop cooling even at 56° C and coefficient of performance (COP) 3.00 to 4.00, modular type vertical hot air discharge suitable for longer piping range upto 1000 metre operation in cooling mode with inverter/ digital VRF/VRV technology microprocessor based control compressor starter/control panel with scroll compressor, air cooled copper condenser coil of suitable shape for increasing maximum heat transfer area, rain protection cover, built in oil separator, accumulator and oil receiver, copper tube aluminium fin air cooled condenser, condenser fan with motor suitable for 415V±10%, 50 Hz, 3 phase power supply (all suitable for high ambient conditions), internal copper refrigerant piping, internal wiring and refrigerant, etc. all housed in powder coated weather proof cabinet complete.	Each	471886
3-11-8	Supplying, erecting, testing and commissioning of 20HP, VRF/VRV air conditioning system outdoor unit (ODU) complies type-IV OEM standards working on HFC refrigerant R410A or other required/suitable green equivalent refrigerant, for minimum cooling capacity as delivering 100% capacity at 47° C, non stop cooling even at 56°C and coefficient of performance (COP) 3.00 to 4.00, modular type vertical hot air discharge suitable for longer piping range upto 1000 metre operation in cooling mode with inverter/digital VRF/VRV technology microprocessor based control compressor starter/control panel with scroll compressor, air cooled copper condenser coil of suitable shape for increasing maximum heat transfer area, rain protection cover, built in oil separator, accumulator and oil receiver, copper tube aluminium fin air cooled condenser, condenser fan with motor suitable for 415V±10%, 50 Hz, 3 phase power supply (all suitable for high ambient conditions), internal copper refrigerant piping, internal wiring and refrigerant, etc. all housed in powder coated weather proof cabinet complete.	Each	500894
3-11-9	Supplying, erecting, testing and commissioning of 22HP, VRF/VRV air conditioning system outdoor unit (ODU) complies type-IV OEM standards working on HFC refrigerant R410A or other required/suitable green equivalent refrigerant, for minimum cooling capacity as delivering 100% capacity at 47° C, non stop cooling even at 56° C and coefficient of performance (COP) 3.00 to 4.00, modular type vertical hot air discharge suitable for longer piping range upto 1000 metre operation in cooling mode with inverter/ digital VRF/VRV technology microprocessor based control compressor starter/control panel with scroll compressor, air cooled copper condenser coil of suitable shape for increasing maximum heat transfer area, rain protection cover, built in oil separator, accumulator and oil receiver, copper tube aluminium fin air cooled condenser, condenser fan with motor suitable for 415V±10%, 50 Hz, 3 phase power supply (all suitable for high ambient conditions), internal copper refrigerant piping, internal wiring and refrigerant, etc. all housed in powder coated weather proof cabinet complete.	Each	521863

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-11-10	Supplying, erecting, testing and commissioning of 24HP, VRF/VRV air conditioning system outdoor unit (ODU) complies type-IV OEM standards working on HFC refrigerant R410A or other required/suitable green equivalent refrigerant, for minimum cooling capacity as delivering 100% capacity at 47° C, non stop cooling even at 56° C and coefficient of performance (COP) 3.00 to 4.00, modular type vertical hot air discharge suitable for longer piping range upto 1000 metre operation in cooling mode with inverter/digital VRF/VRV technology microprocessor based control compressor starter/control panel with scroll compressor, air cooled copper condenser coil of suitable shape for increasing maximum heat transfer area, rain protection cover, built in oil separator, accumulator and oil receiver, copper tube aluminium fin air cooled condenser, condenser fan with motor suitable for 415V±10%, 50 Hz, 3 phase power supply (all suitable for high ambient conditions), internal copper refrigerant piping, internal wiring and refrigerant, etc. all housed in powder coated weather proof cabinet complete.	Each	541461
3-11-11	Supplying, erecting, testing and commissioning of 26HP, VRF/VRV air conditioning system outdoor unit (ODU) complies type-IV OEM standards working on HFC refrigerant R410A or other required/suitable green equivalent refrigerant, for minimum cooling capacity as delivering 100% capacity at 47° C, non stop cooling even at 56° C and coefficient of performance (COP) 3.00 to 4.00, modular type vertical hot air discharge suitable for longer piping range upto 1000 metre operation in cooling mode with inverter/digital VRF/VRV technology microprocessor based control compressor starter/control panel with scroll compressor, air cooled copper condenser coil of suitable shape for increasing maximum heat transfer area, rain protection cover, built in oil separator, accumulator and oil receiver, copper tube aluminium fin air cooled condenser, condenser fan with motor suitable for 415V±10%, 50 Hz, 3 phase power supply (all suitable for high ambient conditions), internal copper refrigerant piping, internal wiring and refrigerant, etc. all housed in powder coated weather proof cabinet complete.	Each	574804
3-11-12	Supplying, erecting, testing and commissioning of 28HP, VRF/VRV air conditioning system outdoor unit (ODU) complies type-IV OEM standards working on HFC refrigerant R410A or other required/suitable green equivalent refrigerant, for minimum cooling capacity as delivering 100% capacity at 47° C, non stop cooling even at 56° C and coefficient of performance (COP) 3.00 to 4.00, modular type vertical hot air discharge suitable for longer piping range upto 1000 metre operation in cooling mode with inverter/digital VRF/VRV technology microprocessor based control compressor starter/control panel with scroll compressor, air cooled copper condenser coil of suitable shape for increasing maximum heat transfer area, rain protection cover, built in oil separator, accumulator and oil receiver, copper tube aluminium fin air cooled condenser, condenser fan with motor suitable for 415V±10%, 50 Hz, 3 phase power supply (all suitable for high ambient conditions), internal copper refrigerant piping, internal wiring and refrigerant, etc. all housed in powder coated weather proof cabinet complete.	Each	625284

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-11-13	Supply, installation, testing and commissioning of VRF/VRV based Hi-wall type indoor unit (IDU) of nominal cooling capacity 0.6TR - 0.8TR (229 to 358 cfm) having EER as per BEE standards and specifications with multiple speed evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, expansion device, cordless remote control with necessary controls, with 3-core copper flexible cord of required length and electrical terminal to receive power supply, etc. IDU shall have anti-corrosive coating suitable for coastal area. Unit shall be suitable for indoor wall mounting, having an electronic control console, provided with suitable mounting brackets with any additional refrigerant and oil charge as per the requirement during installation, connected to the system complete.	Each	19991
3-11-14	Supply, installation, testing and commissioning of VRF/VRV based Hi-wall type room/indoor unit (IDU) of nominal cooling capacity 1.0TR (358 cfm) to 1.25TR (417 cfm) having EER as per BEE standards and specifications with multiple speed evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, in built drain pump, expansion device, cordless remote control with necessary controls and electrical terminal to receive power supply, etc. IDU shall have anti-corrosive coating suitable for coastal area. Unit shall be of decorative slim dimension suitable indoor wall mounting. The indoor unit shall also have an electronic control console. The unit shall be suitable for wall mounting and provided with suitable mounting brackets with any additional refrigerant and oil charge as per requirement during installation complete.	Each	21319
3-11-15	Supply, installation, testing and commissioning of VRF/VRV based Hi-wall type indoor unit (IDU) of nominal cooling capacity 1.3TR (421 cfm) to 1.7TR (586 cfm) having EER as per BEE standards and specifications with multiple speed evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, expansion device, cordless remote control with necessary controls, with 3-core copper flexible cord of required length and electrical terminal to receive power supply, etc. IDU shall have anticorrosive coating suitable for coastal area. Unit shall be suitable for indoor wall mounting, having an electronic control console, provided with suitable mounting brackets with any additional refrigerant and oil charge as per the requirement during installation, connected to the system complete.	Each	23130
3-11-16	Supply, installation, testing and commissioning of VRF/VRV based Hi-wall type indoor unit (IDU) of nominal cooling capacity 1.8TR (594 cfm) to 2.2TR (655 cfm) having EER as per BEE standards and specifications with multiple speed evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, expansion device, cordless remote control with necessary controls, with 3-core copper flexible cord of required length and electrical terminal to receive power supply, etc. IDU shall have anticorrosive coating suitable for coastal area. Unit shall be suitable for indoor wall mounting, having an electronic control console, provided with suitable mounting brackets with any additional refrigerant and oil charge as per the requirement during installation, connected to the system complete.	Each	31100

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-11-17	Supply, installation, testing and commissioning of VRF/VRV based ceiling suspended 4 Way cassette indoor unit (IDU) compact/standard size of nominal cooling capacity 0.6TR (420 cfm)/0.8TR (441 cfm) having EER as per BEE standards and specifications, suitable as per site requirement with swing louvers and adjustable blades from sides. IDU with drainage arrangements, fan, refrigerant liquid and refrigerant piping, cordless remote control, and fresh air port etc. IDU shall have anti corrosive coating suitable for coastal area in all respects suitable to operate on 1-phase, 230V, 50Hz, AC supply complete. The unit consisting with any additional refrigerant and oil charge as per requirement during installation.	Each	30324
3-11-18	Supply, installation, testing and commissioning of VRF/VRV based ceiling suspended 4 Way cassette room/indoor unit (IDU-compact/standard size) of nominal cooling capacity 1.0TR (441 cfm) to 1.3TR (512 cfm) having EER as per BEE standards and specifications, suitable as per site requirement with swing louvers and adjustable blades from sides. IDU with drainage arrangements, fan, refrigerant liquid and refrigerant piping, cordless remote control, and fresh air port etc. IDU shall have anti corrosive coating suitable for coastal area in all respects suitable to operate on 1-phase, 230V, 50Hz, AC supply complete. The unit consisting with any additional refrigerant and oil charge as per requirement during installation.	Each	35035
3-11-19	Supply, installation, testing and commissioning of VRF/VRV based ceiling suspended 4 Way cassette room/indoor unit (IDU-compact/standard size) of nominal cooling capacity 1.5TR (512 cfm) to 1.8TR (618 cfm) having EER as per BEE standards and specifications, suitable as per site requirement with swing louvers and adjustable blades from sides. IDU with drainage arrangements, fan, refrigerant liquid and refrigerant piping, cordless remote control, and fresh air port etc. IDU shall have anti corrosive coating suitable for coastal area in all respects suitable to operate on 1-phase, 230V, 50Hz, AC supply complete. The unit consisting with any additional refrigerant and oil charge as per requirement during installation.	Each	37450
3-11-20	Supply, installation, testing and commissioning of VRF/VRV based ceiling suspended 4 Way cassette room/indoor unit (IDU-compact/standard size) of nominal cooling capacity 2.0TR (618 cfm) to 2.3TR (671 cfm) having EER as per BEE standards and specifications, suitable as per site requirement with swing louvers and adjustable blades from sides. IDU with drainage arrangements, fan, refrigerant liquid and refrigerant piping, cordless remote control, and fresh air port etc. IDU shall have anti corrosive coating suitable for coastal area in all respects suitable to operate on 1-phase, 230V, 50Hz, AC supply complete. The unit consisting with any additional refrigerant and oil charge as per requirement during installation.	Each	37812
3-11-21	Supply, installation, testing and commissioning of VRF/VRV based ceiling suspended 4 Way cassette room/indoor unit (IDU-compact / standard size) of nominal cooling capacity 2.6TR (918 cfm) to 2.8TR (1100 cfm) having EER as per BEE standards and specifications, suitable as per site requirement with swing louvers and adjustable blades from sides. IDU with drainage arrangements, fan, refrigerant liquid and refrigerant piping, cordless remote control, and fresh air port etc. IDU shall have anti corrosive coating suitable for coastal area in all respects suitable to operate on 1-phase, 230V, 50Hz, AC supply complete. The unit consisting with any additional refrigerant and oil charge as per requirement during installation.	Each	38657

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-11-22	Supply, installation, testing and commissioning of VRF/VRV based ceiling suspended 4 Way cassette room/indoor unit (IDU-compact / standard size) of nominal cooling capacity 3.0TR (1100 cfm) to 3.2TR (1165 cfm) having EER as per BEE standards and specifications, suitable as per site requirement with swing louvers and adjustable blades from sides. IDU with drainage arrangements, fan, refrigerant liquid and refrigerant piping, cordless remote control, and fresh air port etc. IDU shall have anti corrosive coating suitable for coastal area in all respects suitable to operate on 1-phase, 230V, 50Hz, AC supply complete. The unit consisting with any additional refrigerant and oil charge as per requirement during installation.	Each	39261
3-11-23	Supply, installation, testing and commissioning of VRF/VRV based ceiling suspended 4 Way cassette room/indoor unit (IDU-compact / standard size) of nominal cooling capacity 3.3TR (1165 cfm) to 4.0TR (1218 cfm) having EER as per BEE standards and specifications, suitable as per site requirement with swing louvers and adjustable blades from sides. IDU with drainage arrangements, fan, refrigerant liquid and refrigerant piping, cordless remote control, and fresh air port etc. IDU shall have anti corrosive coating suitable for coastal area in all respects suitable to operate on 1-phase, 230V, 50Hz, AC supply complete. The unit consisting with any additional refrigerant and oil charge as per requirement during installation.	Each	39865
3-11-24	Supply, installation, testing and commissioning of VRF/VRV based ceiling suspended 4 Way cassette room/indoor unit (IDU-compact / standard size) of nominal cooling capacity 4.1TR (1218 cfm) to 5.0TR (1624 cfm)of suitable cfm having EER as per BEE standards and specifications, suitable as per site requirement with swing louvers and adjustable blades from sides. IDU with drainage arrangements, fan, refrigerant liquid and refrigerant piping, cordless remote control, and fresh air port etc. IDU shall have anti corrosive coating suitable for coastal area in all respects suitable to operate on 1-phase, 230V, 50Hz, AC supply complete. The unit consisting with any additional refrigerant and oil charge as per requirement during installation.	Each	57940
3-11-25	Supply, installation, testing and commissioning of VRF/VRV based ceiling suspended 2 way cassette room/indoor unit (IDU-compact / standard size) of nominal cooling capacity 0.6TR (420 cfm) to 0.8TR (441 cfm) having EER as per BEE standards and specifications, suitable as per site requirement with swing louvers and adjustable blades from sides. IDU with drainage arrangements, fan, refrigerant liquid and refrigerant piping, cordless remote control, and fresh air port etc. IDU shall have anti corrosive coating suitable for coastal area in all respects suitable to operate on 1-phase, 230V, 50Hz, AC supply complete. The unit consisting with any additional refrigerant and oil charge as per requirement during installation.	Each	50974
3-11-26	Supply, installation, testing and commissioning of VRF/VRV based ceiling suspended 2 way cassette room/indoor unit (IDU-compact / standard size) of nominal cooling capacity 1.0TR (441 cfm) to 1.3TR (512 cfm) having EER as per BEE standards and specifications, suitable as per site requirement with swing louvers and adjustable blades from sides. IDU with drainage arrangements, fan, refrigerant liquid and refrigerant piping, cordless remote control, and fresh air port etc. IDU shall have anti corrosive coating suitable for coastal area in all respects suitable to operate on 1-phase, 230V, 50Hz, AC supply complete. The unit consisting with any additional refrigerant and oil charge as per requirement during installation.	Each	61841

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-11-27	Supply, installation, testing and commissioning of VRF/VRV based ceiling suspended 2 way cassette room/indoor unit (IDU-compact / standard size) of nominal cooling capacity 1.4TR (512 cfm) to 1.7TR (618 cfm) having EER as per BEE standards and specifications, suitable as per site requirement with swing louvers and adjustable blades from sides. IDU with drainage arrangements, fan, refrigerant liquid and refrigerant piping, cordless remote control, and fresh air port etc. IDU shall have anti corrosive coating suitable for coastal area in all respects suitable to operate on 1-phase, 230V, 50Hz, AC supply complete. The unit consisting with any additional refrigerant and oil charge as per requirement during installation.	Each	63290
3-11-28	Supply, installation, testing and commissioning of VRF/VRV based ceiling suspended 2 way cassette room/indoor unit (IDU-compact / standard size) of nominal cooling capacity 1.8TR (565 cfm) to 2.0TR (618 cfm) having EER as per BEE standards and specifications, suitable as per site requirement with swing louvers and adjustable blades from sides. IDU with drainage arrangements, fan, refrigerant liquid and refrigerant piping, cordless remote control, and fresh air port etc. IDU shall have anti corrosive coating suitable for coastal area in all respects suitable to operate on 1-phase, 230V, 50Hz, AC supply complete. The unit consisting with any additional refrigerant and oil charge as per requirement during installation.	Each	64498
3-11-29	Supply, installation, testing and commissioning of VRF/VRV based ceiling suspended 2 way cassette room/indoor unit (IDU-compact / standard size) of nominal cooling capacity 2.1TR (671 cfm) to 2.7TR (918 cfm) having EER as per BEE standards and specifications, suitable as per site requirement with swing louvers and adjustable blades from sides. IDU with drainage arrangements, fan, refrigerant liquid and refrigerant piping, cordless remote control, and fresh air port etc. IDU shall have anti corrosive coating suitable for coastal area in all respects suitable to operate on 1-phase, 230V, 50Hz, AC supply complete. The unit consisting with any additional refrigerant and oil charge as per requirement during installation.	Each	72208
3-11-30	Supply, installation, testing and commissioning of VRF/VRV based ceiling suspended 2 way cassette room/indoor unit (IDU-compact / standard size) of nominal cooling capacity 2.8TR (1130 cfm) to 3.7TR (1377 cfm) having EER as per BEE standards and specifications, suitable as per site requirement with swing louvers and adjustable blades from sides. IDU with drainage arrangements, fan, refrigerant liquid and refrigerant piping, cordless remote control, and fresh air port etc. IDU shall have anti corrosive coating suitable for coastal area in all respects suitable to operate on 1-phase, 230V, 50Hz, AC supply complete. The unit consisting with any additional refrigerant and oil charge as per requirement during installation.	Each	83819
3-11-31	Supply, installation, testing and commissioning of VRF/VRV based ceiling suspended 2 way cassette room/indoor unit (IDU-compact / standard size) of nominal cooling capacity 3.8TR (1377 cfm) to 4.7TR (1624 cfm) having EER as per BEE standards and specifications, suitable as per site requirement with swing louvers and adjustable blades from sides. IDU with drainage arrangements, fan, refrigerant liquid and refrigerant piping, cordless remote control, and fresh air port etc. IDU shall have anti corrosive coating suitable for coastal area in all respects suitable to operate on 1-phase, 230V, 50Hz, AC supply complete. The unit consisting with any additional refrigerant and oil charge as per requirement during installation.	Each	98034

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-11-32	Supply, installation, testing and commissioning of VRF/VRV based ceiling suspended 1 way cassette room/indoor unit (IDU-compact / standard size) of nominal cooling capacity 0.6TR (420 cfm) / 0.8TR (441 cfm) having EER as per BEE standards and specifications, suitable as per site requirement with swing louvers and adjustable blades from sides. IDU with drainage arrangements, fan, refrigerant liquid and refrigerant piping, cordless remote control, and fresh air port etc. IDU shall have anti corrosive coating suitable for coastal area in all respects suitable to operate on 1-phase, 230V, 50Hz, AC supply complete. The unit consisting with any additional refrigerant and oil charge as per requirement during installation.	Each	68091
3-11-33	Supply, installation, testing and commissioning of VRF/VRV based ceiling suspended 1 way cassette room/indoor unit (IDU-compact / standard size) of nominal cooling capacity 1.0TR (441 cfm) to 1.3TR (512 cfm to 530 cfm) having EER as per BEE standards and specifications, suitable as per site requirement with swing louvers and adjustable blades from sides. IDU with drainage arrangements, fan, refrigerant liquid and refrigerant piping, cordless remote control, and fresh air port etc. IDU shall have anti corrosive coating suitable for coastal area in all respects suitable to operate on 1-phase, 230V, 50Hz, AC supply complete. The unit consisting with any additional refrigerant and oil charge as per requirement during installation.	Each	50853
3-11-34	Supply, installation, testing and commissioning of VRF/VRV based ceiling suspended 1 way cassette room/indoor unit (IDU-compact / standard size) of nominal cooling capacity 1.4TR (512 cfm) to 2.0TR (618 cfm) having EER as per BEE standards and specifications, suitable as per site requirement with swing louvers and adjustable blades from sides. IDU with drainage arrangements, fan, refrigerant liquid and refrigerant piping, cordless remote control, and fresh air port etc. IDU shall have anti corrosive coating suitable for coastal area in all respects suitable to operate on 1-phase, 230V, 50Hz, AC supply complete. The unit consisting with any additional refrigerant and oil charge as per requirement during installation complete.	Each	73795
3-11-35	Supply, installation, testing and commissioning of VRF/VRV based ceiling suspended 1 way cassette room/indoor unit (IDU-compact / standard size) of nominal cooling capacity 1.8TR (575 cfm) to 2.7TR (953 cfm) having EER as per BEE standards and specifications, suitable as per site requirement with swing louvers and adjustable blades from sides. IDU with drainage arrangements, fan, refrigerant liquid and refrigerant piping, cordless remote control, and fresh air port etc. IDU shall have anti corrosive coating suitable for coastal area in all respects suitable to operate on 1-phase, 230V, 50Hz, AC supply complete. The unit consisting with any additional refrigerant and oil charge as per requirement during installation complete.	Each	80998
3-11-36	Supply, installation, testing and commissioning of VRF/VRF based concealed split ductable type, high static room/indoor unit (IDU) having nominal cooling capacity of 0.8TR (280 cfm) to 1.1TR (400 cfm) having EER as per BEE standards and specifications with evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, in built drain pump, expansion device, cordless remote control with necessary controls and electrical terminal to receive power supply, etc. IDU shall have anti-corrosive coating suitable for coastal area. Unit shall be of decorative slim dimension suitable for ceiling suspended having an electronic control console with providing any additional refrigerant and oil charge as per requirement during installation complete.	Each	30819

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-11-37	Supply, installation, testing and commissioning of VRF/VRF based concealed split ductable type, high static room/indoor unit (IDU) having nominal cooling capacity of 1.2TR(400 cfm) to 1.7TR (600 cfm) having EER as per BEE standards and specifications with evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, in built drain pump, expansion device, cordless remote control with necessary controls and electrical terminal to receive power supply, etc. IDU shall have anti-corrosive coating suitable for coastal area. Unit shall be of decorative slim dimension suitable for ceiling suspended having an electronic control console with providing any additional refrigerant and oil charge as per requirement during installation complete .	Each	31423
3-11-38	Supply, installation, testing and commissioning of VRF/VRF based concealed split ductable type, high static room/indoor unit (IDU) having nominal cooling capacity of 1.8TR (600 cfm) to 2.0TR (800 cfm) having EER as per BEE standards and specifications with evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, in built drain pump, expansion device, cordless remote control with necessary controls and electrical terminal to receive power supply, etc. IDU shall have anti-corrosive coating suitable for coastal area. Unit shall be of decorative slim dimension suitable for ceiling suspended having an electronic control console with providing any additional refrigerant and oil charge as per requirement during installation complete.	Each	24351
3-11-39	Supply, installation, testing and commissioning of VRF/VRF based floor/ceiling suspended dual mount type, room/indoor unit (IDU) having nominal cooling capacity of 0.8TR(280 cfm) to 1.1TR (400 cfm) having EER as per BEE standards and specifications with evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, in built drain pump, expansion device, cordless remote control with necessary controls and electrical terminal to receive power supply, etc. IDU should have anti-corrosive coating suitable for coastal area. unit shall be of decorative slim dimension suitable for ceiling suspended having an electronic control console with providing any additional refrigerant and oil charge as per requirement during installation complete.	Each	41676
3-11-40	Supply, installation, testing and commissioning of VRF/VRF based floor/ceiling suspended dual mount type, room/indoor unit (IDU) having nominal cooling capacity of 1.2TR (400 cfm) to 1.5TR(600 cfm) having EER as per BEE standards and specifications with evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, in built drain pump, expansion device, cordless remote control with necessary controls and electrical terminal to receive power supply, etc. IDU should have anti-corrosive coating suitable for coastal area. unit shall be of decorative slim dimension suitable for ceiling suspended having an electronic control console with providing any additional refrigerant and oil charge as per requirement during installation complete.	Each	42306

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-11-41	Supply, installation, testing and commissioning of VRF/VRF based floor/ceiling suspended dual mount type, room/indoor unit (IDU) having nominal cooling capacity of 1.2TR (600 cfm) to 1.5TR (800 cfm) having EER as per BEE standards and specifications with evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, in built drain pump, expansion device, cordless remote control with necessary controls and electrical terminal to receive power supply, etc. IDU should have anti-corrosive coating suitable for coastal area. unit shall be of decorative slim dimension suitable for ceiling suspended having an electronic control console with providing any additional refrigerant and oil charge as per requirement during installation complete.	Each	42763
3-11-42	Supply, installation, testing and commissioning of VRF/VRF based floor/ceiling suspended dual mount type, room/indoor unit (IDU) having nominal cooling capacity of 2.1TR (800 cfm) to 2.6TR (1000 cfm) having EER as per BEE standards and specifications with evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, in built drain pump, expansion device, cordless remote control with necessary controls and electrical terminal to receive power supply, etc. IDU should have anti-corrosive coating suitable for coastal area. unit shall be of decorative slim dimension suitable for ceiling suspended having an electronic control console with providing any additional refrigerant and oil charge as per requirement during installation complete.	Each	47230
3-11-43	Supply, installation, testing and commissioning of VRF/VRF based floor/ceiling suspended dual mount type, room/indoor unit (IDU) having nominal cooling capacity of 3.2TR (1200 cfm) to 3.6TR(1400 cfm) having EER as per BEE standards and specifications with evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, in built drain pump, expansion device, cordless remote control with necessary controls and electrical terminal to receive power supply, etc. IDU should have anti-corrosive coating suitable for coastal area. unit shall be of decorative slim dimension suitable for ceiling suspended having an electronic control console with providing any additional refrigerant and oil charge as per requirement during installation complete.	Each	50008
3-11-44	Supply, installation, testing and commissioning of VRV/VRF based floor mount type vertical, room/indoor unit (IDU) having nominal cooling capacity of 2.2TR (420 cfm) to 2.3TR (560 cfm) having EER as per BEE standards and specifications with evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, in built drain pump, expansion device, cordless remote control with necessary controls and electrical terminal to receive power supply, etc. IDU shall have anti-corrosive coating suitable for coastal area with decorative slim dimension with an electronic control console, additional refrigerant and oil charge as per requirement during installation complete.	Each	39852

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-11-45	Supply, installation, testing and commissioning of VRV/VRF based floor mount type vertical, room/indoor unit (IDU) having nominal cooling capacity of 2.8TR (1000 cfm) to 3.2TR (1200 cfm) having EER as per BEE standards and specifications with evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, in built drain pump, expansion device, cordless remote control with necessary controls and electrical terminal to receive power supply, etc. IDU shall have anti-corrosive coating suitable for coastal area with decorative slim dimension with an electronic control console, additional refrigerant and oil charge as per requirement during installation complete.	Each	44724
3-11-46	Supply, installation, testing and commissioning of VRV/VRF based floor mount type vertical, room/indoor unit (IDU) having nominal cooling capacity of 4.0TR (1400 cfm) having EER as per BEE standards and specifications with evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, in built drain pump, expansion device, cordless remote control with necessary controls and electrical terminal to receive power supply, etc. IDU shall have anti-corrosive coating suitable for coastal area with decorative slim dimension with an electronic control console, additional refrigerant and oil charge as per requirement during installation complete.	Each	51255
3-11-47	Supply, installation, testing and commissioning of VRV/VRF based floor mount type vertical, room/indoor unit (IDU) having nominal cooling capacity of 5.0TR (1624 cfm) having EER as per BEE standards and specifications with evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, in built drain pump, expansion device, cordless remote control with necessary controls and electrical terminal to receive power supply, etc. IDU shall have anti-corrosive coating suitable for coastal area with decorative slim dimension with an electronic control console, additional refrigerant and oil charge as per requirement during installation complete.	Each	77384
3-11-48	Supply, installation, testing and commissioning of VRV / VRF based floor mount type package, room/indoor unit (IDU) having nominal cooling capacity of 8.0TR (3200 cfm) having EER as per BEE standards and specifications with evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, in built drain pump, expansion device, corded remote control with necessary controls and electrical terminal to receive power supply, etc. having anti-corrosive coating suitable for coastal area with decorative slim dimension suitable floor mounting arrangement, an electronic control console and any additional refrigerant and oil charge as per requirement during installation complete.	Each	96353
3-11-49	Supply, installation, testing and commissioning of VRV / VRF based floor mount type package, room/indoor unit (IDU) having nominal cooling capacity of 10.0TR (4000 cfm) having EER as per BEE standards and specifications with evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, in built drain pump, expansion device, corded remote control with necessary controls and electrical terminal to receive power supply, etc. having anti-corrosive coating suitable for coastal area with decorative slim dimension suitable floor mounting arrangement, an electronic control console and any additional refrigerant and oil charge as per requirement during installation complete.	Each	106312

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-11-50	Supply, installation, testing and commissioning of VRV / VRF based ductable type, high static room/indoor unit (IDU) having nominal cooling capacity of 0.8TR (280 cfm) to 1.5TR (600 cfm) having EER as per BEE standards and specifications with evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, in built drain pump, expansion device, cordless remote control with necessary controls and electrical terminal to receive power supply, etc. having anti-corrosive coating suitable for coastal area and decorative slim dimension suitable for ceiling suspended arrangement with an electronic control console and any additional refrigerant and oil charge as per requirement during installation complete.	Each	31064
3-11-51	Supply, installation, testing and commissioning of VRV / VRF based ductable type, high static room/indoor unit (IDU) having nominal cooling capacity of 2.1TR (800 cfm) to 2.4TR (960 cfm) having EER as per BEE standards and specifications with evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, in built drain pump, expansion device, cordless remote control with necessary controls and electrical terminal to receive power supply, etc. having anti-corrosive coating suitable for coastal area and decorative slim dimension suitable for ceiling suspended arrangement with an electronic control console and any additional refrigerant and oil charge as per requirement during installation complete.	Each	31668
3-11-52	Supply, installation, testing and commissioning of VRV / VRF based ductable type, high static room/indoor unit (IDU) having nominal cooling capacity of 2.5TR (980 cfm) to 3.0TR (1200 cfm) having EER as per BEE standards and specifications with evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, in built drain pump, expansion device, cordless remote control with necessary controls and electrical terminal to receive power supply, etc. having anti-corrosive coating suitable for coastal area and decorative slim dimension suitable for ceiling suspended arrangement with an electronic control console and any additional refrigerant and oil charge as per requirement during installation complete.	Each	37524
3-11-53	Supply, installation, testing and commissioning of VRV / VRF based ductable type, high static indoor unit (IDU) having nominal cooling capacity of 3.1TR (1240 cfm) to 4.0TR (1600 cfm) having EER as per BEE standards and specifications with evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, expansion device, cordless remote control with necessary controls and electrical terminal to receive power supply, etc. having anti-corrosive coating suitable for coastal area, with suitable ceiling suspension arrangement, with an electronic control console and any additional refrigerant and oil charge as per requirement during installation connected with the system complete.	Each	46205
3-11-54	Supply, installation, testing and commissioning of VRV / VRF based ductable type, high static room/indoor unit (IDU) having nominal cooling capacity of 4.1TR (1640 cfm) to 5.0TR (2000 cfm) having EER as per BEE standards and specifications with evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, in built drain pump, expansion device, cordless remote control with necessary controls and electrical terminal to receive power supply, etc. having anti-corrosive coating suitable for coastal area and decorative slim dimension suitable for ceiling suspended arrangement with an electronic control console and any additional refrigerant and oil charge as per requirement during installation complete.	Each	52303

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-11-55	Supply, installation, testing and commissioning of VRV / VRF based ductable type, high static room/indoor unit (IDU) having nominal cooling capacity of 5.1TR (2040 cfm) to 6.0TR 2400 cfm) having EER as per BEE standards and specifications with evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, in built drain pump, expansion device, cordless remote control with necessary controls and electrical terminal to receive power supply, etc. having anti-corrosive coating suitable for coastal area and decorative slim dimension suitable for ceiling suspended arrangement with an electronic control console and any additional refrigerant and oil charge as per requirement during installation complete.	Each	58596
3-11-56	Supply, installation, testing and commissioning of VRV / VRF based ductable type, high static room/indoor unit (IDU) having nominal cooling capacity of 8.0TR (3200 cfm) having EER as per BEE standards and specifications with evaporator fan with motor, copper tube aluminium fin evaporator coil, washable air filter, insulated drain tray, in built drain pump, expansion device, cordless remote control with necessary controls and electrical terminal to receive power supply, etc. having anti-corrosive coating suitable for coastal area and decorative slim dimension suitable for ceiling suspended arrangement with an electronic control console and any additional refrigerant and oil charge as per requirement during installation complete.	Each	64333
3-11-57	Supply, installation, testing and commissioning of VRV/VRF based ceiling suspended 4.0TR treated fresh air (TFA) (3310 cfm) room/IDU with evaporator fan with motor, copper tube, aluminium fin evaporator coil, washable air filter, insulated drain tray, in built drain pump, expansion device, cordless remote control with necessary controls and electrical terminal to receive power supply, etc. having anti-corrosive coating suitable for coastal area with decorative slim dimension suitable ceiling suspended arrangement and an electronic control console with any additional refrigerant and oil charge as per requirement during installation complete.	Each	54033
3-11-58	Supply, installation, testing and commissioning of VRV/VRF based ceiling suspended 6.5TR treated fresh air (TFA) (5380 cfm) room/IDU with evaporator fan with motor, copper tube, aluminium fin evaporator coil, washable air filter, insulated drain tray, in built drain pump, expansion device, cordless remote control with necessary controls and electrical terminal to receive power . having anti-corrosive coating suitable for coastal area with decorative slim dimension suitable ceiling suspended arrangement and an electronic control console with any additional refrigerant and oil charge as per requirement during installation complete.	Each	74198
3-11-59	Supply, installation, testing and commissioning of VRV / VRF based ceiling suspended 8.0TR (6600 cfm) to 10.0TR (8200 cfm) Treated Fresh Air (TFA) (5380 cfm) room/IDU with evaporator fan with motor, copper tube, aluminium fin evaporator coil, washable air filter, insulated drain tray, in built drain pump, expansion device, cordless remote control with necessary controls and electrical terminal to receive power . having anti-corrosive coating suitable for coastal area with decorative slim dimension suitable ceiling suspended arrangement and an electronic control console with any additional refrigerant and oil charge as per requirement during installation complete.	Each	93498
3-11-60	Supplying, erecting, testing & commissioning fresh air intake system, ductable circular inline fresh air fan inlet unit having 300 cfm capacity with maintaining the static pressure minimum 20mm suitable to operate on 1 phase, 230V, 50Hz, A.C. supply complete.	Each	5220

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-11-61	Supplying, erecting, testing & commissioning fresh air intake system, ductable circular inline fresh air fan inlet unit having 1000 cfm capacity with maintaining the static pressure minimum 20mm suitable to operate on 1ph, 230 V, 50Hz, A.C. supply complete.	Each	15836
3-11-62	Supplying and erecting circular flexible/rigid PVC pipe duct of size 40mm dia , 4mm thickness with required couplers, reducers, T-joints, Y-joints elbows and necessary supports etc. with sealing with provided control/air flow regulating valves/dampers, filters at position complete.	m	2345
3-11-63	Supplying and erecting circular flexible/rigid PVC pipe duct of size 50mm dia , 4mm thickness with required couplers, reducers, T-joints, Y-joints elbows and necessary supports etc. with sealing with provided control/air flow regulating valves/dampers, filters at position complete.	m	2537
3-11-64	Supplying and erecting circular flexible/rigid PVC pipe duct of size 80mm dia , 4mm thickness with required couplers, reducers, T-joints, Y-joints elbows and necessary supports etc. with sealing with provided control/air flow regulating valves/dampers, filters at position complete.	m	2714
3-11-65	Supplying and erecting circular flexible/rigid PVC pipe duct of size 100mm dia , 4mm thickness with required couplers, reducers, T-joints, Y-joints elbows and necessary supports etc. with sealing with provided control/air flow regulating valves / dampers, filters at position complete.	m	3386
3-11-66	Supplying and erecting circular flexible/rigid PVC pipe duct of size 150mm dia , 4mm thickness with required couplers, reducers, T-joints, Y-joints elbows and necessary supports etc. with sealing with provided control/air flow regulating valves/dampers, filters at position complete.	m	3518
3-11-67	Supplying and erecting circular flexible/rigid PVC pipe duct of size 200mm dia , 4mm thickness with required couplers, reducers, T-joints, Y-joints elbows and necessary supports etc. with sealing with provided control/air flow regulating valves/dampers, filters at position complete.	m	3905
3-11-68	Supplying and erecting an air flow regulating valves/dampers in provided flexible or rigid duct/pipe of 40mm size with an alteration for existing flexible PVC pipe duct and necessary joints, sealing, couplings at position complete .	Each	5517
3-11-69	Supplying and erecting an air flow regulating valves/dampers in provided flexible or rigid duct/pipe of 50mm size with an alteration for existing flexible PVC pipe duct and necessary joints, sealing, couplings at position complete.	Each	6046
3-11-70	Supplying and erecting an air flow regulating valves/dampers in provided flexible or rigid duct/pipe of 80mm size with an alteration for existing flexible PVC pipe duct and necessary joints, sealing, couplings at position complete.	Each	6561
3-11-71	Supplying and erecting an air flow regulating valves/dampers in provided flexible or rigid duct/pipe of 100 mm size with an alteration for existing flexible PVC pipe duct and necessary joints, sealing, couplings at position complete.	Each	7022
3-11-72	Supplying and erecting an air flow regulating valves/dampers in provided flexible or rigid duct/pipe of 150 mm size with an alteration for existing flexible PVC pipe duct and necessary joints, sealing, couplings at position complete.	Each	7571
3-11-73	Supplying and erecting an air flow regulating valves/dampers in provided flexible or rigid duct / pipe of 200 mm size with an alteration for existing flexible PVC pipe duct and necessary joints, sealing, couplings at position complete.	Each	9007

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-11-74	Supply, installation, testing and commissioning air curtain of 3 feet width having air throw velocity of 12 to 14m/sec, low noise level up to 38 to 46dBA suitable for door height upto 9 feet , working on 1 phase, 230V, 50Hz, A.C. supply.	Each	18648
3-11-75	Supply, installation, testing and commissioning air curtain of 4 feet width having air throw velocity of 21m/sec, low noise level up to 38 to 46dBA suitable for door height upto 9 feet , working on 1 phase, 230V, 50Hz, A.C. supply.	Each	19538
3-11-76	Supply, installation, testing and commissioning air curtain of 6 feet width having air throw velocity of 21 m/sec, low noise level up to 38 to 46dBA suitable for door height upto 9 feet , working on 1 phase, 230V, 50Hz, A.C. supply.	Each	22707
3-11-77	Carrying out core cutting of size 3" to 5" dia x 15" length in the C.C./rock/stone wall with the help of specialized core cutting machine in proper manner and finishing the site as original.	Job	7519
3-11-78	Supply, installation, testing and commissioning wireless remote control having colour LCD panel, real time clock, temperature limitation (16 to 30° C , functions like filter clean reminder timer suitable to communicate with wired controller complete.	Each	1883
3-11-79	Supplying, erecting, testing and commissioning centralised programmable remote control panel (HMI) touch manager controls minimum 16 system of 64 ODU's can be controlled and up to 992 IDU's can be individually mounted and controlled indoor units having colour min 200mm size LCD touch panel, yearly schedule, power proportional distribution function, temperature limitation, history function complete erected on wall integrated with provided fire alarm system.	Each	48305
3-11-80	Supply, installation, testing and commissioning of manually operated, opposed blade, duct mounted, flanged volume control dampers of required sizes in GI construction with operating mechanism, mounting arrangement, rubber refrigerant kits etc. complete.	Sq.m	6531
3-11-81	Supply, installation, testing and commissioning of volume control box with collar for control damper of required sizes in GI construction with operating mechanism, mounting arrangement, rubber refrigerant kits etc. complete.	Each	6244
3-11-82	Supply, fabrication, installation and testing of flexible canvas connections constructed between ductable unit/dampers/ducting of suitable size with fire resist flexible double canvas sleeve complete.	Each	2931
3-11-83	Providing adhesive thermal insulation for supply return air duct with 19mm nitrile rubber insulation having R-value as per the prevailing provisions in ECBC-2017.	Sq.m	1037
3-11-84	Providing and applying of acoustic insulation for air ducts with 25mm thick, 48 kg/cu.m fiber glass faced with RP tissue and covered with 26 SWG perforated aluminium sheets complete.	Sq.m	1180
3-11-85	Supplying & erecting tile type modular diffuser made from aluminium sheet with powder coated matching to the ceiling shade for provided supply and return air complete.	Each	12728

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-11-86	Supplying and installation of high pressure grade required size copper connection Y or T- Joints/refnet complete erected on wall/ceiling with supports/raceways, Nitrile rubber insulation, painting etc. with brazing and testing for leakages confirming the normal operation of the VRV/VRF air conditioning system.	Each	6092
3-11-87	Supplying and installing of collar damper of galvanised iron material of upto 120 microns for anti corrosive resistance for supply air grill of suitable size.	Sq.m	6944
3-11-88	Supplying and erecting aluminium powder coated linear grill of suitable size for width length without collar dampers having matching colour with the existing false ceiling and suitable for deflection of 15/30/45°.	Job	1361
3-11-89	Supplying, laying/fixing, testing and commissioning of appropriate nominal refrigerant copper pipe of 41.3mm dia (OD) for liquid line/suction line supply and return piping of suitable gauge (hard copper pipe for liquid main line and soft copper pipe for refrigerant) along with necessary supports, hangers, clamps, vibration isolators and fittings such as bends, tees, valves, gauges, strainers with insulation of 19mm thick elastomeric nitrile rubber along with application of multicoating of VRV/VRF piping for protection against mechanical damages, fungal growth, flame spread, water permeance and ultra violet radiations with OEM standards of VRV/VRF air conditioning system complete.	m	2651
3-11-90	Supplying, laying/fixing, testing and commissioning of appropriate nominal refrigerant copper pipe of 34.9mm dia (OD) for liquid line/suction line supply and return piping of suitable gauge (hard copper pipe for liquid main line and soft copper pipe for refrigerant) along with necessary supports, hangers, clamps, vibration isolators and fittings such as bends, tees, valves, gauges, strainers with insulation of 19mm thick elastomeric nitrile rubber along with application of multicoating of VRV/VRF piping for protection against mechanical damages, fungal growth, flame spread, water permeance and ultra violet radiations with OEM standards of VRV/VRF air conditioning system complete.	m	2476
3-11-91	supplying, laying/fixing, testing and commissioning of appropriate nominal refrigerant copper pipe of 28.6mm dia (OD) for liquid line/suction line supply and return piping of suitable gauge (hard copper pipe for liquid main line and soft copper pipe for refrigerant) along with necessary supports, hangers, clamps, vibration isolators and fittings such as bends, tees, valves, gauges, strainers with insulation of 19mm thick elastomeric nitrile rubber along with application of multicoating of VRV/VRF piping for protection against mechanical damages, fungal growth, flame spread, water permeance and ultra violet radiations with OEM standards of VRV/VRF air conditioning system complete.	m	2424
3-11-92	supplying, laying/fixing, testing and commissioning of appropriate nominal refrigerant copper pipe of 22.2mm dia (OD) for liquid line/suction line supply and return piping of suitable gauge (hard copper pipe for liquid main line and soft copper pipe for refrigerant) along with necessary supports, hangers, clamps, vibration isolators and fittings such as bends, tees, valves, gauges, strainers with insulation of 19mm thick elastomeric nitrile rubber along with application of multicoating of VRV/VRF piping for protection against mechanical damages, fungal growth, flame spread, water permeance and ultraviolet radiation with OEM standards of VRV/VRF air conditioning system complete.	m	1623

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
3-11-93	supplying, laying/fixing, testing and commissioning of appropriate nominal refrigerant copper pipe of 19.1mm dia (OD) for liquid line/suction line supply and return piping of suitable gauge (hard copper pipe for liquid main line and soft copper pipe for refrigerant) along with necessary supports, hangers, clamps, vibration isolators and fittings such as bends, tees, valves, gauges, strainers with insulation of 19 mm thick elastomeric nitrile rubber along with application of multicoating of VRV/VRF piping for protection against mechanical damages, fungal growth, flame spread, water permeance and ultraviolet radiations with OEM standards of VRV/VRF air conditioning system complete.	m	1261
3-11-94	supplying, laying/fixing, testing and commissioning of appropriate nominal refrigerant copper pipe of 15.9 mm dia (OD) for liquid line/suction line supply and return piping of suitable gauge (hard copper pipe for liquid main line and soft copper pipe for refrigerant) along with necessary supports, hangers, clamps, vibration isolators and fittings such as bends, tees, valves, gauges, strainers with insulation of 19mm thick elastomeric nitrile rubber along with application of multicoating of VRV/VRF piping for protection against mechanical damages, fungal growth, flame spread, water permeance and ultraviolet radiations with OEM standards of VRV/VRF air conditioning system complete.	m	1108
3-11-95	supplying, laying/fixing, testing and commissioning of appropriate nominal refrigerant copper pipe of 12.7mm dia (OD) for liquid line/suction line supply and return piping of suitable gauge (hard copper pipe for liquid main line and soft copper pipe for refrigerant) along with necessary supports, hangers, clamps, vibration isolators and fittings such as bends, tees, valves, gauges, strainers with insulation of 19mm thick elastomeric nitrile rubber along with application of multicoating of VRV/VRF piping for protection against mechanical damages, fungal growth, flame spread, water permeance and ultraviolet radiations with OEM standards of VRV/VRF air conditioning system complete.	m	820
3-11-96	supplying, laying/fixing, testing and commissioning of appropriate nominal refrigerant copper pipe of 9.5 mm dia (OD) for liquid line/suction line supply and return piping of suitable gauge (hard copper pipe for liquid main line and soft copper pipe for refrigerant) along with necessary supports, hangers, clamps, vibration isolators and fittings such as bends, tees, valves, gauges, strainers with insulation of 19mm thick elastomeric nitrile rubber along with application of multicoating of VRV/VRF piping for protection against mechanical damages, fungal growth, flame spread, water permeance and ultraviolet radiations with OEM standards of VRV/VRF air conditioning system complete.	m	689
3-11-97	supplying, laying/fixing, testing and commissioning of appropriate nominal refrigerant copper pipe of 6.4mm dia (OD) for liquid line/suction line supply and return piping of suitable gauge (hard copper pipe for liquid main line and soft copper pipe for refrigerant) along with necessary supports, hangers, clamps, vibration isolators and fittings such as bends, tees, valves, gauges, strainers with insulation of 19mm thick elastomeric nitrile rubber along with application of multicoating of VRV/VRF piping for protection against mechanical damages, fungal growth, flame spread, water permeance and ultraviolet radiations with OEM standards of VRV/VRF air conditioning system complete.	m	533
Note	1) If cost of repairs of any appliances is more than 50% of the cost of new unit, replacement of same shall be proposed.		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
(New)	<p>2) Rate for Item no 3-11-77 is for one quantity only. For more than 1 qty upto 10 quantities reduce overall rate by 10%. For quantities more than 10 and less than 30, reduce overall rate by 20%. For quantities more than 30, reduce overall rate by 30%.</p> <p>3) Duct work insulation R value in m2 - K/W shall be as per table 5.8 of Energy Conservation Building Code (ECBC)-2017 user guide. Sample R values for duct insulation materials shall be referred from table 5.9.</p>		
<u>3.12 Dismantling</u>			
3-12-1	Dismantling the existing electric geyser or storage type water heater of any size along with plumbing connections and making the site clear.	Each	187
3-12-2	Dismantling the existing window type air conditioner of any type and capacity safely without any damages and making the site clear.	Each	467
3-12-3	Dismantling the existing split type air conditioner of any type and capacity safely without any damages and making the site clear.	Each	885
Note	The rates for item no 3.12.1 to 3.12.3 are inclusive of dismantling and handing over to section office inclusive of transportation upto 25 km between site and section office.		

Chapter: 4

Energy Saving Devices (ESD)

4.1 Solar hot water system	(ESD-SHWS)
4.2 Pipes for solar hot water system	(ESD-HWP)
4.3 Solar Batteries	(ESD-SOL/BAT)
4.4 Rooftop OFF grid solar systems	(ESD-RT-OFG)
4.5 Rooftop ON grid solar systems	(ESD-RT-ONG)
4.6 Heat Pump	(ESD-HP)
4.7 Electric Vehicle Charger	(ESD-EVC)
4.8 Miscellaneous	
4.9 Dismantling	

Chapter 4 : ENERGY SAVING DEVICES (ESD)

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)

4.1 Solar hot water system (ESD-SHWS)

4-1-1	Supplying, installing, testing and commissioning of FPC Solar water heating system without heat exchanger type of 100 LPD capacity with SS water tank of 0.5 mm thickness conforming to IS1239 Part-I :2004 complete as per specification no. ESD-SHWS-FPC	Each	27334
4-1-2	Supplying, installing, testing and commissioning of FPC solar water heating system without heat exchanger type of 200 LPD capacity with SS water tank of 0.5 mm thickness conforming to IS1239 Part-I :2004 complete as per specification no. ESD-SHWS-FPC	Each	46873
4-1-3	Supplying, installing, testing and commissioning of FPC solar water heating system without heat exchanger type of 300 LPD capacity with SS water tank of 0.5 mm thickness conforming to IS1239 Part-I :2004 complete as per specification no. ESD-SHWS-FPC	Each	63805
4-1-4	Supplying, installing, testing and commissioning of FPC solar water heating system without heat exchanger type of 500 LPD capacity with SS water tank of 0.5 mm thickness conforming to IS1239 Part-I :2004 complete as per specification no. ESD-SHWS-FPC	Each	90636
4-1-5	Supplying, installing, testing and commissioning of ETC solar water heating system without heat exchanger type of 100 LPD capacity with SS water tank of 0.5 mm thickness conforming to IS1239 Part-I :2004 complete as per specification no. ESD-SHWS-ETC	Each	22186
4-1-6	Supplying, installing, testing and commissioning of ETC solar water heating system without heat exchanger type of 200 LPD capacity with SS water tank of 0.5 mm thickness conforming to IS1239 Part-I :2004 complete as per specification no. ESD-SHWS-ETC	Each	34393
4-1-7 (New)	Supplying, installing, testing and commissioning of ETC solar water heating system without heat exchanger type of 250 LPD capacity with SS water tank of thickness 0.5 mm, conforming to IS1239 Part-I :2004 complete as per specification no. ESD-SHWS-ETC	Each	38641
4-1-8	Supplying, installing, testing and commissioning of ETC solar water heating system without heat exchanger type of 300 LPD capacity with SS water tank of 0.5 mm thickness conforming to IS1239 Part-I :2004 complete as per specification no. ESD-SHWS-ETC	Each	45555
4-1-9	Supplying, installing, testing and commissioning of ETC solar water heating system without heat exchanger type of 500 LPD capacity with SS water tank of 0.5 mm thickness conforming to IS1239 Part-I :2004 complete as per specification no. ESD-SHWS-ETC	Each	67567
Note	For all hostel buildings, rest houses, circuit houses, dormitories, residential quarters and for replacement / renovation, solar water heating system shall be proposed instead of electrical geysers.		

4.2 Pipes for solar hot water system (ESD-HWP)

4-2-1	Supplying and erecting GI pipe 15 mm dia. B class 3.25 mm thickness with resin bonded flap rock wool /glass wool insulation, with necessary material as per specification No. ESD-HWP/TGP	m	319
4-2-2	Supplying and erecting GI pipe 20 mm dia B class 3.25 mm thickness with resin bonded flap rock wool /glass wool insulation, with necessary material as per specification No. ESD-HWP/TGP	m	340

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
4-2-3	Supplying and erecting GI pipe 25 mm dia B class 4.05 mm thickness with resin bonded flap rock wool /glass wool insulation, with necessary material as per specification No. ESD-HWP/TGP	m	467
4-2-4	Supplying and erecting GI pipe 32 mm dia B class 4.05 mm thickness with resin bonded flap rock wool /glass wool insulation, with necessary material as per specification No. ESD-HWP/TGP	m	554
4-2-5	Supplying and erecting GI pipe 40 mm dia B class 4.05 mm thickness with resin bonded flap rock wool /glass wool insulation, with necessary material as per specification No. ESD-HWP/TGP	m	619
4-2-6	Supplying and erecting GI pipe 50 mm dia B class 4.47 mm thickness with resin bonded flap rock wool /glass wool insulation, with necessary material as per specification No. ESD-HWP/TGP	m	835
4-2-7	Supplying and erecting elastomeric nitrile rubber / foam tube type sleeves for coating and insulating on provided PC / copper pipes having 9 mm thickness and inner diameter / sizes 6 mm for solar water heater/AC system.	m	59
4-2-8	Supplying and erecting elastomeric nitrile rubber / foam tube type sleeves for coating and insulating on provided PC / copper pipes having 9 mm thickness and inner diameter / sizes 9 mm for solar water heater/AC system.	m	67
4-2-9	Supplying and erecting elastomeric nitrile rubber / foam tube type sleeves for coating and insulating on provided PC / copper pipes having 9 mm thickness and inner diameter / sizes 12 mm for solar water heater/AC system.	m	73
4-2-10	Supplying and erecting elastomeric nitrile rubber / foam tube type sleeves for coating and insulating on provided PC / copper pipes having 9 mm thickness and inner diameter / sizes 16 mm for solar water heater/AC system.	m	83
4-2-11	Supplying and erecting elastomeric nitrile rubber / foam tube type sleeves for coating and insulating on provided PC / copper pipes having 9 mm thickness and inner diameter / sizes 19 mm for solar water heater/AC system.	m	96
4-2-12	Supplying and erecting elastomeric nitrile rubber / foam tube type sleeves for coating and insulating on provided PC / copper pipes having 9 mm thickness and inner diameter / sizes 22 mm for solar water heater/AC system.	m	105
4-2-13	Supplying and erecting elastomeric nitrile rubber / foam tube type sleeves for coating and insulating on provided PC / copper pipes having 9 mm thickness and inner diameter / sizes 28 mm for solar water heater/AC system.	m	119
4-2-14	Supplying and erecting elastomeric nitrile rubber / foam tube type sleeves for coating and insulating on provided PC / copper pipes having 9 mm thickness and inner diameter / sizes 32 mm for solar water heater/AC system.	m	129
4-2-15	Supplying and erecting elastomeric nitrile rubber / foam tube type sleeves for coating and insulating on provided PC / copper pipes having 9 mm thickness and inner diameter / sizes 42 mm for solar water heater/AC system.	m	143
4-2-16 (New)	Supplying and erecting 12/16 mm (ID/OD) Chlorinated polyvinyl chloride pipe (CPVC), thickness 1.7 mm conforming to IS 15778 (CTS Series) with necessary CPVC fittings and solvent cement for Solar Water Heater System as per specification No. ESD-HWP/CPVC	m	100

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
4-2-17 (New)	Supplying and erecting 16/20 mm (ID/OD) Chlorinated polyvinyl chloride pipe (CPVC), thickness 2.0 mm conforming to IS 15778 (CTS Series) with necessary CPVC fittings and solvent cement for Solar Water Heater System as per specification No. ESD-HWP/CPVC	m	141
4-2-18 (New)	Supplying and erecting 20/25 mm (ID/OD) Chlorinated polyvinyl chloride pipe (CPVC), thickness 2.6 mm conforming to IS 15778 (CTS Series) with necessary CPVC fittings and solvent cement for Solar Water Heater System as per specification No. ESD-HWP/CPVC	m	212
4-2-19 (New)	Supplying and erecting 25/32 mm (ID/OD) Chlorinated polyvinyl chloride pipe (CPVC), thickness 3.2 mm conforming to IS 15778 (CTS Series) with necessary CPVC fittings and solvent cement for Solar Water Heater System as per specification No. ESD-HWP/CPVC	m	339
4-2-20 (New)	Supplying and erecting 32/40 mm (ID/OD) Chlorinated polyvinyl chloride pipe (CPVC), thickness 3.8 mm conforming to IS 15778 (CTS Series) with necessary CPVC fittings and solvent cement for Solar Water Heater System as per specification No. ESD-HWP/CPVC	m	482
4-2-21 (New)	Supplying and erecting 40/50 mm (ID/OD) Chlorinated polyvinyl chloride pipe (CPVC), thickness 3.8 mm conforming to IS 15778 (CTS Series) with necessary CPVC fittings and solvent cement for Solar Water Heater System as per specification No. ESD-HWP/CPVC	m	709
Note	For Chlorinated Polyvinyl Chloride pipe, additional insulation of maximum 6 mm thickness may be proposed where there is drastic fall in temperature due to atmospheric condition.		

4.3 Solar Batteries (ESD-SOL)

4-3-1	Supplying, installing, testing and commissioning C-10 battery with capacity of 12V, 40 Ah with duty cycle 10-12 hrs. suitable to charge on PV cell with necessary wiring connections, nut bolts on provided stand with five years warranty as per specification no. ESD-SOL/BAT	Each	7028
4-3-2	Supplying, installing, testing and commissioning C-10 battery with capacity of 12 V, 75 Ah with duty cycle 10-12 hrs. suitable to charge on PV cell with necessary wiring connections, nut bolts on provided stand with five years warranty as per specification no. ESD-SOL/BAT	Each	9930
4-3-3 (New)	Supplying, installing, testing and commissioning C-10 battery with capacity of 12 V 100 Ah with duty cycle 10-12 hrs. suitable to charge on PV cell with necessary wiring connections, nut bolts on provided stand with five years warranty as per specification no. ESD-SOL/BAT	Each	10759
4-3-4	Supplying, installing, testing and commissioning C-10 battery with capacity of 12 V, 150 Ah with duty cycle 10-12 hrs. suitable to charge on PV cell with necessary wiring connections, nut bolts on provided stand with five years warranty as per specification no. ESD-SOL/BAT	Each	17323
4-3-5 (New)	Supplying, installing, testing and commissioning C-10 battery with capacity of 12 V, 200 Ah with duty cycle 10-12 hrs. suitable to charge on PV cell with necessary wiring connections, nut bolts on provided stand with five years warranty as per specification no. ESD-SOL/BAT	Each	23273
4-3-6 (New)	Supplying, installing, testing and commissioning C-10 battery with capacity of 12 V, 300 Ah with duty cycle 10-12 hrs. suitable to charge on PV cell with necessary wiring connections, nut bolts on provided stand with five years warranty as per specification no. ESD-SOL/BAT	Each	26685

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<i>4.4 Rooftop OFF grid solar systems (ESD-RT-OFG)</i>			
4-4-1	Supplying, installing, testing and commissioning of 1 kWp OFF-GRID solar power pack with interconnecting wires / cables up to 12 V pure sine wave solar power inverter (THD<3%), SPV Modules (335 WP X 03 Nos.), C-10 rated lead acid battery bank 12 V, 400 Ah (12V, 100 Ah x 4 nos.) suitable for 4 Hours backup with suitable MS powder coated stand to hold battery bank and keeping sufficient space for filling distilled water, canopy box to house inverter and other electronics, wiring up to solar inverter in casing and capping, display board, sign board , two distinct earthing, spike type lightning arrester, necessary accessories complete with 5 years ON-SITE warranty and fully comprehensive maintenance contract as per specification no. ESD-RT-OFG	Each	75338
4-4-2 (New)	Supplying, installing, testing and commissioning of 3 kWp OFF-GRID solar power pack with interconnecting wires / cables up to 24 V pure sine wave solar power inverter (THD<3%), SPV Modules (335 WP X 09 Nos.), C-10 rated lead acid battery bank 24 V, 600 Ah (12V, 300 Ah x 4 nos.) suitable for 4 Hours backup with suitable MS powder coated stand to hold battery bank and keeping sufficient space for filling distilled water, canopy box to house inverter and other electronics, wiring up to solar inverter in casing and capping, display board, sign board, two distinct earthing, spike type lightning arrester, necessary accessories complete with 5 years ON-SITE warranty and fully comprehensive maintenance contract as per specification no. ESD-RT-OFG	Each	226599
4-4-3 (New)	Supplying, installing, testing and commissioning of 5 kWp OFF-GRID solar power pack with interconnecting wires / cables up to 24V pure sine wave solar power inverter (THD<3%), SPV Modules (335 WP X 15 Nos.), C-10 rated lead acid battery bank 24V, 300Ah x 4 nos. (12V, 300 Ah x 8 nos) suitable for 4 Hours backup with suitable MS powder coated stand to hold battery bank and keeping sufficient space for filling distilled water, canopy box to house inverter and other electronics, wiring up to solar inverter in casing and capping, display board, sign board, two distinct earthing, spike type lightning arrester, necessary accessories complete with 5 years ON-SITE warranty and fully comprehensive maintenance contract as per specification no. ESD-RT-OFG	Each	373337
Note	<p>1. Only 25 meter length of aluminium conductor armoured cable of appropriate size is considered for item no. 4-4-1 to 4-4-3.</p> <p>2. Cost of mounting structure, PV cleaning unit, RMS system, additional wiring is not included in item.</p> <p>3. For installation of off-grid solar pV plant up to 10kWp, add Rs. 75338 /- per kWp for item no. 4-4-1 to 4-4-3 if required.</p>		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<i>4.5 Rooftop ON grid solar systems (ESD-RT-ONG)</i>			
4-5-1 (New)	Supplying, installing, testing and commissioning of 3 kWp ON-GRID Solar PV System / Plant consisting solar PV poly crystalline panel (335 Wp X 09 Nos.) and Solar ON-GRID Inverter of similar capacity (THD<3%) with interconnecting wires / cables up to solar ON GRID inverter, proper base plate, canopy box to house Inverter and necessary accessories i.e. ACDB/ DCDB , MCB etc. wiring up to solar Inverter in casing and capping, display board, sign board, two distinct earthing, lightning arrester, liaisoning charges, remote monitoring system with maintaining card / chip for 5 years including net charges for RMS system, complete up to net meter installation and export to the grid with 5 year ON-SITE warranty and fully comprehensive maintenance contract as per specification no. ESD-RT-ONG	Each	176159
4-5-2 (New)	Supplying, installing, testing and commissioning of 5 kWp ON-GRID Solar PV System / Plant consisting Solar PV Poly Crystalline Panel (335 Wp X 15 Nos.) and Solar ON-GRID Inverter of similar capacity (THD<3%) with interconnecting wires / cables up to solar ON GRID inverter, proper base plate, canopy box to house Inverter and necessary accessories i.e. ACDB/ DCDB , MCB etc. wiring up to solar Inverter in casing and capping, display board, sign board, two distinct earthing, lightning arrester, liaisoning charges, remote monitoring system with maintaining card/chip for 5 years including net charges for RMS system, complete up to net meter installation and export to the grid with 5 year ON-SITE warranty and fully comprehensive maintenance contract as per Specification no. ESD-RT-ONG	Each	289867
4-5-3 (New)	Supplying, installing, testing and commissioning of 10 kWp ON-GRID Solar PV System / Plant consisting Solar PV Poly Crystalline Panel (335 Wp X 30 Nos.) and Solar ON-GRID Inverter of similar capacity (THD<3%) with interconnecting wires / cables up to solar ON GRID inverter, proper base plate, canopy box to house Inverter and necessary accessories i.e. ACDB/ DCDB , MCB etc. wiring up to solar Inverter in casing and capping, display board, sign board, two distinct earthing, lightning arrester, liaisoning charges, remote monitoring system with maintaining card/chip for 5 years including net charges for RMS System, complete up to net meter installation and export to the grid with 5 year ON-SITE warranty and fully comprehensive maintenance contract as per Specification no. ESD-RT-ONG	Each	544669
4-5-4 (New)	Supplying, installing, testing and commissioning of 15 kWp ON-GRID Solar PV System / Plant consisting Solar PV Poly Crystalline Panel (335 Wp X 45 Nos.) and Solar ON-GRID Inverter of similar capacity (THD<3%) with interconnecting wires / cables up to solar ON GRID inverter, proper base plate, canopy box to house Inverter and necessary accessories i.e. ACDB/ DCDB , MCB etc. wiring up to solar Inverter in casing and capping, display board, sign board, two distinct earthing, lightning arrester, liaisoning charges, remote monitoring system with maintaining card/chip for 5 years including net charges for RMS System, complete up to net meter installation and export to the grid with 5 year ON-SITE warranty and fully comprehensive maintenance contract as per Specification no. ESD-RT-ONG	Each	782473

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
4-5-5 (New)	Supplying, installing, testing and commissioning of 20 kWp ON-GRID Solar PV System / Plant consisting Solar PV Poly Crystalline Panel (335 Wp X 60 Nos.) and Solar ON-GRID Inverter of similar capacity (THD<3%) with interconnecting wires / cables up to solar ON GRID inverter, proper base plate, canopy box to house Inverter and necessary accessories i.e. ACDB/ DCDB , MCB etc. wiring up to solar Inverter in casing and capping, display board, sign board, two distinct earthing, lightning arrester, liaisoning charges, remote monitoring system with maintaining card/chip for 5 years including net charges for RMS System, complete up to net meter installation and export to the grid with 5 year ON-SITE warranty and fully comprehensive maintenance contract as per Specification no. ESD-RT-ONG.	Each	1012625
4-5-6 (New)	Supplying, installing, testing and commissioning of 25 kWp ON-GRID Solar PV System / Plant consisting Solar PV Poly Crystalline Panel (335 Wp X 75 Nos.) and Solar ON-GRID Inverter of similar capacity (THD<3%) with interconnecting wires / cables up to solar ON GRID inverter, proper base plate, canopy box to house Inverter and necessary accessories i.e. ACDB/ DCDB , MCB etc. wiring up to solar Inverter in casing and capping, display board, sign board, two distinct earthing, lightning arrester, liaisoning charges, remote monitoring system with maintaining card / chip for 5 years including net charges for RMS System, complete up to net meter installation and export to the grid with 5 year ON-SITE warranty and fully comprehensive maintenance contract as per Specification no. ESD-RT-ONG.	Each	1228770
4-5-7 (New)	Supplying, installing, testing and commissioning of 100 kWp ON-GRID Solar PV System / Plant consisting Solar PV Poly Crystalline Panel (335 Wp X 300 Nos.) and Solar ON-GRID Inverter of similar capacity (THD<3%) with interconnecting wires / cables up to solar ON GRID inverter, proper base plate, canopy box to house Inverter and necessary accessories i.e. ACDB/ DCDB , MCB etc. wiring up to solar Inverter in casing and capping, display board, sign board, two distinct earthing, lightning arrester, liaisoning charges, remote monitoring system with maintaining card / chip for 5 years including net charges for RMS System, complete up to net meter Installation and export to the grid with 5 year ON-SITE warranty and fully comprehensive maintenance contract as per Specification no. ESD-RT-ONG.	Each	4834619
Note	<p>1) Other than above mentioned capacity, for installation of on-grid solar PV plant, add Rs. 58720/- per kWp for item no.4-5-1 to 4-5-6, as required.</p> <p>2) Only 25 meter length of aluminium conductor armoured cable of appropriate size is considered for item no. 4-5-1 to 4-5-7.</p> <p>3) Cost of mounting structure, PV cleaning unit, RMS system, additional wiring, MSEDCL related fees, additional load charges, meter and testing charges, additional wiring is not included in item.</p> <p>4) Rates of item no. 4-5-1 to 4-5-7 are applicable up to 200 kWp. For above 200 kWp Non CSR item shall be approved by concern Superintending Engineer P.W. Regional Circle (Electrical).</p>		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>4.6 Heat Pump (ESD-HP)</u>			
4-6-1 (New)	Supplying, installing, testing and commissioning of Monoblock Heat pump, having dimension: 1660 x 520 (mm), Input power: 460 W, 230 V, 50 Hz, Output power: 1750 W having hot water temperature range 35°C to 75°C and ambient temperature range for max. efficiency 7°C to 43°C, with glass lining hot water tank of 180 ltr. and min. 87 kg at rated pressure 10 bar with two emergency heating elements operated on three operational mode: Efficiency mode, Hybrid turbo mode and Standard mode with Adaptive Energy System (AES), LED display with necessary accessories complete with 5 years ON-SITE warranty.	Each	168222
4-6-2 (New)	Supplying, installing, testing and commissioning of Monoblock Heat pump, having dimension: 1012 x 713 x 1700 (mm), Input power: 875 W, 400 V, 3 Ph, 50 Hz, Output power: 3680 W having hot water temperature range 35°C to 75°C and ambient temperature range for max. efficiency 7°C to 43°C, with glass lining hot water tank of 455 ltr. and min. 194 Kg at rated pressure 10 bar with two emergency heating elements operated on three operational mode: Efficiency mode, Hybrid turbo mode and Standard mode with Adaptive Energy System (AES), LED display with necessary accessories complete with 5 years ON-SITE warranty.	Each	272473
4-6-3 (New)	Supplying, installing, testing and commissioning of Monoblock Heat pump, having dimension: 995 x 785 x 1700 (mm), Input power: 2.22 kW, 400 V, 3 Ph, 50 Hz, Output power: 8 kW having hot water temperature range 35°C to 75°C and ambient temperature range for max. efficiency 7°C to 43°C, with glass lining hot water tank of 455 ltr. and min. 220 Kg at rated pressure 10 bar with two emergency heating elements operated on three operational mode: Efficiency mode, Hybrid turbo mode and Standard mode with Adaptive Energy System (AES), LED display with necessary accessories complete with 5 years ON-SITE warranty.	Each	401845
4-6-4 (New)	Supplying, installing, testing and commissioning of Commercial Heat pump, having dimension: 1020 x 846 x 1840 (mm), Input power: 6.02 kW, 400 V, 3 Ph, 50 Hz, Output power: 19.8 kW having hot water temperature range 35°C to 52°C and ambient temperature range for max. efficiency 7°C to 43°C, centrally controlled operation, operational noise level: 65 dBA with necessary accessories complete with 5 years ON-SITE warranty.	Each	540178
4-6-5 (New)	Supplying, installing, testing and commissioning of Commercial Heat pump, having dimension : 1020 x 846 x 1840 (mm) max., Input power: 10.3 kW, 400 V, 3 Ph, 50 Hz, Output power: 38 kW having hot water temperature range 35°C to 52°C and ambient temperature range for max. efficiency 7°C to 43°C, with top throw fan, tube type heat exchanger 5 nos. inbuilt temperature sensor and two pressure sensors, centrally controlled operation, operational noise level: 65 dBA with provision for controlling auxiliary heater with necessary accessories complete with 5 years ON-SITE warranty.	Each	684400
4-6-6 (New)	Supplying, installation and testing and commissioning of storage type Mild Steel mixing water tank of capacity 3000 ltrs. tested to a pressure of 8 kg/cm ² insulated with 50 mm thick rock wool with wire mesh around and clad with 26 SWG aluminium of dish end type with working pressure of 6 kg/cm ² , fabricated with 6 mm thick MS plate and dished ends with 8 mm thick plates complete with man hole cover, inner side of the tank coated with FRP coating of 3 mm thickness withstand temperature of 90°C provided with collars of 2" BSP for provision to install 6 numbers of electrical heating coils if required with thermal sensors for automatic operation and integrated into the electrical circuits of the circulation pumps and the heat pump with safety valve drain, inlet and outlet nozzle, pressure gauge with all necessary accessories complete.	Each	259129

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
4-6-7 (New)	Supplying, installation and testing and commissioning of storage type Mild Steel mixing water tank of capacity 5000 ltrs. tested to a pressure of 8 kg/cm ² insulated with 50 mm thick rock wool with wire mesh around and clad with 26 SWG aluminium of dish end type with working pressure of 6 kg/cm ² , fabricated with 6 mm thick plate and dished ends with 8 mm thick plates complete with man hole cover, inner side of the tank coated with FRP coating of 3 mm thickness withstand temperature of 90°C provided with collars of 2" BSP for provision to install 6 numbers of electrical heating coils if required with thermal sensors for automatic operation and integrated into the electrical circuits of the circulation pumps and the heat pump with safety valve drain, inlet and outlet nozzle, pressure gauge with all necessary accessories complete.	Each	377305

Note Separate water tank not required for item no. 4-6-1 to 4-6-3

4.7 Electric Vehicle Charger (ESD-EVC)

4-7-1 (New)	Supplying, erecting, testing and commissioning of 10kW, 3 x 3.3 KW AC Electric Vehicle charger (suitable for 2/3/4 wheeler) having minimum IK08/IP 54 Protection suitable for three phase, 415V AC, 50Hz incoming and 3 nos. output as per IEC 60309 industrial sockets having capacity of output current of 16A 240V AC at each socket with 3.5" TFT touch screen for human interface & LED Light for status indication and metering for measurement of consumed energy having metering accuracy +/-1%, one hour battery backup for communication, emergency push stop button and having short circuit, over & under voltage, overload, over temperature, earth leakage protection and enclosure made of minimum 1.5mm duly RAL7035 Coated M.S, Erected on iron/GI frame on provided cement concrete foundation complete with one year on site warranty, confirming to IS 17017 Series as per specification.	Each	48478
4-7-2 (New)	Supply, Installation, Testing and Commissioning 7.2 kW AC Electric Vehicle charger (suitable for 4 wheeler) having minimum IK08 & IP54 protection suitable for single phase, 230V AC, 50Hz, incoming and 1 nos. output having capacity of output current of 32A at 230V with Type two connector as per IEC 62196-2 , Interlocking arrangement & minimum 5 meter charging cable length, 3.5" TFT screen for human interface & LED light for status indication and metering for measurement of consumed energy having metering accuracy +/-1%, one hour battery backup for server communication, emergency push stop button, with user interface by mobile application/QR Code/RIFD Card/Password Login and having short circuit, over & under voltage, overload, earth leakage, Over temperature, surge protection and enclosure made of minimum 1.5mm duly RAL7035 coated M.S, erected on iron/GI frame on provided cement concrete foundation complete with one year on site warranty, confirming to IS 17017 Series as per specification	Each	57499

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
4-7-3 (New)	Supplying, erecting, testing and commissioning of 15 KW DC Electric Vehicle Charger (suitable for 4 wheeler)having minimum IK08 & IP54 protection suitable for three phase 415V AC 50Hz incoming supply and 1 no. output charger interface GB/T with 40-100VDC supply and 15 kW capacity , interlocking arrangement with minimum 5 meter charging cable length , 7" LCD touch screen for human interface & LED light for status indication, metering for measurement of consumed energy having metering accuracy +/-1%, One hour battery backup for communication, emergency push stop button. User interface by mobile application/QR Code/RIFD Card/Password Login with payment options and having short circuit, over & under voltage, surge protection, earth leakage protection and enclosure made of minimum 1.5mm duly RAL7035 coated M.S, erected on iron/GI frame on provided cement concrete foundation complete with one year on site warranty, confirming to IS 17017 Series as per specification	Each	254231
4-7-4 (New)	Supplying, erecting, testing and commissioning of 30 kW DC Electric Vehicle Charger (suitable for 4 wheeler) having minimum IK08 & IP 54 Protection suitable for three phase, 415V AC, 50Hz incoming supply and 1 nos 30kW output charger interface CCS2 with 200-500VDC supply , Interlocking arrangement with minimum 4 meter charging cable length, 5" LCD Touch Screen for human interface & LED Light for status indication and metering for measurement of consumed energy having metering accuracy +/-1%, One hour battery backup for communication, emergency push stop button. User interface by mobile application/QR Code/RIFD Card/Password Login with payment options and having short circuit, over & under voltage, input phase reversal, surge protection, earth leakage protection and enclosure made of minimum 1.5mm duly RAL7035 coated M.S, erected on iron/GI frame on provided cement concrete foundation complete with one year on site warranty, confirming to IS 17017 Series as per specification	Each	748763
4-7-5 (New)	Providing yearly subscription of payment gateway option for AC/DC EV Charger CMS (Charger management software) system for billing and payment gateway along with mobile application /android/IOS base app to facilitate charging, CMS should have ISO/IEC 27001:2003 certification.	Job	2029

4.8 Miscellaneous

4-8-1	Supplying and erecting quartz electronic time switch having 24 hour dial to work on 250 V 50 cycle AC having built in rechargeable nickel cadmium batteries to run the time switch on failure of supply having switch contact rating up to 16A to use independently or in conjunction with contactor.	Each	2386
4-8-2	Supplying and erecting two pole power contactor 230 V, 12 A for time switch complete erected on provided wooden block/ box, with necessary materials.	Each	982
4-8-3	Supplying and erecting two pole power contactor 230 V, 32 A for time switch complete erected on provided wooden block/ box, with necessary materials.	Each	2366
4-8-4	Supplying and erecting four pole power contactor 430 V, 16 A for time switch complete erected on provided wooden block/ box, with necessary materials.	Each	1330
4-8-5	Supplying and erecting four pole power contactor 430 V, 40 A for time switch complete erected on provided wooden block/ box, with necessary materials.	Each	2513

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
4-8-6	Supplying and erecting programmable digital almanac timer microcontroller based with real time clock to operate on derived switching “ON” and switching “OFF” street light as per daily sunset and sunrise respectively automatically having 4 digit LED continuous time display, relay output 230 V / 10A with 10 hrs. battery backup and manual over drive facility capable to drive different capacity contactors timer erected in provided M.S. box.	Each	6205
4-8-7	Providing and fixing high-density polyethylene (HDPE) container one piece moulded triple layer water tank made out of high density polyethylene and built corrugated inclusive of delivery up to destination hoisting and fixing of accessories such as inlet, outlet overflow pipe inclusive of all tanks capacity up to 20000 litres.	per litre	10
4-8-8 (New)	Supplying and installation of Solar PV Module cleaning unit consisting of nozzles spray, necessary pipes, valves, post, electronic panel board concealed with weather proof cabinet, spreading water periodically for removal of dust, related motor pump, controller, timer and nozzles set suitable for covering 5 KW Solar PV Module. (Approx. 35 Sq. Mtr. PV Module area).	Each	22541
Note	For item no. 4-8-8 for additional kW capacity, add Rs. 4000/- for every 5kW.		

4.9 Dismantling

4-9-1	Dismantling the existing solar water heating system up to 500 LPD capacity along with piping etc. from roof top and bringing down to ground.	Each	2143
-------	--	------	------

Chapter: 5
Switchgear (SW)

5.1 Change Over Switch, SDF	(SW-CoS)
5.2 Mini Feeder Pillar/Street Light Control Panel	(SW-MFP)
5.3 LT - MCBs/MCB Change Over Switch	(SW-MCB)
5.4 LT - MCBDBs	(SW-MCBDB)
5.5 LT - MCCBs	(SW-MCCB)
5.6 RCCB / RCBO	(SW-RCCB)
5.7 MCCB Panel Boards and Accessories	(SW-SWR-MCCBPB)
5.8 LT - Air Circuit Breakers	(SW-ACB)
5.9 HT SF6 Load Break Switch /VCB/RMU	(SW-HTS)
5.10 Accessories	(SW-AS)
5.11 Accessories for MCCBs	
5.12 Dismantling	

Chapter: 5 SWITCHGEARS (SW)

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>5.1 Change Over Switch, SDF (SW-SWR)</u>			
5-1-1 (New)	Supplying & erecting four pole ON LOAD change over switch, 415V, 32A , open execution having staggered termination, phase barrier, shroud termination and terminal cover along with auxiliary contacts and ready to upgrade with fuse protection kit, rotary handle, operational current category AC23A complying to IS/IEC 60947-3 Part-1/3 .	Each	2948
5-1-2	Supplying & erecting four pole ON LOAD change over switch, 415V, 40A , open execution having staggered termination, phase barrier, shroud termination and terminal cover along with auxiliary contacts and ready to upgrade with fuse protection kit, rotary handle, operational current category AC23A complying to IS/IEC 60947-3 Part-1/3.	Each	3072
5-1-3	Supplying & erecting four pole ON LOAD change over switch, 415V, 63A , open execution having staggered termination, phase barrier, shroud termination and terminal cover along with auxiliary contacts and ready to upgrade with fuse protection kit, rotary handle, operational current category AC23A complying to IS/IEC 60947-3 Part-1/3.	Each	4334
5-1-4	Supplying & erecting four pole ON LOAD change over switch, 415V, 100A , open execution having staggered termination, phase barrier, shroud termination and terminal cover along with auxiliary contacts and ready to upgrade with fuse protection kit, rotary handle, operational current category AC23A complying to IS/IEC 60947-3 Part-1/3.	Each	4775
5-1-5	Supplying & erecting four pole ON LOAD change over switch, 415V, 160A , open execution having staggered termination, phase barrier, shroud termination and terminal cover along with auxiliary contacts and ready to upgrade with fuse protection kit, rotary handle, operational current category AC23A complying to IS/IEC 60947-3 Part-1/3.	Each	8296
5-1-6	Supplying & erecting four pole ON LOAD change over switch, 415V, 200A , open execution having staggered termination, phase barrier, shroud termination and terminal cover along with auxiliary contacts and ready to upgrade with fuse protection kit, operational current category AC23A complying to IS/IEC 60947-3 Part-1/3.	Each	10548
5-1-7	Supplying & erecting four pole ON LOAD change over switch, 415V, 315-320A , open execution having staggered termination, phase barrier, shroud termination and terminal cover along with auxiliary contacts and ready to upgrade with fuse protection kit, operational current category AC23A complying to IS/IEC 60947-3 Part-1/3.	Each	16260
5-1-8	Supplying & erecting four pole ON LOAD change over switch, 415V, 400A , open execution having staggered termination, phase barrier, shroud termination and terminal cover along with auxiliary contacts and ready to upgrade with fuse protection kit, rotary handle, operational current category AC23A complying to IS/IEC 60947-3 Part-1/3.	Each	23702
5-1-9	Supplying and erecting two pole metal clad changeover switch 240 V, 32 A erected on angle iron/GI frame and duly connected with suitable wire leads complete	Each	1501

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
5-1-10	Supplying and erecting ON LOAD four pole automatic transfer switch, 415V, 100-125A, 50 Hz with enclosure, flexibility of neutral connection, line and load reversibility, changeover with phase barriers, source separator, terminal covers along with staggered termination for cable connection and ATS controller with provision of time delay protection of OV, UV, phase sequence changing, single phasing and event logging, connected with provided leads complete complying to IS/IEC 60947-3 Part-1/6 .	Each	37171
5-1-11	Supplying and erecting ON LOAD four pole automatic transfer switch, 415V, 160A, 50 Hz with enclosure, flexibility of neutral connection, line and load reversibility, changeover with phase barriers, source separator, terminal covers along with staggered termination for cable connection and ATS controller with provision of time delay protection of OV, UV, phase sequence changing, single phasing and event logging, connected with provided leads complete complying to IS/IEC 60947-3 Part-1/6 .	Each	48431
5-1-12	Supplying and erecting ON LOAD four pole automatic transfer switch, 415V, 200A, 50 Hz with enclosure, flexibility of neutral connection, line and load reversibility, changeover with phase barriers, source separator, terminal covers along with staggered termination for cable connection and ATS controller with provision of time delay protection of OV, UV, phase sequence changing, single phasing and event logging, connected with provided leads complete complying to IS/IEC 60947-3 Part-1/6 .	Each	61155
5-1-13	Supplying and erecting ON LOAD four pole automatic transfer switch, 415V, 315A, 50 Hz with enclosure, flexibility of neutral connection, line and load reversibility, changeover with phase barriers, source separator, terminal covers along with staggered termination for cable connection and ATS controller with provision of time delay protection of OV, UV, phase sequence changing, single phasing and event logging, connected with provided leads complete complying to IS/IEC 60947-3 Part-1/6 .	Each	69262
5-1-14	Supplying and erecting ON LOAD four pole automatic transfer switch, 415V, 400A, 50 Hz with enclosure, flexibility of neutral connection, line and load reversibility, changeover with phase barriers, source separator, terminal covers along with staggered termination for cable connection and ATS controller with provision of time delay protection of OV, UV, phase sequence changing, single phasing and event logging, connected with provided leads complete complying to IS/IEC 60947-3 Part-1/6 .	Each	84076
5-1-15 (New)	Supplying and erecting switch disconnecter fuse (SDF) switch 415V, 25/32A, open execution, triple pole and neutral link AC23 A rated with terminal shrouds on both sides and phase barriers along with telescopic shaft for depth adjustments and door interlock and padlock complying to IS/IEC 60947-3 Part-1/3 HRC - DIN type fuse, insulation voltage 1000 V for enclosing in panel with rotary handle for ON / OFF operation (without HRC fuse).	Each	1843
5-1-16 (New)	Supplying and erecting switch disconnecter fuse (SDF) switch 415V, 40A, open execution, triple pole and neutral link AC23 A rated with terminal shrouds on both sides and phase barriers along with telescopic shaft for depth adjustments and door interlock and padlock complying to IS/IEC 60947-3 Part-1/3 HRC - DIN type fuse, insulation voltage 1000 V for enclosing in panel with rotary handle for ON / OFF operation (without HRC fuse).	Each	2571

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
5-1-17 (New)	Supplying and erecting switch disconnecter fuse (SDF) switch 415V up to 63A, open execution, four pole AC23 A rated with terminal shrouds on both sides and phase barriers along with telescopic shaft for depth adjustments and door interlock and padlock complying to IS/IEC 60947-3 Part-1/3 HRC - DIN type fuse, insulation voltage 1000 V for enclosing in panel with rotary handle for ON / OFF operation (without HRC fuse)	Each	2757
5-1-18 (New)	Supplying and erecting switch disconnecter fuse (SDF) switch 415V, 100A, open execution, four pole AC23 A rated with terminal shrouds on both sides and phase barriers along with telescopic shaft for depth adjustments and door interlock and padlock complying to IS/IEC 60947-3 Part-1/3 HRC - DIN type fuse, insulation voltage 1000 V for enclosing in panel with rotary handle for ON / OFF operation (without HRC fuse)	Each	4635
5-1-19 (New)	Supplying and erecting switch disconnecter fuse (SDF) switch 415V, 125A, open execution, four pole AC23 A rated with terminal shrouds on both sides and phase barriers along with telescopic shaft for depth adjustments and door interlock and padlock complying to IS/IEC 60947-3 Part-1/3 HRC - DIN type fuse, insulation voltage 1000 V for enclosing in panel with rotary handle for ON / OFF operation (without HRC fuse)	Each	7470
5-1-20 (New)	Supplying and erecting switch disconnecter fuse (SDF) switch 415V, 160A, open execution, four pole AC23 A rated with terminal shrouds on both sides and phase barriers along with telescopic shaft for depth adjustments and door interlock and padlock complying to IS/IEC 60947-3 Part-1/3 HRC - DIN type fuse, insulation voltage 1000 V for enclosing in panel with rotary handle for ON / OFF operation (without HRC fuse)	Each	8713
5-1-21 (New)	Supplying and erecting switch disconnecter fuse (SDF) switch 415V, 200A, open execution, four pole AC23 A rated with terminal shrouds on both sides and phase barriers along with telescopic shaft for depth adjustments and door interlock and padlock complying to IS/IEC 60947-3 Part-1/3 HRC - DIN type fuse, insulation voltage 1000 V for enclosing in panel with rotary handle for ON / OFF operation (without HRC fuse)	Each	10603
5-1-22 (New)	Supplying and erecting switch disconnecter fuse (SDF) switch 415V, 250A, open execution, four pole AC23 A rated with terminal shrouds on both sides and phase barriers along with telescopic shaft for depth adjustments and door interlock and padlock complying to IS/IEC 60947-3 Part-1/3 HRC - DIN type fuse, insulation voltage 1000 V for enclosing in panel with rotary handle for ON / OFF operation (without HRC fuse)	Each	12450
5-1-23 (New)	Supplying and erecting switch disconnecter fuse (SDF) switch 415V, 300-320A, open execution, four pole and neutral link AC23 A rated with terminal shrouds on both sides and phase barriers along with telescopic shaft for depth adjustments and door interlock and padlock complying to IS/IEC 60947-3 Part-1/3 HRC - DIN type fuse, insulation voltage 1000 V for enclosing in panel with rotary handle for ON / OFF operation (without HRC fuse).	Each	14551
5-1-24 (New)	Supplying and erecting switch disconnecter fuse (SDF) switch 415V, 400A, open execution, four pole AC23 A rated with terminal shrouds on both sides and phase barriers along with telescopic shaft for depth adjustments and door interlock and padlock complying to IS/IEC 60947-3 Part-1/3 HRC - DIN type fuse, insulation voltage 1000 V for enclosing in panel with rotary handle for ON / OFF operation (without HRC fuse).	Each	15698

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
5-1-25 (New)	Supplying and erecting switch disconnecter fuse (SDF) switch 415V, 630A, open execution, four pole AC23 A rated with terminal shrouds on both sides and phase barriers along with telescopic shaft for depth adjustments and door interlock and padlock complying to IS/IEC 60947-3 Part-1/3 HRC - DIN type fuse, insulation voltage 1000 V for enclosing in panel with rotary handle for ON / OFF operation (without HRC fuse).	Each	25353
5-1-26 (New)	Supplying and erecting switch disconnecter fuse (SDF) switch 415V, 800A, open execution, four pole AC23 A rated with terminal shrouds on both sides and phase barriers along with telescopic shaft for depth adjustments and door interlock and padlock complying to IS/IEC 60947-3 Part-1/3 HRC - DIN type fuse, insulation voltage 1000 V for enclosing in panel with rotary handle for ON / OFF operation (without HRC fuse).	Each	28648
5-1-27 (New)	Supplying and erecting switch disconnecter fuse (SDF) 415V, 25/32A, with enclosure, triple pole and neutral link AC23 A rated with terminal shrouds on both sides and phase barriers along with telescopic shaft for depth adjustments and door interlock and padlock complying to IS/IEC 60947-3 Part-1/3 HRC - DIN type fuse switch , insulation voltage 1000 V, with rotary handle for ON / OFF operation (without HRC fuse)	Each	3573
5-1-28 (New)	Supplying and erecting switch disconnecter fuse (SDF) 415V, 40A, with enclosure, triple pole and neutral link AC23 A rated with terminal shrouds on both sides and phase barriers along with telescopic shaft for depth adjustments and door interlock and padlock complying to IS/IEC 60947-3 Part-1/3 HRC - DIN type fuse switch, insulation voltage 1000 V with rotary handle for ON / OFF operation (without HRC fuse)	Each	3854
5-1-29 (New)	Supplying and erecting switch disconnecter fuse (SDF) 415V, 63A, with enclosure, four pole AC23 A rated with terminal shrouds on both sides and phase barriers along with telescopic shaft for depth adjustments and door interlock and padlock complying to IS/IEC 60947-3 Part-1/3 HRC - DIN type fuse switch, insulation voltage 1000 V , with rotary handle for ON / OFF operation(without HRC fuse)	Each	5123
5-1-30 (New)	Supplying and erecting switch disconnecter fuse (SDF) 415V, 100A, with enclosure, four pole AC23 A rated with terminal shrouds on both sides and phase barriers along with telescopic shaft for depth adjustments and door interlock and padlock complying to IS/IEC 60947-3 Part-1/3 HRC - DIN type fuse switch, insulation voltage 1000 V , with rotary handle for ON / OFF operation (without HRC fuse)	Each	7376
5-1-31 (New)	Supplying and erecting switch disconnecter fuse (SDF) 415V, 125A, with enclosure, four pole AC23 A rated with terminal shrouds on both sides and phase barriers along with telescopic shaft for depth adjustments and door interlock and padlock complying to IS/IEC 60947-3 Part-1/3 HRC - DIN type fuse switch, insulation voltage 1000 V , with rotary handle for ON / OFF operation (without HRC fuse)	Each	8179
5-1-32 (New)	Supplying and erecting switch disconnecter fuse (SDF) 415V, 160A, with enclosure, four pole AC23 A rated with terminal shrouds on both sides and phase barriers along with telescopic shaft for depth adjustments and door interlock and padlock complying to IS/IEC 60947-3 Part-1/3 HRC - DIN type fuse switch, insulation voltage 1000 V , with rotary handle for ON / OFF operation(without HRC fuse)	Each	10688

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
5-1-33 (New)	Supplying and erecting switch disconnecter fuse (SDF) 415V, 200A, with enclosure, four pole AC23 A rated with terminal shrouds on both sides and phase barriers along with telescopic shaft for depth adjustments and door interlock and padlock complying to IS/IEC 60947-3 Part-1/3 HRC - DIN type fuse switch, insulation voltage 1000 V, with rotary handle for ON / OFF operation (without HRC fuse)	Each	13588
5-1-34 (New)	Supplying and erecting switch disconnecter fuse (SDF) 415V, 250A, with enclosure, four pole AC23 A rated with terminal shrouds on both sides and phase barriers along with telescopic shaft for depth adjustments and door interlock and padlock complying to IS/IEC 60947-3 Part-1/3 HRC - DIN type fuse switch, insulation voltage 1000 V, with rotary handle for ON / OFF operation (without HRC fuse)	Each	15263
5-1-35 (New)	Supplying and erecting switch disconnecter fuse (SDF) 415V, 300-320A, with enclosure, four pole and neutral link AC23 A rated with terminal shrouds on both sides and phase barriers along with telescopic shaft for depth adjustments and door interlock and padlock complying to IS/IEC 60947-3 Part-1/3 HRC - DIN type fuse switch, insulation voltage 1000 V, with rotary handle for ON / OFF operation (without HRC fuse)	Each	17949
5-1-36 (New)	Supplying and erecting switch disconnecter fuse (SDF) 415V, 400A, with enclosure, four pole AC23 A rated with terminal shrouds on both sides and phase barriers along with telescopic shaft for depth adjustments and door interlock and padlock complying to IS/IEC 60947-3 Part-1/3 HRC - DIN type fuse switch, insulation voltage 1000 V, with rotary handle for ON / OFF operation (without HRC fuse)	Each	18417
5-1-37 (New)	Supplying and erecting switch disconnecter fuse (SDF) 415V, 630A, with enclosure, four pole AC23 A rated with terminal shrouds on both sides and phase barriers along with telescopic shaft for depth adjustments and door interlock and padlock complying to IS/IEC 60947-3 Part-1/3 HRC - DIN type fuse switch, insulation voltage 1000 V, with rotary handle for ON / OFF operation (without HRC fuse)	Each	27048
5-1-38 (New)	Supplying and erecting switch disconnecter fuse (SDF) 415V, 800A, with enclosure, four pole AC23 A rated with terminal shrouds on both sides and phase barriers along with telescopic shaft for depth adjustments and door interlock and padlock complying to IS/IEC 60947-3 Part-1/3 HRC - DIN type fuse switch insulation voltage 1000 V, with rotary handle for ON / OFF operation (without HRC fuse)	Each	34169

Note 1) Item no 5-1-1 to 5-1-8 are of open execution type to be used in cubical panels. For using the item with enclosure, rates shall be increased by 35 %.

2) For erection of switchgear on existing/provided GI /angle iron frame reduce the over all rate by 5%.

5.2 Mini Feeder Pillar/ Street Light Control Panel (SW-DB)

5-2-1	Supplying and erecting triple pole mini feeder pillar with 500V, 200A FPMCCB as incomer and 2 outgoing circuits with HRC fuse base and cartridge of 100A with aluminium bus bar erected in 14 SWG CRCA sheet box with supporting angles, self locks, gasket having IP54,IK10 protection and slanting top to be erected on provided foundation complete as per specification no. SW-SWR/MFP	Each	36871
-------	---	------	-------

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
5-2-2	Supplying and erecting triple pole mini feeder pillar with 500V, 300A FPMCCB as incomer and 3 outgoing circuits with HRC fuse base and cartridge of 100A with aluminium bus bar erected in 14 SWG CRCA sheet box with supporting angles, self locks, gasket having IP54,IK10 protection and slanting top to be erected on provided foundation as per specification no. SW-SWR/MFP	Each	55346
5-2-3	Supplying & erecting single phase, 240V, street light control panel up to the max load of 6kW, SPN MCB 40A , powder coated CRCA 14 SWG sheet, outdoor type, having IP54,IK10 protection, suitable rating contactor, 24 hrs. astronomical time switch with minimum 5 years battery back up , auto/manual selector switch, ON/OFF push buttons, indicator lamps, control wiring, metering device, etc. for automatic operation, with overcurrent, short circuit, earth fault protection on provided iron frame/ CC foundation.	Each	19352
5-2-4	Supplying & erecting single phase, 240V, street light control panel up to the max load of 12kW, SPN MCB 63A , powder coated CRCA 14 SWG sheet, outdoor type, having IP54,IK10 protection, suitable rating contactor, 24 hrs. astronomical time switch with minimum 5 years battery back up , auto/manual selector switch, ON/OFF push buttons, indicator lamps, control wiring, metering device, etc. for automatic operation & overcurrent, short circuit, earth fault protection on provided iron frame / CC foundation.	Each	24399
5-2-5	Supplying & erecting three phase, 415V, street light control panel up to the max load of 6kW, TPN MCB 40A , powder coated CRCA 14 SWG sheet, outdoor type, having IP54,IK10 protection, suitable rating contactor, 24 hrs. astronomical time switch with minimum 5 years battery back up , auto/manual selector switch, ON/OFF push buttons, indicator lamps, control wiring, metering device, etc. for automatic operation, with overcurrent, short circuit, earth fault protection on provided iron frame / CC foundation.	Each	22739
5-2-6	Supplying & erecting three phase, 415V, street light control panel up to the max load of 12kW, TPN MCB 63A , powder coated CRCA 14 SWG sheet, outdoor type, having IP54,IK10 protection, suitable rating contactor, 24 hrs. astronomical time switch with minimum 5 years battery back up , auto/manual selector switch, ON/OFF push buttons, indicator lamps, control wiring, metering device, etc. for automatic operation, with overcurrent, short circuit, earth fault protection on provided iron frame / CC foundation.	Each	31461
5-2-7	Supplying & erecting street light control panel outdoor type, for single phase 2 wire system having in built astronomical adjustable programmable timer with minimum 5 years battery back up , having IP54,IK10 protection, 2 pole contactor up to 60 A, with maintenance mode to switch ON street lights during time of repairs with energy consumption data recording for analysis and LCD display for energy monitoring with numeric key pad in provided box.	Each	20567
5-2-8	Supplying & erecting street light control panel outdoor type, for three phase 4 wire system having in built astronomical adjustable programmable timer with minimum 5 years battery back up , having IP54,IK10 protection, 4 pole contactor up to 60A, with maintenance mode to switch ON street lights during time of repairs with energy consumption data recording for analysis and LCD display for energy monitoring with numeric key pad in provided box.	Each	36410
Note	Item no 5-2-7, 5-2-8 shall be installed in existing panel with appropriate capacity protecting switchgears		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>5.3 LT - MCBs/ MCB Change Over Switch (SW-MCB)</u>			
5-3-1	Supplying, erecting & marking SPMCB 0.5A to 5A, C-series with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	Each	250
5-3-2	Supplying, erecting & marking SPMCB 6A to 32A, C-series with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	Each	174
5-3-3	Supplying, erecting & marking SPMCB 6A to 32A, B-series with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	Each	173
5-3-4	Supplying, erecting & marking SPMCB 40A to 63A, C-series with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	Each	369
5-3-5	Supplying, erecting & marking SPMCB 40A to 63A, B-series with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	Each	351
5-3-6	Supplying, erecting & marking DPMCB 6A to 32A, C-series with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	Each	535
5-3-7	Supplying, erecting & marking DPMCB 6 A to 32 A, B-series with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	Each	510
5-3-8	Supplying, erecting & marking DPMCB 40A to 63A, C-series with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	Each	713
5-3-9	Supplying, erecting & marking DPMCB 40A to 63A, B-series with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	Each	692
5-3-10	Supplying, erecting & marking TPMCB 6A to 32A , with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	Each	751
5-3-11	Supplying, erecting & marking TPMCB 40A to 63A , with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	Each	992
5-3-12	Supplying, erecting & marking FPMCB 6A to 32A , with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	Each	1059
5-3-13	Supplying, erecting & marking FPMCB 40A to 63A , with rated short - circuit breaking capacity (Icn) 10kA in provided distribution board as per specification no. SW-SWR/MCB	Each	1329
5-3-14	Supplying, erecting and marking double pole isolator only switch version of miniature circuit breaker of 40A with required wiring connections and lugs etc. in provided distribution board.	Each	310

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
5-3-15	Supplying, erecting and marking triple pole isolators only switch version of miniature circuit breaker of 40A with required wiring connections and lugs etc. in provided distribution board.	Each	604
5-3-16	Supplying, erecting and marking triple pole isolators only switch version of miniature circuit breaker of 63A with required wiring connections and lugs etc. in provided distribution board.	Each	679
5-3-17	Supplying, erecting and marking triple pole isolators only switch version of miniature circuit breaker of 100A with required wiring connections and lugs etc. in provided distribution board.	Each	772
5-3-18	Supplying, erecting and marking four pole isolators only switch version of miniature circuit breakers of 40A in provided distribution board.	Each	698
5-3-19	Supplying, erecting and marking four pole isolators only switch version of miniature circuit breakers of 63A in provided distribution board.	Each	734
5-3-20	Supplying, erecting and marking four pole isolators only switch version of miniature circuit breakers of 80/100A in provided distribution board.	Each	916
5-3-21	Supplying, fixing and commissioning MCB type change over switch 2 pole, 25 A with 3 positions (I-O-II) with centre off position as per specification no. SW-SWR / MCBCOS	Each	1123
5-3-22	Supplying, fixing and commissioning MCB type change over switch 2 pole, 40 A with 3 positions (I-O-II) with centre off position as per specification no. SW-SWR/MCBCOS	Each	1629
5-3-23	Supplying, fixing and commissioning MCB type change over switch 2 pole, 63 A with 3 positions (I-O-II) with centre off position as per specification no. SW-SWR / MCBCOS	Each	1867
5-3-24	Supplying, fixing and commissioning MCB type change over switch 4 pole, 25A with 3 positions (I-O-II) with centre off position as per specification no. SW-SWR / MCBCOS	Each	1927
5-3-25	Supplying, fixing and commissioning MCB type change over switch 4 pole, 40A with 3 positions (I-O-II) with centre off position as per specification no. SW-SWR / MCBCOS	Each	2891
5-3-26	Supplying, fixing and commissioning MCB type change over switch 4 pole, 63A with 3 positions (I-O-II) with centre off position as per specification no. SW-SWR / MCBCOS	Each	3255
Note	<p>1) For lighting load 'B' series MCBs are to be provided and for motive / inductive power load 'C' series MCBs are to be provided.</p> <p>2) For heavy duty motors, welding transformers and machines having heavy surge current, MCB of 'D' series shall be provided by increasing 4% on the rates of 'C' series.</p> <p>3) For use of MCBs with inbuilt short circuit indication on each pole, add 4% on the rate.</p>		
<u>5.4 LT - MCBDBs (SW-MCBDB)</u>			
5-4-1	Supplying & erecting triple pole and neutral distribution board (TPNDB), SPMCB of 4 ways/phase (12 poles) , with door, 1.2mm thickness, surface/flush mounted, IP 43 protection on iron/GI frame (horizontal busbar type) as per specification no. SW-SWR/MCBDB	Each	2356

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
5-4-2	Supplying & erecting triple pole and neutral distribution board (TPNDB), SPMCB of 8 ways / phase (24 poles) , with door, 1.2mm thickness surface/flush mounted, IP 43 Protection on iron/GI frame (horizontal busbar type) as per specification no. SW-SWR/MCBDB	Each	3380
5-4-3	Supplying & erecting triple pole and neutral distribution board (TPNDB), SPMCB of 12 ways /phase (36 poles) , with door, 1.2mm thickness surface/flush mounted, IP 43 Protection on iron/GI frame (horizontal busbar type) as per specification no. SW-SWR/MCBDB	Each	4609
5-4-4	Supplying & erecting triple pole and neutral distribution board (TPNDB), SP/TP MCBs total 4 ways /12 Poles , with door, 1.2mm thickness surface/flush mounted, IP 43 Protection on iron/GI frame (vertical busbar type) as per specification no. SW-SWR/MCBDB	Each	4650
5-4-5	Supplying & erecting triple pole and neutral distribution board (TPNDB), SP/TP MCBs total 8 ways /24 poles , with door, 1.2mm thickness surface/flush mounted, IP 43 Protection on iron/GI frame (vertical busbar type) as per specification no. SW-SWR/MCBDB	Each	5696
5-4-6	Supplying & erecting triple pole and neutral distribution board (TPNDB), SP/TP MCBs total 12 ways /36 poles , with door, 1.2mm thickness surface/flush mounted, IP 43 Protection on iron/GI frame (vertical busbar type) as per specification no. SW-SWR/MCBDB	Each	7661
5-4-7	Supplying and erecting single pole and neutral distribution board (SPNDB), with 2 ways for incoming and 2 ways (2 poles) for outgoing SP MCBs , with door, 1.2mm thickness surface / flush mounted, IP 43 Protection on iron / GI frame as per specification no. SW-SWR/MCBDB	Each	1054
5-4-8	Supplying and erecting single pole and neutral distribution board (SPNDB), with 2 ways for incoming and 6 ways (6 poles) for outgoing SP MCBs , with door, 1.2mm thickness surface / flush mounted, IP 43 Protection on iron / GI frame as per specification no. SW-SWR/MCBDB	Each	1244
5-4-9	Supplying and erecting single pole and neutral distribution board (SPNDB), with 2 ways for incoming and 10 ways (10 poles) for outgoing SP MCBs , with door, 1.2mm thickness surface / flush mounted, IP 43 Protection on iron / GI frame as per specification no. SW-SWR/MCBDB	Each	1495
5-4-10	Supplying & erecting CRCA sheet metal enclosures of 1.2mm thickness with 10A, 2 pin plug & earth socket and 10A, 3 pin plug top with 10A single pole MCB having rated short - circuit breaking capacity (Icn) 10kA complete erected on angle iron / GI frame.	Each	800
5-4-11	Supplying & erecting CRCA sheet metal enclosures of 1.2mm thickness with 20A, 2 pin plug & earth socket and 20A, 3 pin plug top with 20A/30A single pole MCB having rated short - circuit breaking capacity (Icn) 10kA complete erected on angle iron/ GI frame.	Each	824
5-4-12	Supplying & erecting CRCA sheet metal enclosures of 1.2mm thickness with 30 A, 3 pin plug & earth socket and 30A, 3 pin plug top with 30A triple pole MCB having rated short - circuit breaking capacity (Icn) 10kA complete erected on angle iron / GI frame.	Each	1816
5-4-13	Supplying & erecting CRCA sheet metal one way enclosures of 1.2mm thickness suitable for DP MCB /TP MCB/FP MCB/RCCB/RCBO complete erected on angle iron/GI frame.	Each	400
5-4-14	Supplying and erecting blanking plate of suitable size on MCBDB.	Each	15

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
5-4-15	Supplying & erecting triple pole and neutral distribution board (TPNDB), 3 pole/ 4 pole MCCB as incomer & outgoing SP MCB (12 poles) or TP MCB of 4 ways (12 poles) , with door, 1.2mm thickness, surface/flush mounted, on iron/GI frame (vertical busbar type) as per specification no. SW-SWR/MCBDB1	Each	6568
5-4-16	Supplying & erecting triple pole and neutral distribution board (TPNDB), 3 pole/4 pole MCCB as incomer & outgoing SP MCB (24 poles) or TP MCB of 8 ways (24 poles) , with door, 1.2mm thickness, surface/flush mounted, on iron/GI frame (vertical busbar type) as per specification no. SW-SWR/MCBDB1	Each	7791
5-4-17	Supplying & erecting triple pole and neutral distribution board (TPNDB), 3 pole/4 pole MCCB as incomer & outgoing SP MCB (36 poles) or TP MCB of 12 ways (36 poles) , with door, 1.2mm thickness, surface/flush mounted, on iron/GI frame (vertical busbar type) as per specification no. SW-SWR/MCBDB1	Each	10240
Note	<p>1) All MCBs shall have rated short-circuit breaking capacity not less than 10kA.</p> <p>2) Reduce rate by 5% if angle iron frame/ GI frame is not required.</p> <p>3) For more than 2 kW load RCCB shall invariably be provided & erected preferably in the same distribution board. (RCCB+MCB) or (RCCB+MCCB etc.). Separate box for RCCB/ELCB is not permissible.</p> <p>4) DBs and allied switchgears must be of same make.</p> <p>5) DBs with IEC 61439 part 1 & 3 and minimum IK 08 rating shall be preferred.</p>		
<u>5.5 LT - MCCBs (SW-MCCB)</u>			
5-5-1	Providing & erecting 3 Pole MCCB, 415 V, 100A , rated short-circuit breaking capacity 25 kA (Ics=100% of Icu) , adjustable thermal (overload) setting and fixed magnetic setting with provided leads, provision for installation of shunt/UV/trip alarm contact. MCCB with phase barriers on both sides, insulation withstand capacity 800V, no line-load bias in provided enclosure/panel as per specification no. SW-SWR/MCCB	Each	5309
5-5-2	Providing & erecting 3 Pole MCCB, 415V, 200A , rated short-circuit breaking capacity 25 kA (Ics=100% of Icu) , adjustable thermal (overload) setting and adjustable magnetic setting with provided leads, provision for installation of shunt/UV/trip alarm contact and MCCB should have phase barriers both sides, with insulation withstand capacity 800V, no line-load bias in provided enclosure/panel as per specification no. SW-SWR/MCCB	Each	10604
5-5-3	Providing & erecting 3 Pole MCCB 415V, 250A , rated short-circuit breaking capacity 36 kA (Ics=100% of Icu) adjustable thermal (overload) setting and adjustable magnetic setting with provided leads, provision for installation of shunt/UV/trip alarm contact and MCCB should have phase barriers both sides, with insulation withstand capacity 800V, no line-load bias in provided enclosure/panel as per specification no. SW-SWR/MCCB	Each	14159
5-5-4	Providing & erecting 3 Pole MCCB 415V, 400A , rated short-circuit breaking capacity 36 kA (Ics=100% of Icu) , adjustable thermal (overload) setting and adjustable magnetic setting with provided leads, provision for installation of shunt/ UV/ trip alarm contact and MCCB should have phase barriers both sides, with insulation withstand capacity 800V, no line-load bias in provided enclosure /panel as per specification no. SW-SWR/MCCB	Each	18563

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
5-5-5	Providing & erecting 3 Pole MCCB 415V, 630A , rated short-circuit breaking capacity 36 kA (Ics=100% of Icu) , adjustable thermal (overload) setting and adjustable magnetic setting with provided leads, provision for installation of shunt/UV/trip alarm contact and MCCB should have phase barriers both sides, with insulation withstand capacity 800V, no line-load bias in provided enclosure/panel as per specification no. SW-SWR/MCCB	Each	25327
5-5-6	Providing & erecting 3 Pole MCCB, 415V, 800A , rated short-circuit breaking capacity 50 kA (Ics=100% of Icu) , adjustable thermal (overload) setting and adjustable magnetic setting with provided leads, provision for installation of shunt/UV/trip alarm contact and MCCB should have phase barriers both sides, with insulation withstand capacity 800V, no line-load bias in provided enclosure/panel as per specification no. SW-SWR/MCCB	Each	37223
Note:-	1)For use of 4 pole MCCBs in place of 3 pole MCCBs add 20% in rate of 3 pole MCCB.		
(New)	2) In case of specialised application, MCCB used at incomer level shall be microprocessor based with LSIG (overload, short circuit, instantaneous, earth fault) inbuilt protection and shall have door mounted display to ensure close door operation; increase the rate by 20%.		
(New)	3)MCCBs which are used as incomer in main panel shall be of four pole only to ensure neutral isolation.		
<u>5.6 RCCB / RCBO (SW-RCCB)</u>			
5-6-1	Supplying, erecting & commissioning 2 pole RCCB 16/25A , electromagnetic type with 30/100/300 mA sensitivity with earth leakage trip indication complete as per specification no. SW-RCCB/RCCB	Each	2088
5-6-2	Supplying, erecting & commissioning 2 pole RCCB 40A , electromagnetic type with 30/100/300 mA sensitivity with earth leakage trip indication complete as per specification no. SW-RCCB/RCCB	Each	2207
5-6-3	Supplying, erecting & commissioning 2 pole RCCB 63A , electromagnetic type with 30/100/300 mA sensitivity with earth leakage trip indication complete as per specification no. SW-RCCB/RCCB	Each	2768
5-6-4	Supplying, erecting & commissioning 4 pole RCCB 16/25A , electromagnetic type with 30/100/300 mA sensitivity with earth leakage trip indication complete as per specification no. SW-RCCB/RCCB	Each	2642
5-6-5	Supplying, erecting & commissioning 4 pole RCCB 40A , electromagnetic type with 30/100/300 mA sensitivity with earth leakage trip indication complete as per specification no. SW-RCCB/RCCB	Each	2668
5-6-6	Supplying, erecting & commissioning 4 pole RCCB 63A , electromagnetic type with 30/100/300 mA sensitivity with earth leakage trip indication complete as per specification no. SW-RCCB/RCCB	Each	2924
5-6-7	Supplying, erecting & commissioning 4 pole RCCB 80A , electromagnetic type with 30/100/300 mA sensitivity with earth leakage trip indication complete as per specification no. SW-RCCB/RCCB	Each	4986
5-6-8	Supplying, erecting & commissioning 4 pole RCCB 100A , electromagnetic type with 30/100/300 mA sensitivity with earth leakage trip indication complete as per specification no. SW-RCCB/RCCB	Each	5433

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
5-6-9	Supplying, fixing and commissioning 2 pole, RCBO 6/10/16/20/25A, with overcurrent, rated short-circuit breaking capacity (10 kA) and earth leakage protection , with 30/100/300 mA sensitivity and short circuit and earth leakage trip indication as per specification no SW-RCCB/RCBO	Each	2986
5-6-10	Supplying, fixing and commissioning 2 pole RCBO 32/40A, with overcurrent, rated short-circuit breaking capacity (10 kA) and earth leakage protection , with 30/100/300 mA sensitivity and short circuit and earth leakage trip indication as per specification no SW-RCCB/RCBO	Each	3182
5-6-11	Supplying, fixing and commissioning 2 pole RCBO 63A, with overcurrent, rated short-circuit breaking capacity (10 kA) and earth leakage protection , with 30/100/300 mA sensitivity and short circuit and earth leakage trip indication as per specification no SW-RCCB/RCBO	Each	4224
5-6-12	Supplying, fixing and commissioning 4 pole RCBO 6/10/16/20/25A, with overcurrent, rated short-circuit breaking capacity (10 kA) and earth leakage protection , with 30/100/300 mA sensitivity and short circuit and earth leakage trip indications per specification no SW-RCCB/RCBO	Each	3978
5-6-13	Supplying, fixing and commissioning 4 pole RCBO 32/40A, with overcurrent, rated short-circuit breaking capacity (10 kA) and earth leakage protection , with 30/100/300 mA sensitivity and short circuit and earth leakage trip indication as per specification no SW-RCCB/RCBO	Each	4047
5-6-14	Supplying, fixing and commissioning 4 pole RCBO 63A, with overcurrent, rated short-circuit breaking capacity (10 kA) and earth leakage protection , with 30/100/300 mA sensitivity and short circuit and earth leakage trip indication as per specification no SW-RCCB/RCBO	Each	4666
5-6-15	Providing, erecting & commissioning 4 pole RCCB 40A, with added immunity to avoid DC pulse tripping with 30/100/300 mA sensitivity complete as per specification no. SW-RCCB/RCCB	Each	5566
5-6-16	Providing, erecting & commissioning 4 pole RCCB 63A, with added immunity to avoid DC pulse tripping with 30/100/300 mA sensitivity complete as per specification no. SW-RCCB/RCCB	Each	6056
5-6-17	Providing, erecting & commissioning 4 pole RCCB 100A, with added immunity to avoid DC pulse tripping with 30/100/300 mA sensitivity complete as per specification no. SW-RCCB/RCCB	Each	7996
Note	<p>1) For human safety RCCB with 30mA sensitivity shall be selected.</p> <p>2) Item no 5-6-15 to 5-6-17 shall be preferably used for Lift and installations with susceptible to harmonic applications to avoid nuisance tripping.</p> <p>3) For use of RCBOs with inbuilt short circuit, earth leakage tripping indication on each pole shall be preferably used.</p>		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<i>5.7 MCCB Panel Boards and Accessories (SW- SWR-MCCBPB)</i>			
5-7-1	Providing & erecting floor/wall mounted MCCB panel board , with door, suitable for four pole incoming 250A, 2 ways four pole outgoing , up to 100 A MCCBs on iron frame, as per specification no SW-SWR/MCCBPB . (Excluding MCCBs)	Each	34781
5-7-2	Providing & erecting floor/wall mounting, MCCB panel board , with door, suitable for four pole incoming 250A, 4 ways four pole outgoing , up to 100 A MCCBs on iron frame, as per specification no SW-SWR/MCCBPB . (Excluding MCCBs)	Each	40309
5-7-3	Providing & erecting floor/wall mounting, MCCB panel board , with door, suitable for four pole incoming 250A, 6 ways four pole outgoing , up to 100 A MCCBs on iron frame, as per specification no SW-SWR/MCCBPB . (Excluding MCCBs)	Each	45392
5-7-4	Providing & erecting floor/wall mounting, MCCB panel board , with door, suitable for four pole incoming 250A, 8 ways Four pole outgoing , up to 100 A MCCBs on iron frame, as per specification no SW-SWR/MCCBPB . (Excluding MCCBs)	Each	50214
5-7-5	Providing & erecting floor/wall mounting, MCCB panel board , with door, suitable for four pole incoming 250A, 12 ways four pole outgoing , up to 100 A MCCBs on iron frame, as per specification no. SW-SWR/MCCBPB . (Excluding MCCBs)	Each	65627
5-7-6	Providing & erecting floor/wall mounting, MCCB panel board , with door, suitable for four pole incoming 400A, 2 ways four pole outgoing , up to 100 A MCCBs on iron frame, as per specification no. SW-SWR/MCCBPB . (Excluding MCCBs)	Each	40551
5-7-7	Providing & erecting floor/wall mounting, MCCB panel board , with door, suitable for four pole incoming 400A, 4 ways four pole outgoing , up to 100 A MCCBs on iron frame, as per specification no. SW-SWR/MCCBPB . (Excluding MCCBs)	Each	47256
5-7-8	Providing & erecting floor/wall mounting, MCCB panel board , with door, suitable for four pole incoming 400 A, 6 ways four pole outgoing , up to 100 A MCCBs on iron frame, as per specification no SW-SWR/MCCBPB . (Excluding MCCBs)	Each	54245
5-7-9	Providing & erecting floor/wall mounting, MCCB panel board , with door, suitable for four pole incoming 400A, 8 ways four pole outgoing , up to 100 A MCCBs on iron frame, as per specification no. SW-SWR/MCCBPB . (Excluding MCCBs)	Each	54206
5-7-10	Providing & erecting floor/wall mounting, MCCB panel board , with door, suitable for four pole incoming 400A, 12 ways four pole outgoing , up to 100 A MCCBs on iron frame, as per specification no. SW-SWR/MCCBPB . (Excluding MCCBs)	Each	80230
5-7-11	Providing & erecting incoming and outgoing cable alleys suitable for MCCB panel board with door, 250A incoming and 2 way outgoing made from CRCA sheet 1.6 mm thick duly powder coated and having vertical insulated partition for shielding between the shared face of cable way and DB complete.	Set	15560
5-7-12	Providing & erecting incoming and outgoing cable alleys suitable for MCCB panel board with door, 250A incoming and 4 way outgoing or 400A incoming and 2 way outgoing made from CRCA sheet 1.6 mm thick duly powder coated and having vertical insulated partition for shielding between the shared face of cableway and DB.	Set	15760

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
5-7-13	Providing & erecting incoming and outgoing cable alleys suitable for MCCB panel board with door, 250A incoming and 6 way outgoing or 400A incoming and 4 way outgoing made from CRCA sheet 1.6 mm thick duly powder coated and having vertical insulated partition for shielding between the shared face of cableway and DB.	Set	16647
5-7-14	Providing & erecting incoming and outgoing cable alleys suitable for MCCB panel board with door, 250A incoming and 8 way outgoing or 400A incoming and 6 way outgoing made from CRCA sheet 1.6 mm thick duly powder coated and having vertical insulated partition for shielding between the shared face of cableway and DB.	Set	18316
5-7-15	Providing & erecting incoming and outgoing cable alleys suitable for MCCB panel board with door, 250A incoming and 12 way outgoing or 400A incoming and 6/8 way outgoing made from CRCA sheet 1.6 mm thick duly powder coated and having vertical insulated partition for shielding between the shared face of cableway and DB.	Set	21664
5-7-16	Providing & erecting incoming and outgoing cable alleys suitable for MCCB panel board with door, 400A incoming and 12 way outgoing made from CRCA sheet 1.6 mm thick duly powder coated and having vertical insulated partition for shielding between the shared face of cableway and DB.	Set	23653
5-7-17	Providing & erecting prewired meter module suitable for MCCB panel board with CT's and emfs VIF meter.	Set	12371
5-7-18	Providing & erecting floor/wall mounting, MCCB panel board with door, 1.2 mm thickness suitable for three pole incoming 250A, 4 ways three pole outgoing up to 100A MCCB on iron frame compliant to IEC 61439, as per specification no SW-SWR/MCCBPB . (Excluding MCCBs)	Each	39172
5-7-19	Providing & erecting floor/wall mounting, MCCB panel board with door, 1.2 mm thickness suitable for three pole incoming 250A, 8 ways three pole outgoing up to 100A MCCB on iron frame compliant to IEC 61439, as per specification no SW-SWR/MCCBPB . (Excluding MCCBs)	Each	47637
5-7-20	Providing & erecting floor/wall mounting, MCCB panel board with door, 1.2 mm thickness suitable for three pole incoming 250A, 12 ways three pole outgoing up to 100A MCCB on iron frame compliant to IEC 61439, as per specification no SW-SWR/MCCBPB . (Excluding MCCBs)	Each	57400
5-7-21	Providing & erecting floor/wall mounting, MCCB panel board with door, 1.2 mm thickness suitable for three pole incoming 400A, 4 ways three pole outgoing up to 100A MCCB on iron frame compliant to IEC 61439, as per specification no SW-SWR/MCCBPB . (Excluding MCCBs)	Each	46544
5-7-22	Providing & erecting floor/wall mounting, MCCB panel board with door, 1.2 mm thickness suitable for three pole incoming 400A, 8 ways three pole outgoing up to 100A MCCB on iron frame compliant to IEC 61439, as per specification no SW-SWR/MCCBPB . (Excluding MCCBs)	Each	52711
5-7-23	Providing & erecting floor/wall mounting, MCCB panel board with door, 1.2 mm thickness suitable for three pole incoming 400A, 12 ways three pole outgoing up to 100A MCCB on iron frame compliant to IEC 61439, as per specification no SW-SWR/MCCBPB . (Excluding MCCBs)	Each	64001

Note **The MCCB panel board and cable alleys shall be only of same make.**

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<i>5.8 LT - Air Circuit Breakers (SW-ACB)</i>			
5-8-1	Supplying, installing, testing and commissioning air circuit breaker manual fixed type, non-drawout type, 650V, 630A, rated at 50° C without deration, 12kV Impulse, 4 pole (100% Neutral Protection) , 50 kA (Ics=Icu=Icw for 1s), with standard accessories with ready to close, individual fault trip, alarm and trip indications, mechanical and electrical anti pumping, soft/ hard rating plug (including hard rating plug CT) with Micro-processor based LCD display release with LSIG and temperature rise protection & with 4 C/O contacts for On-Off-Trip indication, min. 5 event and trip history on breaker display on provided iron frame as per specification no. SW-SWR/ACB	Each	112637
5-8-2	Supplying, installing, testing and commissioning air circuit breaker manual fixed type, non-drawout type, 650V, 800A, rated at 50° C without deration, 12kV Impulse, 4 pole (100% Neutral Protection) , 50 kA (Ics=Icu=Icw for 1s), with standard accessories with ready to close, individual fault trip, alarm and trip indications, mechanical and electrical anti pumping, soft/ hard rating plug (including hard rating plug CT) with Micro-processor based LCD display release with LSIG and temperature rise protection & with 4 C/O contacts for On-Off-Trip indication, min. 5 event and trip history on breaker display on provided iron frame as per specification no. SW-SWR/ACB	Each	113985
5-8-3	Supplying, installing, testing and commissioning air circuit breaker manual fixed type, non-drawout type, 650V, 1000A rated at 50° C without deration, 12kV Impulse, 4 Pole (100% Neutral Protection) , 50 kA (Ics=Icu=Icw for 1s),with standard accessories with ready to close, individual fault trip, alarm and trip indication, mechanical and electrical anti pumping, soft/ hard rating plug (including hard rating plug CT) with Micro-processor based LCD display release with LSIG and temperature rise protection & with 4 C/O contacts for On-Off-Trip indication, min. 5 event and trip history on breaker display on provided iron frame as per specification no. SW-SWR/ACB	Each	121804
5-8-4	Supplying, installing, testing and commissioning air circuit breaker manual fixed type, non-drawout type, 650V, 1600A rated at 50° C without deration, 12kV Impulse, 4 pole (100% Neutral Protection) , 50 kA, (Ics=Icu=Icw for 1s),with standard accessories with ready to close, individual fault trip, alarm and trip indication, mechanical and electrical anti pumping, soft/ hard rating plug (including hard rating plug CT) with Micro-processor based LCD display release with LSIG and temperature rise protection & with 4 C/O contacts for On-Off-Trip indication, min. 5 event and trip history on breaker display on provided iron frame as per specification no. SW-SWR/ACB	Each	159091
5-8-5	Supplying, installing, testing and commissioning air circuit breaker manual drawout type, 650V, up to 800A rated at 50° C without deration, 12kV Impulse, 4 pole (100% Neutral Protection) , 50 kA (Ics=Icu=Icw for 1s),with standard accessories and with ready to close, individual fault trip, alarm and trip indication, mechanical and electrical anti pumping, soft/hard rating plug (including hard rating plug CT) with Micro-processor based LCD display release with LSIG and temperature rise protection & with 4 C/O contacts for On-Off-Trip indication, min. 5 event and trip history on breaker display on provided iron frame as per specification no. SW-SWR/ACB	Each	138587

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
5-8-6	Supplying, installing, testing and commissioning air circuit breaker manual drawout type, 650V, 1000A rated at 50° C without deration, 12kV Impulse, 4 pole (100% Neutral Protection) 50 kA (Ics=Icu=Icw for 1s),with standard accessories with ready to close indication, individual fault trip indication, indications for alarm and trip, mechanical and electrical anti pumping, soft/hard rating plug (including hard rating plug CT) with Micro-processor based LCD display release with LSIG and temperature rise protection & with 4 C/O contacts for On-Off-Trip indication, min. 5 event and trip history on breaker display on provided iron frame as per specification no. SW-SWR/ACB	Each	138767
5-8-7	Supplying, installing, testing and commissioning air circuit breaker manual drawout type, 650V, 1600A rated at 50° C without deration, 12kV Impulse, 4 pole (100% Neutral Protection) 50 kA, (Ics=Icu=Icw for 1s),with standard accessories with ready to close, individual fault trip, alarm and trip indication, mechanical and electrical anti pumping, soft/hard rating plug (including hard rating plug CT) with Micro-processor based LCD display release with LSIG and temperature rise protection & with 4 C/O contacts for On-Off-Trip indication, min. 5 event and trip history on breaker display on provided iron frame as per specification no. SW-SWR/ACB	Each	183065
5-8-8	Supplying, installing, testing and commissioning air circuit breaker manual drawout type, 650V, 1250A rated at 50° C without deration, 12kV Impulse, 4 pole (100% Neutral Protection) 50 kA (Ics=Icu=Icw for 1s),with standard accessories with ready to close, individual fault trip, alarm and trip indications, mechanical and electrical anti pumping, soft/hard rating plug (including hard rating plug CT) with Micro-processor based LCD display release with LSIG and temperature rise protection & with 4 C/O contacts for On-Off-Trip indication, min. 5 event and trip history on breaker display on provided iron frame as per specification no. SW-SWR/ACB	Each	168448
5-8-9	Supplying, installing, testing and commissioning air circuit breaker manual fixed Non drawout type, 650V, 1250A rated at 50° C without deration, 12kV Impulse, 4 pole (100% Neutral Protection) 50 kA (Ics=Icu=Icw for 1s),with standard accessories with ready to close, individual fault trip, alarm and trip indication, mechanical and electrical anti pumping, soft/hard rating plug (including hard rating plug CT) with Micro-processor based LCD display release with LSIG and temperature rise protection & with 4 C/O contacts for On-Off-Trip indication, min. 5 event and trip history on breaker display on provided iron frame as per specification no. SW-SWR/ACB	Each	139306
Note	For electrical drawout type ACB for item no from 5-8-5 to 5-8-8 increase rates by 15%		
<u>5.9 HT SF6 Load Break Switch /VCB/RMU (SW-HTS)</u>			
5-9-1	Supplying, installation, testing and commissioning extendable/non-extendable indoor type 11 kV, 630A, load break switch , compliant to IEC 62271 -100, 200 and 102, on provided MS channels/trench/foundations per specification no SW-HTS / LBS	Each	131300
5-9-2	Supplying, installation, testing and commissioning extendable/non-extendable indoor type 22 kV, 630A, load break switch , compliant to IEC 62271 -100, 200 and 102, on provided MS channels/trench foundation as per specification no SW-HTS / LBS	Each	240223

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
5-9-3	Supplying, installation, testing and commissioning extendable/non-extendable outdoor type 11 kV 630A, load break isolator switch , compliant to IEC 62271 - 100, 200 and 102, on provided MS channels/trench/foundation as per specification no SW-HTS / LBS	Each	149454
5-9-4	Supplying, installation, testing and commissioning extendable/non-extendable outdoor type 22 kV 630A, load break isolator switch , compliant to IEC 62271 - 100, 200 and 102, on provided MS channels/trench/foundation as per specification no SW-HTS / LBS	Each	258376
5-9-5	Supplying, installation, testing and commissioning 11 kV 400A, oil switch-fuse unit extendable/non-extendable on provided MS channels/trench/foundation as per specification no SW-HTS / LBS	Each	169140
5-9-6	Supplying, installing, testing and commissioning 11 kV 630A, indoor type ring main unit with 1 VCB & 2 LBS with internal arc compliance complete erected on provided CC foundation/MS channels/trench, etc., as per specification no SW-HTS / RMU	Each	344187
5-9-7	Supplying, installing, testing and commissioning 11 kV 630A, indoor type ring main unit with 2 VCB & 2 LBS with internal arc compliance complete erected on provided CC foundation/MS channels/trench, etc., as per specification no SW-HTS / RMU	Each	552596
5-9-8	Supplying, installing, testing and commissioning 11 kV 630A, vacuum circuit breaker with internal arc compliance complete erected on provided CC foundation/MS channels/trench, etc., as per specification no SW-HTS / VCB	Each	547250
5-9-9	Supplying, installing, testing and commissioning 22 kV 630A, vacuum circuit breaker with internal arc compliance complete erected on provided cc foundation/MS channels/trench, etc., as per specification no SW-HTS / VCB	Each	1091274
5-9-10	Supplying, installing, testing and commissioning 11kV HRC Fuse 10A to 40A for load break switch with necessary nut bolts complete.	Each	4857
5-9-11	Supplying, installing, testing and commissioning 11 kV HRC Fuse 63A for load break switch with necessary nut bolts complete.	Each	5528
5-9-12	Supplying, installing, testing and commissioning 22 kV HRC Fuse 10A to 40A for load break switch with necessary nut bolts complete.	Each	7836
5-9-13	Supplying, installing, testing and commissioning 22 kV HRC Fuse 63A for load break switch with necessary nut bolts complete.	Each	10815
5-9-14	Supplying, erecting, testing & commissioning 11kV, 630A, 21kA/3sec, 1 way indoor/outdoor, extensible motorised SCADA compatible RMU, internal arc tested consisting of 1 no. feeder with 1 VCB compliant to IEC 62271 -100, 200 and 102, as per specification no. SW-HTS/RMU SCADA	Each	319292
5-9-15	Supplying, erecting, testing & commissioning 11kV, 630A, 21kA/3sec, 1 way Indoor/outdoor, extensible motorised SCADA compatible RMU, internal arc tested consisting of 1 no. feeder with 1 LBS compliant to IEC 62271 -100, 200 and 102, as per specification no. SW-HTS/RMU SCADA	Each	197950
5-9-16	Supplying, erecting, testing & commissioning 11kV, 630A, 21kA/3sec, 2 way Indoor/outdoor, extensible motorised SCADA compatible RMU, internal arc tested consisting of 1 no. feeder with 1 LBS and 1 no. feeder with 1 VCB compliant to IEC 62271 -100,2 00 and 102, as per specification no. SW-HTS/RMU SCADA	Each	422168

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
5-9-17	Supplying, erecting, testing & commissioning 11 kV, 630A, 21kA/3sec, 3 way outdoor, extensible motorised SCADA compatible RMU, internal arc tested consisting of 2 nos. feeder with 2 LBS and 1 no. feeder with 1 VCB . compliant to IEC 62271 -100, 200 and 102, as per specification no. SW-HTS/RMU SCADA	Each	513954
5-9-18	Supplying, erecting, testing & commissioning 11kV, 630A, 21kA/3sec, 4 way outdoor, extensible motorised SCADA compatible RMU, internal arc tested consisting of 2 nos. feeder with 2 LBS and 2 nos. feeder with 2 VCB compliant to IEC 62271 -100, 200 and 102, as per specification no. SW-HTS/RMU SCADA	Each	740177
5-9-19	Supplying, erecting, testing & commissioning 11kV, 630A, 21kA/3sec, 5 way outdoor, extensible motorised SCADA compatible RMU, internal arc tested consisting of 2 nos. feeder with 2 LBS and 3 nos. feeder with 3 VCB compliant to IEC 62271 -100, 200 and 102, as per specification no. SW-HTS/RMU SCADA	Each	890800
5-9-20	Supplying, erecting, testing & commissioning 11kV, 630A, 21kA/3sec, 6 way outdoor, extensible motorised SCADA compatible RMU, internal arc tested consisting of 2 nos. feeder with 2 LBS and 4 nos. feeder with 4 VCB compliant to IEC 62271 -100, 200 and 102, as per specification no. SW-HTS/RMU SCADA	Each	1115800
5-9-21	Supplying, erecting, testing & commissioning 11kV, 630A, 21kA/3sec, 3 way outdoor, extensible motorised SCADA compatible RMU, internal arc tested consisting of 1 no. feeder with 1 LBS and 2 nos. feeder with 2 VCB . compliant to IEC 62271 -100,200 and 102, as per specification no. SW-HTS/RMU SCADA	Each	598300
5-9-22	Supplying, installing, testing and commissioning SF 6 Insulated 22kV, 630A, 16kA/3sec, 1 way outdoor, extensible motorised SCADA compatible RMU, internal arc tested as per electric supply company specification consisting of 1 no. feeder with 1 VCB compliant to IEC 62271 -100, 200 and 102, as per specification no. SW-HTS/RMU SCADA	Each	377344
5-9-23	Supplying, installing, testing and commissioning SF 6 Insulated 22kV, 630A, 16kA/3sec, 1 way outdoor, extensible motorised SCADA compatible RMU, internal arc tested as per electric supply company specification consisting of 1no. feeder with 1 LBS compliant to IEC 62271 -100, 200 and 102, as per specification no. SW-HTS/RMU SCADA	Each	261259
5-9-24	Supplying, installing, testing and commissioning SF 6 Insulated 22kV, 630A, 16kA/3sec, 2 way outdoor, extensible motorised SCADA compatible RMU, internal arc tested as per electric supply company specification consisting of 1 no. feeder with 1 LBS and 1 no. feeder with 1 VCB compliant to IEC 62271 -100, 200 and 102, as per specification no. SW-HTS/RMU SCADA	Each	622360
5-9-25	Supplying, installing, testing and commissioning SF 6 Insulated 22kV, 630A, 16kA/3sec, 3 way outdoor, extensible motorised SCADA compatible RMU, internal arc tested as per electric supply company specification consisting of 2 nos. feeder with 2 LBS and 1 no. feeder with 1 VCB . compliant to IEC 62271 -100, 200 and 102, as per specification no. SW-HTS/RMU SCADA	Each	766967
5-9-26	Supplying, installing, testing and commissioning SF 6 Insulated 22kV, 630A, 16kA/3sec, 4 way outdoor, extensible motorised SCADA compatible RMU, internal arc tested as per electric supply company specification consisting of 2 nos. feeder with 2 LBS and 2 nos. feeder with 2 VCB compliant to IEC 62271 -100, 200 and 102, as per specification no. SW-HTS/RMU SCADA	Each	1036790

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
5-9-27	Supplying, installing, testing and commissioning SF 6 Insulated 22kV, 630A, 16 kA/3sec, 5 way outdoor, extensible motorised SCADA compatible RMU, internal arc tested as per electric supply company specification consisting of 2 nos. feeder with 2 LBS and 3 nos. feeder with 3 VCB compliant to IEC 62271 - 100, 200 and 102, as per specification no. SW-HTS/RMU SCADA	Each	1353333
5-9-28	Supplying, installing, testing and commissioning SF 6 Insulated 22kV, 630A, 16kA/3sec, 6 way outdoor, extensible motorised SCADA compatible RMU, internal arc tested as per electric supply company specification consisting of 2 nos. feeder with 2 LBS and 4 nos. feeder with 4 VCB compliant to IEC 62271 - 100, 200 and 102, as per specification no. SW-HTS/RMU SCADA	Each	1717358
5-9-29	Supplying, installing, testing and commissioning SF 6 Insulated 22kV, 630A, 16kA/3sec, 3 way outdoor, extensible motorised SCADA compatible RMU, internal arc tested as per electric supply company specification consisting of 1no. feeder with 1 LBS and 2 nos. feeder with 2 VCB compliant to IEC 62271 - 100, 200 and 102, as per specification no. SW-HTS/RMU SCADA	Each	906837

5.10 Accessories (SW-AS)

5-10-1	Supplying and erecting porcelain base iron clad cut out HC type 415V, 16A erected on polished wooden block.	Each	131
5-10-2	Supplying and erecting porcelain base iron clad cut out HC type 415V, 32A erected on polished wooden block.	Each	230
5-10-3	Supplying and erecting porcelain base iron clad cut out HC type 415V, 63A erected on polished wooden block.	Each	381
5-10-4	Supplying and erecting porcelain base iron clad cut out HC type 415V, 100A erected on polished wooden block.	Each	696
5-10-5	Supplying and erecting porcelain base iron clad cut out HC type 415V, 200A erected on polished wooden block.	Each	1259
5-10-6	Supplying and erecting HC pattern porcelain fuse bridges with base & HC type fuse links 240V, 16A erected on polished wooden block.	Each	88
5-10-7	Supplying and erecting HC pattern porcelain fuse bridges with base & HC type fuse links 240V, 32A erected on polished wooden block.	Each	167
5-10-8	Supplying & erecting fuse bridge with base 16A erected on provided switch board complete.	Each	101
5-10-9	Supplying & erecting fuse bridges with base HC type fuse links 240V, 63A erected on polished wooden block.	Each	168
5-10-10	Supplying & erecting fuse bridges with base HC type fuse links 415V, 100A erected on polished wooden block.	Each	667
5-10-11	Supplying & erecting fuse bridges with base HC type fuse links 415V, 200A erected on polished wooden block.	Each	947
5-10-12	Supplying & erecting fuse bridges with base HC type fuse links 415V, 300A erected on polished wooden block.	Each	1186
5-10-13	Supplying and erecting bakelite fuse fitting suitable for HRC bolted type fuse up to 32A without fuse.	Each	94
5-10-14	Supplying and erecting bakelite fuse fitting suitable for HRC bolted type fuse up to 63A without fuse.	Each	141

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
5-10-15	Supplying and erecting bakelite fuse fitting suitable for HRC bolted type fuse up to 100A without fuse.	Each	294
5-10-16	Supplying & erecting HRC fuse cartridge 415V, 32A	Each	101
5-10-17	Supplying & erecting HRC fuse cartridge 415V, 63A	Each	129
5-10-18	Supplying & erecting HRC fuse cartridge 415V, 100A	Each	242
5-10-19	Supplying & erecting HRC fuse cartridge 415V, 200A	Each	295
5-10-20	Supplying & erecting HRC fuse cartridge 415V, 300A	Each	424
5-10-21	Supplying & erecting HRC fuse cartridge 415V, 400A	Each	758
5-10-22	Supplying & erecting 415V, 16A porcelain base neutral link complete erected in provided M.S. box.	Each	79
5-10-23	Supplying & erecting 415V, 32A porcelain base neutral link complete erected in provided M.S. box.	Each	85
5-10-24	Supplying & erecting 415V, 63A porcelain base neutral link complete erected in provided M.S. box.	Each	129
5-10-25	Supplying & erecting 415V, 100A porcelain base neutral link complete erected in provided M.S. box.	Each	207
5-10-26	Supplying & erecting porcelain/epoxy bus bar support complete erected in provided M.S. box for 100A	Each	69
5-10-27	Supplying & erecting porcelain/epoxy bus bar support complete erected in provided M.S. box for 200/300A	Each	97
5-10-28	Supplying & erecting porcelain/epoxy bus bar support complete erected in provided M.S. box for 400A	Each	120
5-10-29	Supplying & erecting 415V, 200A porcelain base neutral link complete erected in provided M.S. box.	Each	383
5-10-30	Supplying and erecting DIN Type HRC Fuse cartridge 500V, 32A (New)	Each	297
5-10-31	Supplying and erecting DIN Type HRC Fuse cartridge 500V, 63A (New)	Each	306
5-10-32	Supplying and erecting DIN Type HRC Fuse cartridge 500V, 100A (New)	Each	319
5-10-33	Supplying and erecting DIN Type HRC Fuse cartridge 500V, 160A (New)	Each	427
5-10-34	Supplying and erecting DIN Type HRC Fuse cartridge 500V, 200A (New)	Each	547
5-10-35	Supplying and erecting DIN Type HRC Fuse cartridge 500V, 250A (New)	Each	715
5-10-36	Supplying and erecting DIN Type HRC Fuse cartridge 500V, 315A (New)	Each	815
5-10-37	Supplying and erecting DIN Type HRC Fuse cartridge 500V, 400A (New)	Each	865
5-10-38	Supplying and erecting DIN Type HRC Fuse cartridge 500V, 630A (New)	Each	1270
5-10-39	Supplying and erecting Fuse Base for DIN type HRC Fuse cartridge 500V, up to 160A (New)	Each	559

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
5-10-40 (New)	Supplying and erecting Fuse Base for DIN type HRC Fuse cartridge 500V, above 160A- 250A	Each	753
5-10-41 (New)	Supplying and erecting Fuse Base for DIN type HRC Fuse cartridge 500V, above 250A- 400A	Each	1069
5-10-42 (New)	Supplying and erecting Fuse Base for DIN type HRC Fuse cartridge 500V, above 400A- 630A	Each	1403
<i>5.11 Accessories for MCCB's</i>			
5-11-1	Supplying and erecting terminal spreaders suitable for 3 pole, up to 100A MCCB (set of 6)	Set	199
5-11-2	Supplying and erecting terminal spreaders suitable for 3 pole, up to 250A MCCB (set of 6)	Set	940
5-11-3	Supplying and erecting terminal spreaders suitable for 3 pole, 300A- 400A MCCB(set of 6)	Set	1658
5-11-4	Supplying and erecting terminal spreaders suitable for 3 pole, 630A MCCB (set of 6)	Set	1866
5-11-5	Supplying and erecting terminal spreaders suitable for 3 pole, up to 800A MCCB (set of 6)	Set	3859
5-11-6	Supplying and erecting terminal spreaders suitable for 4 pole, up to 100A MCCB (Set of 8)	Set	320
5-11-7	Supplying and erecting terminal spreaders suitable for 4 pole, above 100A up to 250A MCCB (Set of 8)	Set	1164
5-11-8	Supplying and erecting terminal spreaders suitable for 4 pole, above 250A up to 400A MCCB (Set of 8)	Set	2376
5-11-9	Supplying and erecting terminal spreaders suitable for 4 pole, above 400A up to 630A MCCB (Set of 8)	Set	2720
5-11-10	Supplying and erecting terminal spreaders suitable for 4 pole, above 630A up to 800A MCCB (Set of 8)	Set	4746
5-11-11	Supplying and erecting earth fault module for MCCB with adjustable earth fault sensitivity selection 10% to 50% of nominal current (In)and adjustable time delay 100/200 millisecond suitable for up to 200A MCCB with inbuilt CTs.	Each	5523
5-11-12	Supplying and erecting earth fault module for MCCB with adjustable earth fault sensitivity selection 10% to 50% of nominal current (In) and adjustable time delay 100/200 millisecond suitable for above 200A up to 400A MCCB with inbuilt CTs.	Each	7445
5-11-13	Supplying and erecting earth fault module for MCCB with adjustable earth fault sensitivity selection 10% to 50% of nominal current (In) and adjustable time delay 100/200 millisecond suitable for above 400A up to 800A MCCB excluding CTs.	Each	5539
5-11-14	Supplying and erecting extended rotary handle for MCCB with adjustable telescopic rod suitable for up to 250A MCCB .	Each	1255
5-11-15 (New)	Supplying and erecting extended rotary handle for MCCB with adjustable telescopic rod suitable for above 250A up to 630A MCCB .	Each	1866
5-11-16	Supplying and erecting extended rotary handle for MCCB with adjustable telescopic rod suitable for above 630A up to 800A MCCB .	Each	2666

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
5-11-17	Supplying and erecting SS enclosure for MCCB suitable for up to 100A MCCB.	Each	984
5-11-18	Supplying and erecting SS enclosure for MCCB suitable for 125A to 200A MCCB.	Each	1626
5-11-19 (New)	Supplying and erecting SS enclosure for MCCB suitable for above 250 A up to 800A MCCB.	Each	6534

5.12 Dismantling

5-12-1	Dismantling the existing switchgears, DB, and bus bar of any size complete with/ without board or angle iron frame	Each	93
5-12-2	Making the site clear of dismantled DB and switchgears by refilling the holes with cement mortar & finishing in an approved manner.	Each	102
5-12-3	Dismantling existing OCB, ACB, LBS, VCB complete from existing panel board in an approved manner.	Each	1384
Note	The rates for item no 5-12-1 to 5-12-3 are for dismantling and handing over to section office inclusive of transportation up to 25 km, between site and section office.		
5-12-4	Dismantling any type of unserviceable feeder pillar, switch gear panel, capacitor panel, metering panel, bus-bar panel, electronic equipment panel, etc. and making the site as required, Approx. size (up to 150 cm x 70 cm x 45 cm) - Small Cupboard	Each	1503
5-12-5	Dismantling any type of unserviceable feeder pillar, switch gear panel, capacitor panel, metering panel, bus-bar panel, electronic equipment panel, etc. and making the site as required, Approx. size (up to 200cm. x 90 cm x 45 cm and above) - Big Cupboard	Each	1911
Note	If item no. 5-12-4 & 5-12-5 are to be used then items 5-12-1 to 5-12-3 of dismantling switchgears shall not be used.		

Chapter : 6
Control Panel (CP)

- 6.1 Sheets
- 6.2 Bus bars (CP-BB)
- 6.3 Measuring Instruments
- 6.4 H.T. Metering
- 6.5 Accessories
- 6.6 Surge Protective Devices (CP-SPD)
- 6.7 Energy Devices (Harmonic Filter, APFC Panel) (CP-ED)
- 6.8 Sandwich Bus Bar Trunking System
- 6.9 Air Insulated Bus Bar Trunking System

Chapter : 6 CONTROL PANEL (CP)

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>6.1 Sheets</u>			
6-1-1	Supplying and erecting metal work in CRCA sheet including Iron work for supports with fabrication of boxes, panel boards, etc. including cutting, bending, drilling, welding, riveting, treated with anti-rust treatment and duly powder coated or painted with one coat of red lead paint and 2 coats of enamel paint complete.	kg	249
6-1-2	Supplying and erecting GI sheet 0.6 mm (24 SWG) having zinc coating of 275 microns with galvanization process compliance to IS 2629:1985 to be used for fabrication of boxes panel boards etc. including cutting, bending, drilling, welding, riveting etc. and painting with one coat of red lead paint and 2 coats of enamel paint.	m ²	1427
6-1-3	Supplying and erecting GI sheet 0.8 mm (22 SWG) having zinc coating of 275 microns with galvanization process compliance to IS 2629:1985 to be used for fabrication of boxes panel boards etc. including cutting, bending, drilling, welding, riveting etc. and painting with one coat of red lead paint and 2 coats of enamel paint.	m ²	1440
6-1-4	Supplying and erecting GI sheet 1 mm (20 SWG) having zinc coating of 275 microns with galvanization process compliance to IS 2629:1985 to be used for fabrication of boxes panel boards etc. including cutting, bending, drilling, welding, riveting etc. and painting with one coat of red lead paint and 2 coats of enamel paint.	m ²	1987
6-1-5	Supplying and erecting GI sheet 1.25 mm (18 SWG) having zinc coating of 350 microns with galvanization process compliance to IS 2629:1985 to be used for fabrication of boxes panel boards etc. including cutting, bending, drilling, welding, riveting etc. and painting with one coat of red lead paint and 2 coats of enamel paint.	m ²	2176
6-1-6	Supplying and erecting GI sheet 1.6 mm (16 SWG) having zinc coating of 350 microns with galvanization process compliance to IS 2629:1985 to be used for fabrication of boxes panel boards etc. including cutting, bending, drilling, welding, riveting etc. and painting with one coat of red lead paint and 2 coats of enamel paint.	m ²	2560
6-1-7	Supplying and erecting acrylic sheet 3 mm thick to be used for covering the CRCA sheet boxes etc. including cutting, drilling, and pasting or fixing with nut bolts/ screws etc. complete.	m ²	1350
6-1-8	Supplying and erecting acrylic sheet 2 mm thick for covering wall entries including cutting, drilling and fixing with nut bolts / screws etc. complete.	m ²	1175
6-1-9	Supplying and erecting hylam sheet/ ebonite sheet 3 mm thick for covering wall entries including cutting, drilling and fixing with nut bolts / screws etc. complete.	m ²	1040
6-1-10	Supplying and erecting hylam sheet/ ebonite 6 mm thick for covering wall entries including cutting, drilling and fixing with nut bolts / screws etc. complete.	m ²	1788
6-1-11	Supplying and erecting plywood 6 mm thick fixed to wall or on provided panel board with necessary materials such as screws, wall fasteners supports, nuts bolts etc. complete.	m ²	492

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
6-1-12	Supplying and erecting plywood 12 mm thick fixed to wall or on provided panel board with necessary materials such as screws, wall fasteners supports, nuts bolts etc. complete.	m ²	795
6-1-13	Supplying and pasting sunmica sheet 1 mm thick on provided plywood of required shade.	m ²	826
6-1-14	Supplying and erecting marine (Waterproof) plywood 18/19 mm thick fixed to wall or on provided panel board with necessary materials such as screws, wall fasteners, supports, nut bolts etc. complete with compliance to IS 720:2010	m ²	1471
6-1-15	Supplying and erecting GI sheet 1.6 mm (16 SWG) caution board of size 200 x 150 mm duly painted with red oxide and enamel paint in Marathi, Hindi and English erected at position for medium voltage (415 Volt) installation with compliance to IS 2551-1982	Each	135
6-1-16	Supplying and erecting GI sheet 1.6mm (16 SWG) caution board of size 250 x 200 mm duly painted with red oxide and enamel paint in Marathi, Hindi and English erected at position for HV/EHV (11000 Volts) installation with compliance to IS 2551-1982	Each	192
6-1-17	Supplying and erecting GI sheet of 1.25mm (18 SWG) size 200 x 150 mm duly painted with red oxide & enamel paint for displaying the department, date of erection of the electrical installation with approved shade complete.	Each	119
6-1-18	Supplying and erecting cupboard for enclosing switchgears or for any other purpose made from selected marine plywood planks 19 mm thick duly varnished/ painted from inside and from outside with brass hinges and locking arrangement with suitable lock with keys in duplicate. Cupboard shall be duly grouted with suitable size of iron work in wall at the bottom. (Size of cupboard shall be specified in the estimate)	m ²	2522
6-1-19	Supplying and erecting iron work, sheet metal work consisting of CRCA sheets, various sections of iron, plates, chequered plates, rods, bars, MS pipes, etc. for panel board or any other purpose with bending, cutting, drilling and welding complete erected at the position with necessary materials duly painted with one coat of red oxide and two coats of enamel paint to match the switchgears or as per directions by the authority.	kg	186
Note:-	1) Quantity of iron/sheet metal work shall be considered and worked out as per steel data table. 2) For Fire retardant plywood increase rate by 25% 3) FR plywood with compliance to IS 5509:2000		
6-1-20	Supplying and erecting self-locking arrangement with keys in duplicate, made of brass of grade 1 compliance to IS 729-1979 duly erected, flush with surface of panel / cupboard	Each	290
6-1-21	Supplying and erecting expanded metal jali enclosure made from GI square mesh 15 SWG having 20/25 mm squares, properly fixed/welded and duly painted with one coat of red oxide and two coats of silver/enamel paint complete. (size of jali or enclosure to be specified in the estimate.)	m ²	207
6-1-22	Supplying and erecting slotted angles, frames etc. for panel board or any other purposes complete with bending, cutting, drilling and welding complete erected at the position with necessary materials duly painted with one coat of red oxide and two coats of enamel paint to match the switchgears or as per directions by the authority	kg	147
	GI sheets in compliance with IS 227.2003		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>6.2 Bus bars (CP-BB)</u>			
6-2-1	Supplying and erecting bus bar chamber triple pole with neutral with four aluminium bars, 500V, 100A having 15mm (Width) X 3 mm (Thickness), with 99.9 % aluminium purity as per E91E Grade & Current Density 0.8 A per sq. mm. compliance to IS 5082 and Enclosure fabricated with 16 SWG CRCA sheet and epoxy paint, with suitable number of ways and with SMC/DMC Insulators and accessories of suitable rating complete as per specification no. CP-BB	m	5891
6-2-2	Supplying and erecting bus bar chamber triple pole with neutral with four aluminium bars, 500V 200A having 25mm (Width) X 5 mm (Thickness) , with 99.9 % aluminium purity as per E91E Grade & Current Density 0.8 A per sq. mm. compliance to IS 5082 and Enclosure fabricated with 16 SWG CRCA sheet and epoxy paint, with suitable number of ways and with SMC/DMC Insulators and accessories of suitable rating complete as per specification no. CP-BB	m	6115
6-2-3	Supplying and erecting bus bar chamber triple pole with neutral with four aluminium bars, 500V 300A having 40mm (Width) X 5 mm (Thickness), with 99.9 % aluminium purity as per E91E Grade & Current Density 0.8 A per sq. mm. compliance to IS 5082 and enclosure fabricated with 16 SWG CRCA sheet and epoxy paint, with suitable number of ways and with SMC/DMC Insulators and accessories of suitable rating complete as per specification no. CP-BB	m	6404
6-2-4	Supplying and erecting bus bar chamber triple pole with neutral with four aluminium bars, 500V 400A having 50mm (Width) X 5 mm (Thickness), with 99.9 % aluminium purity as per E91E Grade & Current Density 0.8 A per sq. mm. compliance to IS 5082 and enclosure fabricated with 16 SWG CRCA sheet and epoxy paint, with suitable number of ways and with SMC/DMC Insulators and accessories of suitable rating complete as per specification no. CP-BB	m	8989
6-2-5	Supplying and erecting bus bar chamber triple pole with neutral with four aluminium bars, 500V 630A having 50mm (Width) X 10 mm (Thickness), with 99.9 % aluminium purity as per E91E Grade & Current Density 0.8 A per sq. mm. compliance to IS 5082 and enclosure fabricated with 16 SWG CRCA sheet and epoxy paint, with suitable number of ways and with SMC/DMC Insulators and accessories of suitable rating complete as per specification no. CP-BB	m	10152
6-2-6	Supplying and erecting bus bar chamber triple pole with neutral with four aluminium bars, 500V 800A having 100mm (Width) X 5 mm (Thickness), with 99.9 % aluminium purity as per E91E Grade & Current Density 0.8 A per sq. mm. compliance to IS 5082 and enclosure fabricated with 16 SWG CRCA sheet and epoxy paint, with suitable number of ways and with SMC/DMC Insulators and accessories of suitable rating complete as per specification no. CP-BB	m	10911
6-2-7	Supplying and erecting bus bar chamber triple pole with neutral with four copper bars, 500V, 100A having 10mm (Width) X 1.6 mm (Thickness), with 99.9 % Copper purity as per E91E Grade & Current Density 1.6 A per sq. mm. compliance to IS 5082 and Enclosure fabricated with 16 SWG CRCA sheet and epoxy paint, with suitable number of ways and with SMC/DMC Insulators and accessories of suitable rating complete as per specification no. CP-BB	m	8810

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
6-2-8	Supplying and erecting bus bar chamber triple pole with neutral with four copper bars, 500V 200A having 20mm (Width) X 2 mm (Thickness), with 99.9 % Copper purity as per E91E Grade & Current Density 1.6 A per sq. mm. compliance to IS 5082 and Enclosure fabricated with 16 SWG CRCA sheet and epoxy paint, with suitable number of ways and with SMC/DMC Insulators and accessories of suitable rating complete as per specification no. CP-BB	m	10376
6-2-9	Supplying & erecting of required size electrolyte copper flexible braided bus patti or bar in bus bar chamber/in panel or any other purpose, suitable for 500 volt with required capacity having thermal conductivity of 400W per meter with composition Pure copper 99.9% & Trillium 0.001 % & Current density 1.8 with fixing arrangement (like lug or bottle type lug) to both the end with high grade polyolefin insulation sleeve complete as per specification no. BCP-BB	kg	1425
Note:-	<p>1) The cross sectional area of copper flexible braided bus or bar shall be designed or considered with 30% more or existing cross sectional area of copper bus patti</p> <p>2) Measurement shall be done on actual weight basis after fabrication but before erection.</p>		
6-2-10	Supplying & erecting of required size electrolyte copper bus patti or bar tin plated in bus bar chamber/in panel or any other purpose, suitable for 500 volt with require capacity having thermal conductivity of 400W per meter with composition Pure copper 99.9% Current density 1.8 with fixing arrangement (like lug or bottle type lug) to both the end with high grade polyolefin insulation sleeve complete as per specification no. BCP-BB	kg	1237
6-2-11	Supplying and erecting of any size electrolyte aluminium patti or bar in bus bar chamber / in panel or any other purpose, 500 V with require capacity 99.9% aluminium purity with E91E Grade as per IS 5082 & Current Density 0.8 A per sq. mm. with fixing arrangement (like lug or bottle type lug) to both the end with high grade polyolefin insulation sleeve complete as per specification no. BCP-BB	kg	691
Note:-	Nut, bolts holding the lugs to bus bar shall be of bimetallic/ brass/ cadmium plated steel.		

6.3 Measuring Instruments

6-3-1	Supplying and erecting static energy meter with 240V 50 Hz. AC supply 5 to 30 A , ISI mark, accuracy class 1.0 with backlit LCD display, (measuring and display kWh, kVAh, V,I,PF, frequency, kW, kVA, six months history of Energy & MD in kW & kVA) with transparent hinge type box complete erected on polished teak wood board duly wired with required size of weather proof PVC wires duly tested by electric supply company.	Each	2955
6-3-2	Supplying and erecting static energy meter with 240V 50 Hz. AC supply 10 to 60 A , ISI mark, accuracy class 1.0 with backlit LCD display, (measuring and display kWh, kVAh, V,I,PF, frequency, kW, kVA, six months history of Energy & MD in kW & kVA) with transparent hinge type box complete erected on polished teak wood board duly wired with required size of weather proof PVC wires duly tested by electric supply company.	Each	2965

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
6-3-3 (New)	Supplying and erecting static energy meter with 3 x 240V 50 Hz. AC supply 10 to 60 A , ISI mark, accuracy class 1.0 with backlit LCD display, (Measuring and display Trivector, V, I, kW, PF, Hz, Last month history of kWh and MD in kW) with special features like TOD, Tamper logging, Optical Communication Port & Display in absence of Power & with transparent hinge type box complete erected on polished teak wood board duly wired with required size of weather proof PVC wires duly tested by electric supply company.	Each	7797
6-3-4 (New)	Supplying and erecting static energy Trivector meter 440 V 50 Hz. 20-100A ISI mark meter AC 3 phase 4 wires LCD/LED display (Measuring and display Trivector, V, I, kW, PF, Hz, Last month history of kWh & MD in kW) with special features like TOD, Tamper logging, Optical Communication Port & Display in absence of Power complete erected on polished teak wood board duly wired with required size of weather proof PVC wires duly tested for class 1.0 accuracy by electric supply company.	Each	8241
6-3-5	Supplying and erecting LT CT multifunction DLMS compliance energy meter of accuracy of class 0.5 , 3x240V,50 Hz with optical & RS 232 port, backlit LCD, measure & display trivector energy, load survey, TOD, tamper detection & logging, power ON /OFF events, instantaneous parameters of rating 1/5 A with display in absence of power complete with zero adjustment & test certificate from manufacturer erected on provided M.S. box and connected to CTs.	Each	10731
6-3-6	Supplying and erecting HT CT multifunction DLMS compliance of accuracy of class 0.5 , 3x63.5V,50 Hz with optical & RS 232 port, backlit LCD, measures kWh, kVAh, V, I, kW , 6 months history of energy , load survey, & displays trivector energy, load survey, TOD, tamper detection & logging, power ON /OFF events, instantaneous parameters of rating 1/5 A with display in absence of power complete with zero adjustment & test certificate from manufacturer erected on provided M.S. box.	Each	12921
6-3-7	Supplying and erecting panel mounting type digital ammeter having three and half digit LED display , external CT operated, calibrated for suitable to operate on 500V, 0 to 1000A having accuracy class of 0.5, AC supply with necessary PVC wire leads and lugs and mounting hardware on provided panel complete with calibration certificate from manufacturer.	Each	2034
6-3-8	Supplying and erecting panel mounting type digital voltmeter having three and half digit LED display , calibrated for 0 to 750V AC suitable to operate on 500V having accuracy class of 0.5 ,AC supply with necessary PVC wire leads and lugs and mounting hardware on provided panel complete with calibration certificate from manufacturer.	Each	1672
6-3-9	Supplying and erecting Intelligent flush mounted panel meter three phase four wire (IPM) input voltage measurement range 50-550 V AC (P-P) 415V, aux. supply 90-300 V AC/DC, flush mounted (96 x 96 mm) meter constant Wh viewing in LCD multifunction meters in auto scroll mode with voltage, current, frequency, power factor kW, kVA, kVAR, kWh, kVAh, kVARh, phase angle, interrupts, THD, complete with RS 485 communication protocol, class 1 accuracy and wiring connections and mounting hardware on provided panels complete with calibration certificate from manufacturer.	Each	8860

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
6-3-10	Supplying and erecting dual source intelligent flush mounted panel meter three phase four wire (IPM) 415V CT/ PT site programmable class I flush mounted (96 x 96 mm) meter with voltage, current, frequency, power factor , ON hrs, kWh, EB and DG set metering with LED display (excluding CT'S) complete with RS 485 communication protocol, class I accuracy and wiring connections and mounting hardware on provided panels complete with calibration certificate from manufacturer.	Each	5318
6-3-11	Supplying and erecting intelligent flush mounted maximum demand controller panel meter three phase four wire 50-550 V Phase to phase aux supply 90-300V AC/DC CT secondary site selectable 1A/5A, class I flush mounted 96 x 96 mm meter, data log 8 MB, 4 real output time of day (TOD) 6 slots available, block / sliding window site selectable with V, A, F, kW, kVA, kVAh, kWh, kVAh, kVAh, PF, run hr, ON hrs, Intr, phase angle, THD, events, neutral current, max demand (with RTC) viewing in LCD multi-function meter with LCD display complete class -I accuracy with RS 485 communication protocol with wiring connections and mounting hardware on provided panels complete with calibration certificate from manufacturer.	Each	25168
6-3-12	Supplying and erecting single phase 10 to 60 A net meter of accuracy class 1.0, 240V, 50 Hz, with backlit LCD display, optical port (measures import kWh, export kWh, net kWh, V, I, kW, 12 months history of energy) with wiring connections and mounting hardware on provided panels complete with calibration certificate from manufacturer.	Each	6038
6-3-13	Supplying and erecting three phase 10 to 60 A net meter DLMS compliance of accuracy class 1.0, 3 x 240V, 50 Hz, with backlit LCD display, optical port and RJ 232 port (measures import kWh, kVAh, export kWh, kVAh, Net kWh, kVAh, V, I, kW, 6 months history of energy) with wiring connections and mounting hardware on provided panels complete with calibration certificate from manufacturer.	Each	11225
6-3-14	Supplying and erecting AC three phase LT CT multifunction net meter DLMS compliance of accuracy class 0.5, 3 x 240V, 50Hz, with backlit LCD display, optical port & RS 232 port (measures import kWh, kVAh, export kWh, kVAh, Net kWh, kVAh, V, I, kW, 6 months history of energy, load survey, TOD, tamper detection & logging, power ON/OFF events, instantaneous parameters of rating 1/5A with display in absence of power) with wiring connections and mounting hardware on provided panels complete with calibration certificate from manufacturer.	Each	14802
6-3-15	Supplying and erecting AC three phase HT CT multifunction net meter DLMS compliance of accuracy class 0.5, 3x 63.5V, 50Hz, with backlit LCD display, optical port & RS 232 port(measures import kWh, kVAh, export kWh, kVAh, net kWh, kVAh, V, I, kW, 6 months history of energy, load survey, TOD, tamper detection & logging, power ON/OFF events, instantaneous parameters of rating 1/5A with display in absence of power) with wiring connections and mounting hardware on provided panels complete with calibration certificate from manufacturer.	Each	24248
6-3-16	Supplying and erecting single phase smart energy meter DLMS compliance with 240V 50 cycles AC supply 5-30 A , ISI mark, accuracy class 1.0 with backlit LCD display, measuring & display kWh, V, I, kW, day, week, month & with communication module configurable for GSM/Wi-Fi, IrDA/Bluetooth, complete provided panel with calibration certificate from manufacturer & duly wired with required size of PVC wires.	Each	10367

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
6-3-17	Supplying and erecting Three phase smart energy meter DLMS compliance with 3x240V 50 cycles AC supply 10-60 A, ISI mark , accuracy class 1.0 with backlit LCD display, measuring & display V, I, kW, kWh, PF, kVA, kVA _r , MD, day, week, month & with communication module configurable for GSM/Wi-Fi, IrDA/Bluetooth, complete provided panel with calibration certificate from manufacturer & duly wired with required size of PVC wires.	Each	19539
6-3-18 (New)	Supplying and erecting AC Single Phase Two wire Energy Meter of Rating 5-32A, Class 1.0 Type Single Module Meter with din rail mounting whole current operated meter to measures and display kWh, V, I, kW, KVA P.F. with RS 485 Communication port . Electrical parameters shall be available on com port with their mapping address open for third party software.	Each	3434
6-3-19 (New)	Supplying and erecting AC Three Phase Four wire Multifunction Energy Meter of Rating 10 - 60A, Class 1.0 with din rail / Panel mounting to measures and display parameters with RS485 Modbus communication port. mounting whole current operated meter to measures and display V, I, kWh, KVAh, KW, KVA, P.F, THD, RS 485 Communication port. Electrical parameters shall be available on com port with their mapping address open for third party software	Each	12074
6-3-20 (New)	Supply installation & Commissioning of IoT System Controller / Gateway for electrical and allied services with Inbuilt GPRS, WIFI, LAN Capabilities for Multifunction Meters, Level Sensors , temperature sensors etc. and able to collect data from communicable device of available protocol on real time basis with following specifications 1) ARM based Controller (1.6 Ghz processor with 1.2 GB RAM with inbuilt 16GB memory 2) Inbuilt 4G/3G/GPRS modem with fallback and suitable antenna to communicate with cloud 3)Data services must be from at least two reliable service providers and system should support automatic switching to 2nd service provider in case of low network without any intervention. System should support changing of service providers without changing SIM cards 4)Gateway must have Modbus, MBUS, Ethernet and DLMS Any other future open-source protocol (that uses RS485 or TCP port) must be provided free of cost for the period of at least 1 year 5) Must have one RS485 and one ethernet port 6) The controller must send data with TLS encryption and the data on controller must be encrypted 7) Operable with 230V AC supply Gateway shall collect maximum 15-20 devices for data collection 8) Software shall support for AI application with critical alarm on mobile app	Each	174820
6-3-21 (New)	Supply & Commissioning of Cloud based IoT system Monitoring Software with Cloud and Internet Subscription for 2 Year for Data Analytics, AI Algorithm, Alerts, Automatic Data storage at local computer, Trends, Dashboard, alerts. Access on mobile through web link, Alerts to mobile with AI Technology Real-time monitoring of all the field devices measurements (Electricity, Water, Gas, Temperature, Pressure, Levels, etc.) in a single location. Sending of events & historical data through SMS (Using GSM Modem) for multiple persons at custom intervals. And configuration of mobile numbers for the same. The Analytical module shall be in built to analyze various events/issues that may be occurring in the electrical network. Must have user customizable dashboards and SLD (without any coding/ scripting). Reporting must be user-configurable and changeable. Multi-site data viewing within same interface without any physical cable connection of sites to monitoring	Each	188477

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
6-3-22 (New)	Supply installation & Commissioning of Input Output card 20 Channel for accessibility of input from potential free contact and same to be used to monitor the status of circuit breaker/Meters/Sensors etc., i.e. On/ Off/Trip Status and shall be able to communicate through RS 485 Port.	Each	15011
6-3-23 (New)	Supply & installation of Enclosure for box IOT Controller / IO / SMPS	Each	4273
6-3-24 (New)	Supply installation & Commissioning of wireless Thermal Sensor that enables the continuous thermal condition monitoring of cables Connections, withdrawable Circuit Breakers Connections and busbar connections. operated from the electromagnetic field generated by the current flowing through the monitored conductor. with Electric access point and able to communicate with using wired/wireless communication protocol.	Each	23860
6-3-25 (New)	Annual web based charges for data storage on cloud for various Devices, Meters, sensors etc. for 2 years	Job	4703
Note:-	<p>1. Provision of CT's shall be made as per individual meters. All meters shall be with calibration certificate.</p> <p>2. Provision of smart energy meters i.e. item no. 6.3.16 and 6.3.17 shall be made according to provisions of Energy Conservation Building Code (ECBC) : 2017.</p> <p>3. item no 6-3-18 to 6-3-25 of IoT system shall be used in the important electrical Installations like Hospitals</p> <p>4. UPS of Appropriate Size shall be used for IoT System Controller.</p>		

6.4 H. T. Metering

6-4-1	Supplying, erecting, testing and commissioning 11KV HT metering cubical (compact / vertical type) approved by MSEDCL / licensee fabricated with 2 mm (14 SWG) M.S. sheets with supporting angle, painted with powder coating / epoxy paint of required shade, copper bus bar size 25 x 6 mm, heavy duty mechanical lock, with counter meter for measuring no of times the opening of meter door, top side cover (CT, PT cover) interlock with meter door, epoxy casted 3 nos. CT having required ratio between 10/5A to 50/5A , VA10 or 15, Class 0.5S, epoxy casted 3 nos. PT having ratio 11000/V3/110/V3 VA 50, Class 0.5 suitable for provided trivector meter, and provision for incoming and outgoing cables complete duly tested by licensee with necessary test certificates and erected on provided plinth/ cc foundation.	Each	155280
6-4-2	Supplying, erecting, testing and commissioning 11KV HT metering cubical (compact / vertical type) approved by MSEDCL / licensee fabricated with 2 mm (14 SWG) M.S. sheets with supporting angle, painted with powder coating / epoxy paint of required shade, copper bus bar size 25 x 6 mm, heavy duty mechanical lock, with counter meter for measuring no of times the opening of meter door, top side cover (CT, PT cover) interlock with meter door, epoxy casted 3 nos. CT having required ratio between 50/5A to 200/5A , VA 10 or 15, Class 0.2S, epoxy casted 3 nos. PT having ratio 11000/V3/110/V3 VA 50, Class 0.2 suitable for provided trivector meter, and provision for incoming and outgoing cables complete duly tested by licensee with necessary test certificates and erected on provided plinth/ cc foundation.	Each	164659

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
6-4-3	Supplying, erecting, testing and commissioning 22KV HT metering cubical (compact type) approved by MSEDCL / licensee fabricated with 2 mm (14 SWG) M.S. sheets with supporting angle, painted with powder coating / epoxy paint of required shade, copper bus bar size 25 x 6 mm, heavy duty mechanical lock, with counter meter for measuring no. of times the opening of meter door, top side cover (CT, PT cover) interlock with meter door, epoxy casted 3 nos. CT having required ratio between 5/5A to 25/5A , VA 10 or 15, Class 0.5S, epoxy casted 3 nos. PT having ratio 22000/V3/110/V3 VA 50, Class 0.5 suitable for provided trivector meter, and provision for incoming and outgoing cables complete duly tested by licensee with necessary test certificates and erected on provided plinth/ cc foundation.	Each	190452
6-4-4	Supplying, erecting, testing and commissioning 22KV HT metering cubical (compact type) approved by MSEDCL / licensee fabricated with 2 mm (14 SWG) M.S. sheets with supporting angle, painted with powder coating / epoxy paint of required shade, copper bus bar size 25 x 6 mm, heavy duty mechanical lock, with counter meter for measuring no. of times the opening of meter door, top side cover (CT, PT cover) interlock with meter door, epoxy casted 3 nos. CT having required ratio between 25/5A to 200/5A , VA 10 or 15, Class 0.2S, epoxy casted 3 nos. PT having ratio 22000/V3/110/V3 VA 50, Class 0.2 suitable for provided trivector meter, and provision for incoming and outgoing cables complete duly tested by licensee with necessary test certificates and erected on provided plinth/ cc foundation.	Each	208037
6-4-5 (New)	Supplying, erecting, testing and commissioning 33KV HT metering cubical (compact type) approved by MSEDCL / licensee fabricated with 2 mm (14 SWG) M.S. sheets with supporting angle, painted with powder coating / epoxy paint of required shade, copper bus bar size 25 x 6 mm, heavy duty mechanical lock, with counter meter for measuring no. of times the opening of meter door, top side cover (CT, PT cover) interlock with meter door, epoxy casted 3 nos. CT having required ratio between 50/5A to 200/5A , VA 10 or 15, Class 0.2S, epoxy casted 3 nos. PT having ratio 33000/V3/110/V3 VA 50, Class 0.2 suitable for provided trivector meter, and provision for incoming and outgoing cables complete duly tested by licensee with necessary test certificates and erected on provided plinth/ cc foundation.	Each	272519
<u>6.5 Accessories</u>			
6-5-1	Supplying and erecting selector switch suitable for voltmeter/ammeter for 3 phase AC supply 500V, 50Hz, on provided box / panel and duly connecting with necessary PVC wire leads and lugs.	Each	334
6-5-2	Supplying and erecting LT current transformer with bar primary 50/5 to 1000/5 ratio with 15 VA burden erected in provided CRCA box duly secured with insulating materials connected to the meter with test certificates.	Each	1027

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
6-5-3	Supplying and erecting 525 V 3 phase, 50 Hz., MPP type capacitor having minimum overcurrent capacity of 1.8 In, peak inrush current capacity 300 In and minimum life 150000 hours kVAr bank of metalised polypropylene condensers (MPP) with the standard capacities of 2, 3, 5, 7, 10, 12.5 and 15 kVAr units of P.F. correction for operation on 3 phase 50 Hz. with externally discharging resistances, earthing terminals and built on angle iron or channel iron frame work and provided with terminal cover box complete erected on provided iron bracket or on floor duly tested by licensee.	kVAr	449
6-5-4	Supplying and erecting 525 V 3 phase, 50 Hz., APP type capacitor having minimum overcurrent capacity of 1.8 In, peak inrush current capacity 300 In and minimum life 150000 hours kVAr bank of all polypropylene condensers (APP) with the standard capacities of 2, 3, 5, 7, 10, 12.5 and 15 kVAr units of P.F. correction for operation on 3 phase 50 Hz. with externally discharging resistances, earthing terminals and built on angle iron or channel iron frame work and provided with terminal cover box complete erected on provided iron bracket or on floor duly tested by licensee.	kVAr	591
6-5-5	Supplying & erecting LED type indicating pilot lamp with LED colours red / yellow / green, 230 / 250V on provided box / panel with necessary material, wiring & connections etc.	Each	248
6-5-6	Supplying & erecting LED type indicating pilot lamp with LED colour blue, 230 / 250 V on provided box / panel with necessary material, wiring & connections etc.	Each	354

6.6 Surge Protective Devices (CP-SPD)

6-6-1	Supplying, installation & marking of surge arrester / surge protection device at the main distribution board after the incoming breaker of type 1+2 tested for Imax 100 kA for single phase and neutral with compliance to IEC 61643-11 as per specification no. CP-SPD	Each	9747
6-6-2	Supplying, installation & marking of surge arrester / surge protection device at the main distribution board after the incoming breaker of type 1+2 tested for Imax 100 kA for three phase and neutral with compliance to IEC 61643-11 as per specification no. CP-SPD	Each	18223
6-6-3	Supplying, installation & marking of surge arrester / surge protection device at the main distribution board after the incoming breaker of type 1+2 tested for Imax 50 kA for single phase and neutral with compliance to IEC 61643-11 as per specification no. CP-SPD	Each	7663
6-6-4	Supplying, installation & marking of surge arrester/ surge protection device at the main distribution board after the incoming breaker of type 1+2 tested for Imax 50 kA for three phase and neutral with compliance to IEC 61643-11 as per specification no. CP-SPD	Each	14929
6-6-5	Supplying, installation & marking of surge arrester/ surge protection device at the sub main distribution board after the incoming breaker of type 2 tested for Imax 40 kA for single phase and neutral with compliance to IEC 61643-11 as per specification no. CP-SPD	Each	4543
6-6-6	Supplying, installation & marking of surge arrester/ surge protection device at the sub main distribution board after the incoming breaker of type 2 tested for Imax 40 kA for three phase and neutral with compliance to IEC 61643-11 as per specification no. CP-SPD	Each	8275

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
6-6-7	Supplying, installation & marking of surge arrester/ surge protection device at the sub main distribution board after the incoming breaker of type 2 tested for I_{max} 15 kA for single phase and neutral with compliance to IEC 61643-11 as per specification no. CP-SPD	Each	5198
6-6-8	Supplying, installation & marking of surge arrester/ surge protection device at the sub main distribution board after the incoming breaker of type 2 tested for I_{max} 15 kA for three phase and neutral with compliance to IEC 61643-11 as per specification no. CP-SPD	Each	10169

Note:- The above items shall be used only in installation where sensitive instruments are used and installations that are prone to surges.

6.7 Energy Devices (Harmonic Filter, APFC Panel) (CP-ED)

6-7-1	Supplying and erecting 30 kVAr, 440 V 3 phase, 50 Hz., Contactor Logic & Intelligent Relay micro APFC passive filter panel , consisting of suitable steps of APP/MPP type capacitor units with Detuned (harmonic filter) reactors of suitable rating , APFC panel shall be compliance to IEC 61439 and power quality IEC 61921 standard as per specification no CP-ED/APFC	Each	129187
6-7-2	Supplying and erecting 40 kVAr, 440 V 3 phase, 50 Hz., Contactor Logic & Intelligent Relay micro APFC passive filter panel , consisting of suitable steps of APP/MPP type capacitor units with Detuned (harmonic filter) reactors of suitable rating , APFC panel shall be compliance to IEC 61439 and power quality IEC 61921 standard as per specification no CP-ED/APFC	Each	158640
6-7-3	Supplying and erecting 50 kVAr, 440 V 3 phase, 50 Hz., Contactor Logic & Intelligent Relay micro APFC passive filter panel , consisting of suitable steps of APP/MPP type capacitor units with Detuned (harmonic filter) reactors of suitable rating , APFC panel shall be compliance to IEC 61439 and power quality IEC 61921 standard as per specification no CP-ED/APFC	Each	162806
6-7-4	Supplying and erecting 75 kVAr, 440 V 3 phase, 50 Hz., Contactor Logic & Intelligent Relay micro APFC passive filter panel , consisting of suitable steps of APP/MPP type capacitor units with Detuned (harmonic filter) reactors of suitable rating , APFC panel shall be compliance to IEC 61439 and power quality IEC 61921 standard as per specification no CP-ED/APFC	Each	218460
6-7-5	Supplying and erecting 100 kVAr, 440 V 3 phase, 50 Hz., Contactor Logic & Intelligent Relay micro APFC passive filter panel , consisting of suitable steps of APP/MPP type capacitor units with Detuned (harmonic filter) reactors of suitable rating , APFC panel shall be compliance to IEC 61439 and power quality IEC 61921 standard as per specification no CP-ED/APFC	Each	272656
6-7-6	Supplying and erecting 125 kVAr, 440 V 3 phase, 50 Hz., Contactor Logic & Intelligent Relay micro APFC passive filter panel , consisting of suitable steps of APP/MPP type capacitor units with Detuned (harmonic filter) reactors of suitable rating , APFC panel shall be compliance to IEC 61439 and power quality IEC 61921 standard as per specification no CP-ED/APFC	Each	330799

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
6-7-7	Supplying and erecting 150 kVAr, 440 V 3 phase, 50 Hz., Contactor Logic & Intelligent Relay micro APFC passive filter panel , consisting of suitable steps of APP/MPP type capacitor units with Detuned (harmonic filter) reactors of suitable rating , APFC panel shall be compliance to IEC 61439 and power quality IEC 61921 standard as per specification no CP-ED/APFC	Each	394844
6-7-8	Supplying and erecting 175 kVAr, 440 V 3 phase, 50 Hz., Contactor Logic & Intelligent Relay micro APFC passive filter panel , consisting of suitable steps of APP/MPP type capacitor units with Detuned (harmonic filter) reactors of suitable rating , APFC panel shall be compliance to IEC 61439 and power quality IEC 61921 standard as per specification no CP-ED/APFC	Each	394844
6-7-9	Supplying and erecting 200 kVAr, 440 V 3 phase, 50 Hz., Contactor Logic & Intelligent Relay micro APFC passive filter panel , consisting of suitable steps of APP/MPP type capacitor units with Detuned (harmonic filter) reactors of suitable rating , APFC panel shall be compliance to IEC 61439 and power quality IEC 61921 standard as per specification no CP-ED/APFC	Each	494314
6-7-10	Supplying and erecting 250 kVAr, 440 V 3 phase, 50 Hz., Contactor Logic & Intelligent Relay micro APFC passive filter panel , consisting of suitable steps of APP/MPP type capacitor units with Detuned (harmonic filter) reactors of suitable rating , APFC panel shall be compliance to IEC 61439 and power quality IEC 61921 standard as per specification no CP-ED/APFC	Each	594224
6-7-11	Supplying and erecting 35 kVAr, 3 phase, 50 Hz., Power contactors Derated for microprocessor APFC controller with MPP / APP type capacitor with 525 V and having minimum overcurrent capacity of 1.8 In, peak inrush current capacity 300 In and minimum life 150000 hours with , consisting of suitable steps of MPP / APP type capacitor units with detuned aluminium filter 7% reactors with circuit breaker as main incomer and MCCB for each branch protection as per specification no CP-ED/APFC	Each	200263
6-7-12	Supplying and erecting 50 kVAr, 3 phase, 50 Hz., Power contactors Derated for microprocessor APFC controller with MPP / APP type capacitor with 525 V and having minimum overcurrent capacity of 1.8 In, peak inrush current capacity 300 In and minimum life 150000 hours with , consisting of suitable steps of MPP / APP type capacitor units with detuned aluminium filter 7% reactors with circuit breaker as main incomer and MCCB for each branch protection, as per specification no CP-ED/APFC	Each	277552
6-7-13	Supplying and erecting 100 kVAr, 3 phase, 50 Hz., Power contactors Derated for microprocessor APFC controller with MPP / APP type capacitor with 525 V and having minimum overcurrent capacity of 1.8 In, peak inrush current capacity 300 In and minimum life 150000 hours with , consisting of suitable steps of MPP / APP type capacitor units with detuned aluminium filter 7% reactors with circuit breaker as main incomer and MCCB for each branch protection, as per specification no CP-ED/APFC	Each	394547

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
6-7-14	Supplying and erecting 125 kVAr, 3 phase, 50 Hz., Power contactors Derated for microprocessor APFC controller with MPP / APP type capacitor with 525 V and having minimum overcurrent capacity of 1.8 In, peak inrush current capacity 300 In and minimum life 150000 hours with , consisting of suitable steps of MPP /APP type capacitor units with detuned aluminium filter 7% reactors with circuit breaker as main incomer and MCCB for each branch protection, as per specification no CP-ED/APFC	Each	510703
6-7-15	Supplying and erecting 150 kVAr, 3 phase, 50 Hz., Power contactors Derated for microprocessor APFC controller with MPP / APP type capacitor with 525 V and having minimum overcurrent capacity of 1.8 In, peak inrush current capacity 300 In and minimum life 150000 hours with , consisting of suitable steps of MPP/APP type capacitor units with detuned aluminium filter 7% reactors with circuit breaker as main incomer and MCCB for each branch protection, as per specification no CP-ED/APFC	Each	548813
6-7-16	Supplying and erecting 200 kVAr, 3 phase, 50 Hz., Power contactors Derated for microprocessor APFC controller with MPP / APP type capacitor with 525 V and having minimum overcurrent capacity of 1.8 In, peak inrush current capacity 300 In and minimum life 150000 hours with , consisting of suitable steps of MPP /APP type capacitor units with detuned aluminium filter 7% reactors with circuit breaker as main incomer and MCCB for each branch protection, as per specification no CP-ED/APFC	Each	614337
6-7-17	Supplying and erecting 250 kVAr, 3 phase, 50 Hz., Power contactors Derated for microprocessor APFC controller with MPP / APP type capacitor with 525 V and having minimum overcurrent capacity of 1.8 In, peak inrush current capacity 300 In and minimum life 150000 hours with , consisting of suitable steps of MPP / APP type capacitor units with detuned aluminium filter 7% reactors with circuit breaker as main incomer and MCCB for each branch protection, as per specification no CP-ED/APFC	Each	708344

6.8 Sandwich Bus Bar Trunking System

6-8-1 (New)	Supplying, erecting ,Testing & commissioning Ceiling or wall Mounting type 630A Capacity at 40°C ambient temperature Sandwich type Aluminium Conductor tin plated at joints /Aluminium conductor Silver flashed copper bimetal contact having purity not less than 99.6% with suitable for (3L+ N) 415V, 50 Hz A.C Supply with 100% Neutral+ enclosure as integral earth (PE) with IP 54/55 Protection, 36/40KA short circuit rating for 1sec , Insulation Class F (155 C) , casing made of minimum 1.5mm hot dipped / electro Galvanized /Epoxy powder coated steel sheet enclosure having Mechanical strength certification up to IK10 with required shade of paint having overall cross sectional area not more than 0.0170 sq. Mtr. , complete assembly must comply to seismic zone 4, with necessary accessories Like suspension bracket, wall bracket holder/ fixing accessories with Horizontal / Vertical G.I. Support at required interval with External Double run 50x5mm Aluminium earthing strip or Internal Integral Earth complete confirming to IEC 61439-6 as per specification	m	13075
----------------	---	---	-------

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
6-8-2 (New)	Supplying, erecting ,Testing & commissioning Ceiling or wall Mounting type 800A Capacity at 40°C ambient temperature Sandwich type Aluminium Conductor tin plated at joints /Aluminium conductor Silver flashed copper bimetal contact having purity not less than 99.6% with suitable for (3L+ N) 415V, 50 Hz A.C Supply with 100% Neutral+ enclosure as integral earth (PE) with IP 54/55 Protection, 42/50KA short circuit rating for 1sec , Insulation Class F (155 C) , casing made of minimum 1.5mm hot / electro Galvanized /Epoxy powder coated steel sheet enclosure with required shade of paint having Mechanical strength certification up to IK10 overall cross sectional area not more than 0.0170 sq. Mtr. , complete assembly must comply to seismic zone 4, with necessary accessories Like suspension bracket, wall bracket holder/ fixing accessories as per site requirement with Horizontal / Vertical G.I. Support at required interval with External Double run 50x5mm Aluminium earthing strip or Internal Integral Earth complete confirming to IEC 61439-6 as per specification	m	14391
6-8-3 (New)	Supplying, erecting ,Testing & commissioning Ceiling or wall Mounting type 1000A Capacity at 40°C ambient temperature Sandwich type Aluminium Conductor tin plated at joints /Aluminium conductor Silver flashed copper bimetal contact having purity not less than 99.6% with suitable for (3L+ N) 415V, 50 Hz A.C Supply with 100% Neutral+ enclosure as integral earth (PE) with IP 54/55 Protection, 50KA short circuit rating for 1sec ,Insulation Class F (155 C) , casing made of minimum 1.5mm hot / electro Galvanized /Epoxy powder coated steel sheet enclosure with required shade of paint having Mechanical strength certification up to IK10, overall cross sectional area not more than 0.0170 sq. Mtr. , complete assembly must comply to seismic zone 4, with necessary accessories Like suspension bracket, wall bracket holder/ fixing accessories as per site requirement with Horizontal / Vertical G.I. Support at required interval with External Double run 50x5mm Aluminium earthing strip or Internal Integral Earth complete confirming to IEC 61439-6 as per specification	m	14762
6-8-4 (New)	Supplying, erecting ,Testing & commissioning Ceiling or wall Mounting type 1250A Capacity at 40°C ambient temperature Sandwich type Aluminium Conductor tin plated at joints /Aluminium conductor Silver flashed copper bimetal contact having purity not less than 99.6% with suitable for (3L+ N) 415V, 50 Hz A.C Supply with 100% Neutral+ enclosure as integral earth (PE) with IP 54/55 Protection, 65KA short circuit rating for 1sec ,Insulation Class F (155 C) ,casing made of minimum 1.5mm hot / electro Galvanized /Epoxy powder coated steel sheet enclosure with required shade of paint having Mechanical strength certification up to IK10 overall cross sectional area not more than 0.0225 sq. Mtr. , complete assembly must comply to seismic zone 4, with necessary accessories Like suspension bracket, wall bracket holder/ fixing accessories as per site requirement with Horizontal / Vertical G.I. Support at required interval with External Double run 50x5mm Aluminium earthing strip or Internal Integral Earth complete confirming to IEC 61439-6 as per specification	m	17542

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
6-8-5 (New)	Supplying, erecting ,Testing & commissioning Ceiling or wall Mounting type Sandwich type Aluminium Conductor tin plated at joints /Aluminium conductor Silver flashed copper bimetal contact having purity not less than 99.6% with suitable for (3L+ N) 415V, 50 Hz A.C Supply with 100% Neutral+ enclosure as integral earth (PE) with IP 54/55 Protection, 65/80KA short circuit rating for 1sec ,Insulation Class F (155 C) ,casing made of minimum 1.5mm hot / electro Galvanized /Epoxy powder coated steel sheet enclosure with required shade of paint having Mechanical strength certification up to IK10 , overall cross sectional area not more than 0.0280 sq. Mtr. , complete assembly must comply to seismic zone 4, with necessary accessories Like suspension bracket, wall bracket holder/ fixing accessories as per site requirement with Horizontal / Vertical G.I. Support at required interval with External Double run 50x5mm Aluminium earthing strip or Internal Integral Earth complete confirming to IEC 61439-6 as per specification	m	19678
6-8-6 (New)	Supplying, installing, testing and commissioning of Flange end with Adaptor box , as per site requirement suitable for Aluminium 630A 3 phase 4 wire 415V, 50 Hz A.C ,36/40kA short circuit rating for 1 sec Sandwich type Aluminium BBT. with necessary accessories complete	Each	28970
6-8-7 (New)	Supplying, installing, testing and commissioning of Flange end with Adaptor box , as per site requirement suitable for 800A 3 phase 4 wire 415V, 50 Hz A.C ,42/50kA short circuit rating for 1 sec Sandwich type Aluminium BBT with necessary accessories complete confirming to IEC 61439-6 as per specification	Each	32737
6-8-8 (New)	Supplying, installing, testing and commissioning of Flange end with Adaptor box , as per site requirement suitable for 1000A 3 phase 4 wire 415V, 50 Hz A.C ,50kA short circuit rating for 1 sec Sandwich type Aluminium BBT. with necessary accessories complete confirming to IEC 61439-6 as per specification	Each	35181
6-8-9 (New)	Supplying, installing, testing and commissioning of Flange end with Adaptor box , as per site requirement suitable for 1250A 3 phase 4 wire 415V, 50 Hz A.C ,65kA short circuit rating for 1 sec Sandwich type Aluminium BBT. with necessary accessories complete confirming to IEC 61439-6 as per specification	Each	36234
6-8-10 (New)	Supplying, installing, testing and commissioning of Flange end with Adaptor box , as per site requirement suitable for 1600A 3 phase 4 wire 415V, 50 Hz A.C ,65/80kA short circuit rating for 1 sec Sandwich type Aluminium BBT. with necessary accessories complete confirming to IEC 61439-6 as per specification	Each	39650
6-8-11 (New)	Supplying, installing, testing & commissioning of Tap off box with interlock arrangement on existing Air Insulated / Sandwich type bus trunking/ rising mains for 32A to 125A 3 phase 4 wire 415V, 50Hz AC Supply made with High Grade Plastic enclosure with provision of MCB/ MCCB without (MCB/MCCB) complete as required confirming to IEC 61439-6 as per specification	Each	9791
6-8-12 (New)	Supplying, installing, testing & commissioning of Tap off box with interlock arrangement on existing Air Insulated / Sandwich type bus trunking/ rising mains for 125A to 200A 3 phase 4 wire 415V, 50Hz AC Supply made with 1.5 mm thick sheet metal enclosure (IP54/55) duly powder coated with provision of MCCB(without MCCB) complete as required confirming to IEC 61439-6 as per specification	Each	12361

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
6-8-13 (New)	Supplying, installing, testing & commissioning of Tap off box with interlock arrangement on existing Air Insulated / Sandwich type bus trunking/ rising mains for 250A to 400A 3 phase 4 wire 415V, 50Hz AC Supply made with 1.5mm thick sheet metal enclosure (IP54/55) duly powder coated with provision of MCCB(without MCCB) complete as required confirming to IEC 61439-6 as per specification	Each	18270
6-8-14 (New)	Supplying, installing, testing & commissioning of Tap off box with interlock arrangement on existing compact type bus trunking/ rising mains use on 630A, 3 phase 4 wire 415V, 50Hz AC Supply made with 1.5mm thick sheet metal enclosure (IP54/55) duly powder coated with provision of MCCB(without MCCB) complete as required. confirming to IEC 61439-6 as per specification	Each	24157
6-8-15 (New)	Supplying, installing & Commissioning Vertical or Horizontal 90 Degree Elbow for Sandwich type Aluminium Compact bus trunking/ rising mains Suitable for 630A, 3 Phase 4 Wire 415 V, 50 Hz AC Supply, 36/40kA short circuit rating for 1 sec Made of minimum 1.5mm Thick Galvanised sheet metal enclosure (IP54/55) duly powder coated with all necessary accessories complete confirming to IEC 61439-6 as per specification	Each	14238
6-8-16 (New)	Supplying, installing & Commissioning Vertical or Horizontal 90 Degree Elbow for Sandwich type Aluminium Compact bus trunking/ rising mains Suitable for 800A, 3 Phase 4 Wire 415 V, 50 Hz AC Supply,42/50KA short circuit rating for 1sec Made of minimum 1.5mm Thick Galvanised sheet metal enclosure (IP54/55) duly powder coated with all necessary accessories complete confirming to IEC 61439-6 as per specification	Each	15068
6-8-17 (New)	Supplying, installing & Commissioning Vertical or Horizontal 90 Degree Elbow for Sandwich type Aluminium Compact bus trunking/ rising mains Suitable for 1000A, 3 Phase 4 Wire 415 V, 50 Hz AC Supply,50KA short circuit rating for 1sec Made of minimum 1.5mm Thick Galvanised sheet metal enclosure (IP54/55) duly powder coated with all necessary accessories complete	Each	15744
6-8-18 (New)	Supplying, installing & Commissioning Vertical or Horizontal 90 Degree Elbow for Sandwich type Aluminium Compact bus trunking/ rising mains Suitable for 1250A, 3 Phase 4 Wire 415 V, 50 Hz AC Supply,65KA short circuit rating for 1sec Made of minimum 1.5mm Thick Galvanised sheet metal enclosure (IP54/55) duly powder coated with all necessary accessories complete	Each	18955
6-8-19 (New)	Supplying, installing & Commissioning Vertical or Horizontal 90 Degree Elbow for Sandwich type Aluminium Compact sus trunking/ rising mains of capacity 1600A, 3 Phase 4 Wire 415 V, 50 Hz AC Supply Made of minimum 1.5mm Thick Galvanised sheet metal enclosure (IP54/55) duly powder coated with all necessary accessories complete	Each	23006
6-8-20 (New)	Supplying, installing & Commissioning Vertical or Horizontal Tee Elbow for Sandwich type Aluminium Compact bus trunking/ rising mains Suitable for 630A, 3 Phase 4 Wire 415 V, 50 Hz AC Supply Made of minimum 1.5mm Thick Galvanised sheet metal enclosure (IP54/55) duly powder coated with all necessary accessories complete	Each	27631
6-8-21 (New)	Supplying, installing & Commissioning Vertical or Horizontal Tee Elbow for Sandwich type Aluminium Compact bus trunking/ rising mains Suitable for 800A, 3 Phase 4 Wire 415 V, 50 Hz AC Supply Made of minimum 1.5mm Thick Galvanised sheet metal enclosure (IP54/55) duly powder coated with all necessary accessories complete	Each	29685

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
6-8-22 (New)	Supplying, installing & Commissioning Vertical or Horizontal Tee Elbow for Sandwich type Aluminium Compact bus trunking/ rising mains Suitable for 1000A / 1250 A, 3 Phase 4 Wire 415 V, 50 Hz AC Supply Made of minimum 1.5mm Thick Galvanised sheet metal enclosure (IP54/55) duly powder coated with all necessary accessories complete	Each	35065
6-8-23 (New)	Supplying, installing & Commissioning Vertical or Horizontal Tee Elbow for Sandwich type Aluminium Compact bus trunking/ rising mains Suitable for 1600A, 3 Phase 4 Wire 415 V, 50 Hz AC Supply,65/80KA short circuit rating for 1sec Made of minimum 1.5mm Thick Galvanised sheet metal enclosure (IP54/55) duly powder coated with all necessary accessories complete	Each	37917
6-8-24 (New)	Supplying, installing & Commissioning of Plug in Points on provided Sandwich type Aluminium Compact bus trunking/ rising mains Suitable for 630A, 3 Phase 4 Wire 415 V, 50 Hz AC Supply,,36/40KA short circuit rating for 1sec Made of minimum 1.5mm Thick Galvanised sheet metal enclosure (IP54/55) duly powder coated with all necessary accessories complete.	Each	3134
6-8-25 (New)	Supplying, installing & Commissioning of Plug in Points on provided Sandwich type Aluminium Compact bus trunking/ rising mains Suitable for 800A, 3 Phase 4 Wire 415 V, 50 Hz AC Supply,42/50KA short circuit rating for 1sec Made of minimum 1.5mm Thick Galvanised sheet metal enclosure (IP54/55) duly powder coated with all necessary accessories complete.	Each	3445
6-8-26 (New)	Supplying, installing & Commissioning of Plug in Points on provided Sandwich type Aluminium Compact bus trunking/ rising mains Suitable for 1000A, 3 Phase 4 Wire 415 V, 50 Hz AC Supply,50 kA short circuit rating for 1sec Made of minimum 1.5mm Thick Galvanised sheet metal enclosure (IP54/55) duly powder coated with all necessary accessories complete.	Each	3707
6-8-27 (New)	Supplying, installing & Commissioning of Plug in Points on provided Sandwich type Aluminium Compact bus trunking/ rising mains Suitable for 1250A, 3 Phase 4 Wire 415 V, 50 Hz AC Supply,65 kA short circuit rating for 1sec Made of minimum 1.5mm Thick Galvanized sheet metal enclosure (IP54/55) duly powder coated with all necessary accessories complete	Each	3892
6-8-28 (New)	Supplying, installing & Commissioning of Plug in Points on provided Sandwich type Aluminium Compact bus trunking/ rising mains Suitable for 1600A, 3 Phase 4 Wire 415 V, 50 Hz AC Supply,65/80KA short circuit rating for 1sec Made of minimum 1.5mm Thick Galvanised sheet metal enclosure (IP54/55) duly powder coated with all necessary accessories complete	Each	4110

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>6.9 Air Insulated Bus Bar Trunking System</u>			
6-9-1	Supplying, erecting ,Testing & commissioning Ceiling or wall Mounting type 160A Capacity at 40°C ambient temperature Air Insulated type Bus Trunking Aluminium Conductor having purity not less than 99.6% with Tin plated at joints suitable for (3L+N) 415V, 50 Hz A.C Supply with 100% Neutral+ enclosure as integral earth (PE) with IP 54 Protection, 15KA short circuit rating for 0.1sec , Insulation Class F (155 C), casing made of Galvanized/ powder coated steel sheet enclosure having Mechanical strength certification up to IK10, with required shade of paint & having cross sectional area not more than 0.0150 Sq m , complete assembly must comply to seismic zone 4, with necessary accessories Like suspension bracket, wall bracket holder/ fixing accessories with , outlet cover, plug in hole as per site requirement with Horizontal / Vertical G.I. Support at required interval with External Single Run 25x10mm Aluminium earthing strip or Internal Integral Earth complete confirming to IEC 61439-6 as per specification	m	9883
6-9-2	Supplying, erecting ,Testing & commissioning Ceiling or wall Mounting type 250A Capacity at 40°C ambient temperature Air Insulated type Bus Trunking Aluminium Conductor having purity not less than 99.6% with Tin plated at joints suitable for (3L+N) 415V, 50 Hz A.C Supply with 100% Neutral+ enclosure as integral earth (PE) with IP 54 Protection, 25KA short circuit rating for 0.1sec , Insulation Class F (155 C), casing made of Galvanized/powder coated steel sheet enclosure having Mechanical strength certification up to IK10 with required shade of paint & having cross sectional area not more than 0.0150 Sq m , complete assembly must comply to seismic zone 4, with necessary accessories Like suspension bracket, wall bracket holder/ fixing accessories with , outlet cover , plug in hole as per site requirement with Horizontal / Vertical G.I. Support at required interval, External Single Run 25x10mm Aluminium earthing strip or Internal Integral Earth confirming to IEC 61439-6 as per specification	m	10630
6-9-3	Supplying, erecting ,Testing & commissioning Ceiling or wall Mounting type 400A Capacity at 40C ambient temperature Air Insulated type Bus Trunking Aluminium Conductor having purity not less than 99.6% with Tin plated at joints suitable for (3L+N) 415V, 50 Hz A.C Supply with 100% Neutral+ enclosures as integral earth (PE) BBT Shall type tested as per IEC 61439-6 with IP 54 Protection, 25KA short circuit rating for 1sec , Insulation Class F (155 C), casing made of Galvanized / powder coated steel sheet enclosure having Mechanical strength certification up to IK10, with required shade of paint & having cross sectional area not more than 0.0270 Sq m , complete assembly must comply to seismic zone 4, with necessary accessories Like suspension bracket, wall bracket holder/ fixing accessories with , outlet cover , plug in hole as per site requirement with Horizontal / Vertical G.I. Support at required interval, with External Single Run 25x10mm Aluminium earthing strip or Internal Integral Earth complete confirming to IEC 61439-6 as per specification	m	12732
6-9-4	Supplying, installation, testing and commissioning of Flange end as per design requirement & site condition suitable for Aluminium 160A, 3 phase 4 wire 415V, 50 Hz A.C ,15kA short circuit rating for 0.1 sec, for Air Insulated type BBT . With necessary accessories complete confirming to IEC 61439-6 as per specification	Each	20190

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
6-9-5	Supplying, installation, testing and commissioning of Flange end as per design requirement & site condition suitable for Aluminium 250A, 3 phase 4 wire 415V, 50 Hz A.C ,25kA short circuit rating for 0.1 sec for Air Insulated type BBT. With necessary accessories complete confirming to IEC 61439-6 as per specification	Each	21160
6-9-6	Supplying, installation, testing and commissioning of Flange end as per design requirement & site condition suitable for Aluminium 400A, 3 phase 4 wire 415V, 50 Hz A.C ,25kA short circuit rating for 1 sec for Air Insulated type BBT. With necessary accessories complete confirming to IEC 61439-6 as per specification	Each	22518
6-9-7	Supplying, installing & Commissioning Vertical or Horizontal 90 Degree/Tee Elbow for Air Insulated type bus trunking/ rising mains of capacity 160A, 3 Phase 4 Wire 415 V, 50 Hz AC Supply,15kA short circuit rating for 1 sec Made Galvanised sheet metal enclosure (IP54) duly powder coated with all necessary accessories complete confirming to IEC 61439-6 as per specification.	Each	34543
6-9-8	Supplying, installing & Commissioning Vertical or Horizontal 90 Degree/Tee Elbow for Air Insulated type bus trunking/ rising mains of capacity 250A, 3 Phase 4 Wire 415 V, 50 Hz AC Supply,,25kA short circuit rating for 1 sec Made Galvanised sheet metal enclosure (IP54) duly powder coated with all necessary accessories complete confirming to IEC 61439-6 as per specification.	Each	35138
6-9-9	Supplying, installing & Commissioning Vertical or Horizontal 90 Degree/Tee Elbow for Air Insulated type bus trunking/ rising mains of capacity 400A, 3 Phase 4 Wire 415 V, 50 Hz AC Supply,25kA short circuit rating for 1 sec Made Galvanised sheet metal enclosure (IP54) duly powder coated with all necessary accessories complete confirming to IEC 61439-6 as per specification.	Each	52013

Chapter : 7
Cables (CB)

7.1 LT Cables (Aluminium)	(CB-LT/AL)
7.2 LT Cables (Copper)	(CB-LT/CU)
7.3 HT Cables	(CB-HT)
7.4 Cable Joints & End Termination Kits (LT Cables)	(CB-JT/LT)
7.5 Cable Joints & End Termination Kits (HT Cables)	(CB-JT/HT)
7.6 Cable Enclosures	(CB-CE)
7.7 Cable Glands	(CB-GL)
7.8 Street Light Boxes and Cable Indicators	(CB-SB/CB-CIP)
7.9 Cable Lugs (Copper)	(CB-CL/CU)
7.10 Cable Lugs (Aluminium)	(CB-CL/AL)
7.11 Cable Tray	(CB-CT)
7.12 Dismantling	

Chapter : 7 CABLES (CB)

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>7.1 LT Cables (Aluminium) (CB-LT/AL)</u>			
7-1-1	Supplying, erecting & terminating XLPE insulated unarmoured cable 1100 V 1 core 70 sq. mm. aluminium conductor complete erected with lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	219
7-1-2	Supplying, erecting & terminating XLPE insulated unarmoured cable 1100 V 1 core 95 sq. mm. aluminium conductor complete erected with lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	241
7-1-3	Supplying, erecting & terminating XLPE insulated unarmoured cable 1100 V 1 core 120 sq. mm. aluminium conductor complete erected with lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	274
7-1-4	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V 2 core 4 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	113
7-1-5	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 2 core 6 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	127
7-1-6	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 2 core 10 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	143
7-1-7	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3 core 2.5 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	116
7-1-8	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3 core 4 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	122
7-1-9	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3 core 6 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	137

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
7-1-10	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3 core 10 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	162
7-1-11	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3 core 16 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	183
7-1-12	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3 core 25 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	214
7-1-13	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3 core 35 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	267
7-1-14	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3 core 50 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	324
7-1-15	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 25 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	242
7-1-16	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 35 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	293
7-1-17	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 50 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	381
7-1-18	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 70 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	494
7-1-19	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 95 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	606

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
7-1-20	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 120 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	754
7-1-21	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 150 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	893
7-1-22	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 185 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	1093
7-1-23	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½core 240 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	1369
7-1-24	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 300 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	1636
7-1-25	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½core 400 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	2041
7-1-26	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 4 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	135
7-1-27	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 6 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	152
7-1-28	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 10 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	181
7-1-29	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 16 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	211

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
7-1-30	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 25 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	261
7-1-31	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 35 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	324
7-1-32	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 50 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	409
7-1-33	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 70 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	537
7-1-34	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 95 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	664
7-1-35	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 120 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	812
7-1-36	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 150 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	995
7-1-37	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 185 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	1212
7-1-38	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 240 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	1537
7-1-39	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 300 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	1821

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
7-1-40	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 400 sq. mm. aluminium conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/AL	m	2275
7-1-41	Re-erecting PVC / XLPE armoured cable 2 to 4 Core up to 50 sq. mm. on wall with necessary material & G.I. earth wire.	m	54
7-1-42	11kV/22kV/33kV Cable fault detection for HT power underground cable from 35 sq. mm. to 400 sq. mm. by acoustic method by using surge wave tester & surge wave receiver (Duo phone) up to 250 meter length cable with recording results & submission of test reports.	per job	8004
7-1-43	11kV/22kV/33kV Cable fault detection for HT power underground cable from 35 sq. mm. to 400 sq. mm. by acoustic method by using surge wave tester & surge wave receiver (Duo phone) 251 meter to 500 meter length cable with recording results & submission of test reports.	per job	7676
7-1-44	Cable fault detection for all types of LT underground cable from 16sq. mm. to 400 sq. mm. by acoustic method by using surge wave tester & surge wave receiver (Duo phone) up to 250 meter length cable with recording results & submission of test reports.	per job	7556
7-1-45	Cable fault detection for all types of LT underground cable from 16 sq. mm. to 400 sq. mm. by acoustic method by using surge wave tester & surge wave receiver (Duo phone) 251 meter to 500 meter length cable with recording results & submission of test reports.	per job	7229
Note	<p>1) Add Rs. 5/- per metre for erection of cables on stone wall.</p> <p>2) Rate of all cables includes cost of lugs, glands, etc. required for erection and connection of cable.</p> <p>3) In case of next fault for same cable add Rs 4000/- per fault for fault detection.</p> <p>4)Add Rs 5000/- for high pressure testing charges of H.T. cable.</p> <p>5)Transportation charges of fault finding machine above 20 km Rs 12/- per km</p> <p>6) For round wire armouring increase rates by 27%.</p> <p>7) For use of XLPE insulation instead of FR-XLPE insulated armoured cable reduce rates by 5 %</p> <p>8) For use of FRLS-XLPE insulation instead of FR-XLPE insulated armoured cable increase rates by 5 %</p> <p>9) For use of XL-HFFR insulation instead of FR-XLPE insulated armoured cable increase rates by 14 %</p> <p>10) XL-HFFR insulated armoured cable are applicable for indoor use only.</p> <p>11) XL-HFFR insulated armoured cable shall be used for Hospital Buildings only. If used for other applications, prior permission from competent authority shall be taken.</p>		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>7.2 LT Cables (Copper) (CB-LT/CU)</u>			
7-2-1	Supplying, erecting & terminating XLPE insulated unarmoured cable 1100 V. 1 core 25 sq. mm. copper conductor complete erected with provided lugs, laid in provided control panel /distribution boards / pipe as per specification no. CB-LT/CU	m	351
7-2-2	Supplying, erecting & terminating XLPE insulated unarmoured cable 1100 V. 1 core 35 sq. mm. copper conductor complete erected with provided lugs, laid in provided control panel /distribution boards / pipe as per specification no. CB-LT/CU	m	479
7-2-3	Supplying, erecting & terminating XLPE insulated unarmoured cable 1100 V. 1 core 50 sq. mm. copper conductor complete erected with provided lugs, laid in provided control panel /distribution boards / pipe as per specification no. CB-LT/CU	m	643
7-2-4	Supplying, erecting & terminating XLPE insulated unarmoured cable 1100 V. 1 core 70 sq. mm. copper conductor complete erected with provided lugs, laid in provided control panel/distribution boards / pipe as per specification no. CB-LT/CU	m	901
7-2-5	Supplying, erecting & terminating XLPE insulated unarmoured cable 1100 V. 1 core 95 sq. mm. copper conductor complete erected with provided lugs, laid in provided control panel /distribution boards / pipe as per specification no. CB-LT/CU	m	1199
7-2-6	Supplying, erecting & terminating XLPE insulated unarmoured cable 1100 V. 1 core 120 sq. mm. copper conductor complete erected with provided lugs, laid in provided control panel /distribution boards / pipe as per specification no. CB-LT/CU	m	1505
7-2-7	Supplying, erecting & terminating XLPE insulated unarmoured cable 1100 V. 1 core 150 sq. mm. copper conductor complete erected with provided lugs, laid in provided control panel /distribution boards / pipe as per specification no. CB-LT/CU	m	1871
7-2-8	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 2 core 2.5 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	144
7-2-9	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 2 core 4 sq mm copper conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	195
7-2-10	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 2 core 6 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	246
7-2-11	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 2 core 10 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	365
7-2-12	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 2 core 16 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	504

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
7-2-13	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 2 core 25 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	750
7-2-14	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3 core 2.5 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	173
7-2-15	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3 core 4 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	242
7-2-16	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3 core 6 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	316
7-2-17	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3 core 10 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	476
7-2-18	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3 core 16 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	664
7-2-19	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3 core 25 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	1065
7-2-20	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 25 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	1280
7-2-21	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 35 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	1664
7-2-22	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 50 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	2297
7-2-23	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 70 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	3238
7-2-24	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 95 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	4650

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
7-2-25	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 120 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	5955
7-2-26	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 150 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	7201
7-2-27	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 185 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	8977
7-2-28	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½core 240 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	11514
7-2-29	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½ core 300 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	14315
7-2-30	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 3½core 400 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	18614
7-2-31	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 4 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	297
7-2-32	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 6 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	396
7-2-33	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 10 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	603
7-2-34	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 16 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	863
7-2-35	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 25 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	1381
7-2-36	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 35 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	1885

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
7-2-37	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 50 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	2578
7-2-38	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 70 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	3699
7-2-39	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 95 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	5310
7-2-40	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 120 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	6682
7-2-41	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 150 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	8337
7-2-42	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 185 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	10251
7-2-43	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 240 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	13197
7-2-44	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 300 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	16415
7-2-45	Supplying, erecting & terminating FR XLPE insulated, galvanised steel formed wire armoured (strip) cable 1100 V, 4 core 400 sq. mm. copper conductor complete erected with glands & lugs, on wall/ trusses/ pole or laid in provided trench/ pipe as per specification no. CB-LT/CU	m	21523

- Note**
- 1) Add Rs. 5/- per meter for erection of cables on stone wall.
 - 2) Rate of all cables includes cost of lugs, glands, etc. required for erection and connection of cable.
 - 3) For cable fault detection rates refer sub chapter 7.1 and notes below.
 - 4) For round wire armouring increase rates by 18%.
 - 5) For use of XLPE insulation instead of FR-XLPE insulated armoured cable reduce rate by 5 %
 - 6) For use of FRLS-XLPE insulation instead of FR-XLPE insulated armoured cable increase rate by 2 %

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>7.3 HT Cables (CB-HT)</u>			
7-3-1	Supplying , erecting & terminating 11 kV(E), 3 x 70 sq. mm., aluminium conductor XLPE insulated, galvanised steel formed wire armoured (strip) cable laid in provided trench / pipe as per specification no. CB-HT	m	1148
7-3-2	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 11 kV(E), 3 x 95 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	1346
7-3-3	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 11 kV(E), 3 x 120 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	1536
7-3-4	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 11 kV(E), 3 x 150 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	1726
7-3-5	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 11 kV(E), 3 x 185 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	1999
7-3-6	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 11 kV(E), 3 x 240 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	2379
7-3-7	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 11 kV(E), 3 x 300 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	2753
7-3-8	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 11 kV(E), 3 x 400 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	3414
7-3-9	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 11 kV(UE), 3 x 95 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	1704
7-3-10	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 11 kV(UE), 3 x 120 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	1948
7-3-11	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 11 kV(UE), 3 x 150 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	2169
7-3-12	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 11 kV(UE), 3 x 185 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	2427

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
7-3-13	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 11 kV(UE), 3 x 240 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	2831
7-3-14	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 11 kV(UE), 3 x 300 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	3251
7-3-15	Supplying , erecting & terminating XLPE insulated galvanised steel formed wire armoured (strip) cable 11 kV(UE), 3 x 400 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	3819
7-3-16	Supplying , erecting & terminating XLPE insulated galvanised steel formed wire armoured (strip) cable 22 kV(E), 3 x 95 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	1770
7-3-17	Supplying , erecting & terminating XLPE insulated galvanised steel formed wire armoured (strip) cable, 22 kV(E), 3 x 120 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	2003
7-3-18	Supplying , erecting & terminating XLPE insulated galvanised steel formed wire armoured (strip) cable 22 kV(E), 3 x 150 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	2223
7-3-19	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 22 kV(E), 3 x 185 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	2482
7-3-20	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 22 kV(E), 3 x 240 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	2892
7-3-21	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 22 kV(E), 3 x 300 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	3316
7-3-22	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 33 kV(E), 3 x 95 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	2340
7-3-23	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 33 kV(E), 3 x 120 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	2624
7-3-24	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 33 kV(E), 3 x 150 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	2827

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
7-3-25	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 33 kV(E), 3 x 185 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	3115
7-3-26	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 33 kV(E), 3 x 240 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	3544
7-3-27	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 33 kV(E), 3 x 300 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	3980
7-3-28	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 33 kV(UE), 3 x 150 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	2826
7-3-29	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 33 kV(UE), 3 x 185 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	3112
7-3-30	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire (strip) armoured cable 33 kV(UE), 3 x 240 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	3534
7-3-31	Supplying , erecting & terminating XLPE insulated, galvanised steel formed wire armoured (strip) cable 33 kV(UE), 3 x 300 sq. mm. aluminium conductor laid in provided trench / pipe as per specification no. CB-HT	m	3976

Note 1) For cable fault detection rates refer sub chapter 7.1 and notes below.

2) For round wire armouring increase rate

For 11 kV (E) by 28%

For 11 kV(UE), 22 kV, 33kV (E)/(UE) by 31%

7.4 Cable Joints & End Termination Kits (LT Cables) (CB-JT/LT)

7-4-1	Providing & erecting epoxy straight through joint outdoor/indoor for LT XLPE armoured cable 2.5 to 16 sq mm. , with necessary material as per specification No. CB-JT/LT	Each	2229
7-4-2	Providing & erecting epoxy straight through joint outdoor/indoor for LT XLPE armoured cable 25 to 50 sq mm. , with necessary material as per specification No. CB-JT/LT	Each	2672
7-4-3	Providing & erecting epoxy straight through joint outdoor/indoor for LT XLPE armoured cable 70 to 95 sq mm. , with necessary material as per specification No. CB-JT/LT	Each	3511
7-4-4	Providing & erecting epoxy straight through joint outdoor/indoor for LT XLPE armoured cable 120 to 185 sq. mm. , with necessary material as per specification No. CB-JT/LT	Each	3645

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
7-4-5	Providing & erecting epoxy straight through joint outdoor/indoor for LT XLPE armoured cable 240 sq.mm., with necessary material as per specification No. CB-JT/LT	Each	5655
7-4-6	Providing & erecting epoxy straight through joint outdoor/indoor for LT XLPE armoured cable 300 sq mm., with necessary material as per specification No. CB-JT/LT	Each	6973
7-4-7	Providing & erecting epoxy straight through joint outdoor/indoor for LT XLPE armoured cable 400 sq mm., with necessary material as per specification No. CB-JT/LT	Each	7035
7-4-8	Providing & erecting epoxy outdoor / indoor end termination kit for LT XLPE armoured cable 2.5 to 16 sq mm., with necessary material as per specification No. CB-JT/LT	Each	1598
7-4-9	Providing & erecting epoxy outdoor / indoor end termination kit for LT XLPE armoured cable 25 to 50 sq mm., with necessary material as per specification No. CB-JT/LT	Each	1936
7-4-10	Providing & erecting epoxy outdoor / indoor end termination kit for LT XLPE armoured cable 70 to 120 sq mm., with necessary material as per specification No. CB-JT/LT	Each	2261
7-4-11	Providing & erecting epoxy outdoor / indoor end termination kit for LT XLPE armoured cable 150 to 185 sq mm., with necessary material as per specification No. CB-JT/LT	Each	2839
7-4-12	Providing & erecting epoxy outdoor / indoor end termination kit for LT XLPE armoured cable 240 to 300 sq mm., with necessary material as per specification no. CB-JT/LT	Each	2911
7-4-13	Providing & erecting epoxy outdoor / indoor end termination kit for LT XLPE armoured cable 400 sq mm., with necessary material as per specification No. CB-JT/LT	Each	3570

7.5 Cable Joints & End Termination Kits (HT Cables) (CB-JT/HT)

7-5-1	Providing and erecting Heat shrinkable indoor termination kit for 11 kV (E) XLPE HT cable 3x up to 95 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	8659
7-5-2	Providing and erecting Heat shrinkable indoor termination kit for 11 kV (E) XLPE HT cable 3x120 to 185 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	10474
7-5-3	Providing and erecting Heat shrinkable indoor termination kit for 11 kV (E) XLPE HT cable 3x240 to 300 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	11278
7-5-4	Providing and erecting Heat shrinkable indoor termination kit for 11 kV (E) XLPE HT cable 3x400 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	11725
7-5-5	Providing and erecting Heat shrinkable out door termination kit for 11 kV (E) XLPE HT cable 3 x up to 95 sq. mm. with necessary material as per specification No. CB-JT/HT	Each	15075

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
7-5-6	Providing and erecting Heat shrinkable outdoor termination kit for 11 kV (E) XLPE HT cable 3x120 to 185 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	13124
7-5-7	Providing and erecting Heat shrinkable out door termination kit for 11 kV (E) XLPE HT cable 3x240 to 300 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	14606
7-5-8	Providing and erecting Heat shrinkable outdoor termination kit for 11 kV (E) XLPE HT cable 3x400 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	15074
7-5-9	Providing and erecting Heat shrinkable straight through joint kit for 11 kV (E) XLPE HT cable 3x up to 95 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	22446
7-5-10	Providing and erecting Heat shrinkable straight through joint kit for 11 kV (E) XLPE HT cable 3x120 to 185 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	26620
7-5-11	Providing and erecting Heat shrinkable straight through joint kit for 11 kV (E) XLPE HT cable 3x240 to 400 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	32059
7-5-12	Providing and erecting Heat shrinkable indoor termination kit for 11 kV (UE)/22 kV (E) XLPE HT cable 3x up to 95 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	10989
7-5-13	Providing and erecting Heat shrinkable indoor termination kit for 11 kV (UE)/ 22 kV (E) XLPE HT cable 3x120 to 185 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	13414
7-5-14	Providing and erecting Heat shrinkable indoor termination kit for 11 kV (UE)/ 22 kV (E) XLPE HT cable 3x240 to 400 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	16050
7-5-15	Providing and erecting Heat shrinkable out door termination kit for 11 kV (UE)/ 22 kV (E) XLPE HT cable 3x up to 95 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	15986
7-5-16	Providing and erecting Heat shrinkable outdoor termination kit for 11 kV (UE)/ 22 kV (E) XLPE HT cable 3x120 to 185 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	18567
7-5-17	Providing and erecting Heat shrinkable outdoor termination kit for 11 kV (UE)/ 22 kV (E) XLPE HT cable 3x240 to 400 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	24342
7-5-18	Providing and erecting Heat shrinkable straight through joint kit for 11 kV (UE)/22 kV (E) XLPE HT cable 3x up to 95 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	38565
7-5-19	Providing and erecting Heat shrinkable straight through joint kit for 11 kV (UE)/22 kV (E) XLPE HT cable 3x120 to 185 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	42001
7-5-20	Providing and erecting Heat shrinkable straight through joint kit for 11 kV (UE)/22 kV (E) XLPE HT cable 3x240 to 300 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	51671

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
7-5-21	Providing and erecting Heat shrinkable straight through joint kit for 11 kV (UE)/ 22 kV (E) XLPE HT cable 3x 400 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	59115
7-5-22	Providing and erecting Heat shrinkable indoor termination kit for 33 kV (E)/33 kV (UE) XLPE HT cable 3x up to 70 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	15293
7-5-23	Providing and erecting Heat shrinkable indoor termination kit for 33 kV (E)/33 kV (UE) XLPE HT cable 3x95 to 150 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	16044
7-5-24	Providing and erecting Heat shrinkable indoor termination kit for 33 kV (E)/33 kV (UE) XLPE HT cable 3x185 to 240 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	21137
7-5-25	Providing and erecting Heat shrinkable indoor termination kit for 33 kV (E)/33 kV (UE) XLPE HT cable 3x300 sq. mm. to 400 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	25250
7-5-26	Providing and erecting Heat shrinkable out door termination kit for 33 kV (E) /33 kV (UE)XLPE HT cable 3x up to 70 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	19831
7-5-27	Providing and erecting Heat shrinkable outdoor termination kit for 33 kV (E) /33 kV (UE)XLPE HT cable 3x 95 to 150 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	22737
7-5-28	Providing and erecting Heat shrinkable outdoor termination kit for 33 kV (E)/33 kV (UE) XLPE HT cable 3x185 to 240 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	29245
7-5-29	Providing and erecting Heat shrinkable outdoor termination kit for 33 kV (E)/33 kV (UE) XLPE HT cable 3x300 sq. mm. to 400 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	35237
7-5-30	Providing and erecting Heat shrinkable straight through joint kit for 33 kV (E)/33 kV (UE) XLPE HT cable 3x up to 70 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	45771
7-5-31	Providing and erecting Heat shrinkable straight through joint kit for 33 kV (E)/33 kV (UE) XLPE HT cable 3x95 to 150 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	57379
7-5-32	Providing and erecting Heat shrinkable straight through joint kit for 33 kV (E)/33 kV (UE) XLPE HT cable 3x185 to 240 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	78345
7-5-33	Providing and erecting Heat shrinkable straight through joint kit for 33 kV (E)/33 kV (UE) XLPE HT cable 3x300 to 400 sq. mm. with necessary material as per specification no. CB-JT/HT	Each	87900
Note	Above rates are for aluminium lugs & ferrules. For copper lugs & ferrules increase rates by 14 %		
<u>7.6 Cable Enclosures (CB-CE)</u>			
7-6-1	Supplying & erecting G.I. pipe 'A' class 25 mm dia. erected for enclosing XLPE armoured cable on wall/pole as per specification no. CB-CE	m	217

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
7-6-2	Supplying & erecting G.I. pipe 'A' class 40 mm dia. erected for enclosing XLPE armoured cable on wall/pole as per specification no. CB-CE	m	337
7-6-3	Supplying & erecting G.I. pipe 'A' class 50 mm dia. erected for enclosing XLPE armoured cable on wall/pole as per specification no. CB-CE	m	444
7-6-4	Supplying & erecting G.I. pipe 'A' class 75 mm dia. erected for enclosing XLPE armoured cable on wall/pole as per specification no. CB-CE	m	672
7-6-5	Supplying & laying (including excavation) reinforced cement concrete pipe of IS 458:2003 NP-2 class of 150 mm internal diameter in proper line, level and slope including providing and fixing collars in cement mortar 1:2 and curing etc. complete.	m	569
7-6-6	Supplying & laying (including excavation) half round reinforced cement concrete pipe of IS 458:2003 NP-2 class of 150 mm internal diameter in proper line, level and slope including providing and fixing collars in cement mortar 1:2 and curing etc. complete.	m	508
7-6-7	Supplying & laying (including excavation) reinforced cement concrete pipe of IS 458:2003 NP-2 class of 250 mm internal diameter in proper line, level and slope including providing and fixing collars in cement mortar 1:2 and curing etc. complete.	m	640
7-6-8	Supplying & laying (including excavation) half round reinforced cement concrete pipe of IS 458:2003 NP-2 class of 250 mm internal diameter in proper line, level and slope including providing and fixing collars in cement mortar 1:2 and curing etc. complete.	m	545
7-6-9	Supplying and laying (including excavation of suitable width & depth up to 90 cm) 50 mm outside dia. double wall corrugated pipes (DWC) of HDPE for enclosing cable below ground/road surface, to required depth complete.	m	210
7-6-10	Supplying and laying (including excavation of suitable width & depth up to 90 cm) 75 mm outside dia. double wall corrugated pipes (DWC) of HDPE for enclosing cable below ground/road surface, to required depth complete.	m	241
7-6-11	Supplying and laying (including excavation of suitable width & depth up to 90 cm) 90 mm outside dia. double wall corrugated pipes (DWC) of HDPE for enclosing cable below ground/road surface, to required depth complete.	m	337
7-6-12	Supplying and laying (including excavation of suitable width & depth up to 90 cm) 120 mm outside dia. double wall corrugated pipes (DWC) of HDPE for enclosing cable below ground/road surface, to required depth complete.	m	392
7-6-13	Supplying and laying (including excavation of suitable width & depth up to 90 cm) 146 mm outside dia. double wall corrugated pipes (DWC) of HDPE for enclosing cable below ground/road surface, to required depth complete.	m	505
7-6-14	Supplying and laying (including excavation of suitable width & depth up to 90 cm) 160 mm outside dia, double wall corrugated pipes (DWC) of HDPE for enclosing cable below ground/road surface, to required depth complete.	m	496
7-6-15	Supplying and laying (including excavation of suitable width & depth up to 90 cm) 175 mm outside dia, double wall corrugated pipes (DWC) of HDPE for enclosing cable below ground/road surface, to required depth complete.	m	635

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
7-6-16	Supplying and laying (including excavation of suitable width & depth up to 90 cm) 200 mm outside dia, double wall corrugated pipes (DWC) of HDPE for enclosing cable below ground/road surface, to required depth complete.	m	733
7-6-17 (New)	Making Horizontal Directional Drill / Bore of 150 mm dia and depth up to 1.5 mtr in soft soil and laying 150 mm HDPE/GI pipe etc. complete as per specification no. CW-EXN-CTR	m	3450
Note	1)For erection of G I pipe on stone wall add Rs. 5/- per metre to the rate. 2)All the GI pipes and DWC pipes shall be ISI marked. 3) For running the cable across the field / along the road, it should be covered by half round Hume Pipe only.		
<u>7.7 Cable Glands(CB-GL)</u>			
7-7-1	Supplying & erecting single compression type brass cable glands for 2 to 4 core 2.5 sq mm /2 to 4 core 4 sq mm /2 core 6 sq mm for XLPE armoured cable as per specification No. CB-GL	Each	68
7-7-2	Supplying & erecting single compression type brass cable glands for 3 to 4 core 6 sq mm /2 to 4 core 10 sq mm for XLPE armoured cable as per specification No. CB-GL	Each	87
7-7-3	Supplying & erecting single compression type brass cable glands for 3 to 4 core 16 sq mm /3 to 4 core 25 sq mm /3 core 35 sq mm for XLPE armoured cable as per specification No. CB-GL	Each	173
7-7-4	Supplying & erecting single compression type brass cable glands for 4 core 35 Sq.mm./3 core 50 Sq.mm. for XLPE armoured cable as per specification no. CB-GL	Each	196
7-7-5	Supplying & erecting single compression type brass cable glands for 4 core 50 sq mm for XLPE armoured cable as per specification No. CB-GL	Each	262
7-7-6	Supplying & erecting single compression type brass cable glands for 3½ core 70 sq mm for XLPE armoured cable as per specification No. CB-GL	Each	262
7-7-7	Supplying & erecting single compression type brass cable glands for 3½ core 95 sq mm for XLPE armoured cable as per specification No. CB-GL	Each	295
7-7-8	Supplying & erecting single compression type brass cable glands for 3½ core 120 sq mm for XLPE armoured cable as per specification No. CB-GL	Each	349
7-7-9	Supplying & erecting single compression type brass cable glands for 3½ core 150 sq mm for XLPE armoured cable as per specification No. CB-GL	Each	349
7-7-10	Supplying & erecting single compression type brass cable glands for 3½ core 185 sq mm for XLPE armoured cable as per specification No. CB-GL	Each	559
7-7-11	Supplying & erecting single compression type brass cable glands for 3½core 240 sq mm for XLPE armoured cable as per specification No. CB-GL	Each	559

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
7-7-12	Supplying & erecting single compression type brass cable glands for 3½core 300 sq mm for XLPE armoured cable as per specification No. CB-GL	Each	764
7-7-13	Supplying & erecting single compression type brass cable glands for 3½core 400 sq mm for XLPE armoured cable as per specification No. CB-GL	Each	912

- Note**
- 1) For use of flange type glands increase rate by 50%.
 - 2) Glands are to be provided at the time of repairs.

7.8 Street Light Boxes & Cable Indicators (CB-SB/CB-CIP)

7-8-1	Supplying & erecting cast iron cable indicator plate buried along with route of cable for PVC / XLPE armoured cable as per specification No. CB-CIP	Each	172
7-8-2	Supplying & erecting water tight terminal box of 1.6 mm (16 gauge) CRCA sheet of size 200 x 150 x 150 mm . complete on pole as per specification No. CB-SB	Each	482
7-8-3	Supplying & erecting water tight terminal box of 1.6 mm (16 gauge) CRCA sheet of size 300 x 200 x 150 mm complete on pole as per specification No. CB-SB	Each	680
7-8-4	Supplying & erecting water tight terminal box of 1.6 mm (16 gauge) CRCA sheet of size 150 x 100 x 100 mm complete on pole as per specification No. CB-SB	Each	325
7-8-5	Supplying & erecting water tight terminal box of cast iron of size 200 x 150 x 150 mm complete on pole as per specification No. CB-SB	Each	601
7-8-6	Supplying & erecting water tight terminal box of cast iron of size 300 x 200 x 150 mm complete on pole as per specification No. CB-SB	Each	709
7-8-7	Supplying & erecting water tight terminal box of cast iron of size 150 x 100 x 100 mm complete on pole as per specification No. CB-SB	Each	512
7-8-8	Supplying & erecting FRP box of size 150mm x 125mm x 100 mm, 2.7 mm thick complete on pole/wall as per specification No. CB-SB	Each	496
7-8-9	Supplying & erecting FRP box of size 250mm x 200mm x 100 mm, 2.7 mm thick complete on pole/wall as per specification No. CB-SB	Each	588
7-8-10	Supplying & erecting FRP box of size 300mm x 200mm x 125 mm, 2.7 mm thick complete on pole/wall as per specification No. CB-SB	Each	786

7.9 Cable Lugs (Copper) (CB-CL/CU)

7-9-1	Supplying & erecting crimping type copper lugs for cable up to 16 sq mm complete as per specification No. CB-CL/CU	Each	23
7-9-2	Supplying & erecting crimping type copper lugs for cable 25 sq mm complete as per specification No. CB-CL/CU	Each	35
7-9-3	Supplying & erecting crimping type copper lugs for cable 35 sq mm complete as per specification No. CB-CL/CU	Each	43
7-9-4	Supplying & erecting crimping type copper lugs for cable 50 sq mm complete as per specification No. CB-CL/CU	Each	58

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
7-9-5	Supplying & erecting crimping type copper lugs for cable 70 sq mm complete as per specification No. CB-CL/CU	Each	81
7-9-6	Supplying & erecting crimping type copper lugs for cable 95 sq mm complete as per specification No. CB-CL/CU	Each	112
7-9-7	Supplying & erecting crimping type copper lugs for cable 120 sq mm complete as per specification No. CB-CL/CU	Each	147
7-9-8	Supplying & erecting crimping type copper lugs for cable 150 sq mm complete as per specification No. CB-CL/CU	Each	275
7-9-9	Supplying & erecting crimping type copper lugs for cable 185 sq mm complete as per specification No. CB-CL/CU	Each	252
7-9-10	Supplying & erecting crimping type copper lugs for cable 240 sq mm complete as per specification No. CB-CL/CU	Each	342
7-9-11	Supplying & erecting crimping type copper lugs for cable 300 sq mm complete as per specification No. CB-CL/CU	Each	479
7-9-12	Supplying & erecting crimping type copper lugs for cable 400 sq mm complete as per specification No. CB-CL/CU	Each	672

7.10 Cable Lugs (Aluminium) (CB-CL/AL)

7-10-1	Supplying & erecting crimping type aluminium lugs for cable up to 16 sq mm complete as per specification No. CB-CL/AL	Each	10
7-10-2	Supplying & erecting crimping type aluminium lugs for cable 25 sq mm complete as per specification No. CB-CL/AL	Each	11
7-10-3	Supplying & erecting crimping type aluminium lugs for cable 35 sq mm complete as per specification No. CB-CL/AL	Each	18
7-10-4	Supplying & erecting crimping type aluminium lugs for cable 50 sq mm complete as per specification No. CB-CL/AL	Each	23
7-10-5	Supplying & erecting crimping type aluminium lugs for cable 70 sq mm complete as per specification No. CB-CL/AL	Each	30
7-10-6	Supplying & erecting crimping type aluminium lugs for cable 95 sq mm complete as per specification No. CB-CL/AL	Each	32
7-10-7	Supplying & erecting crimping type aluminium lugs for cable 120 sq mm complete as per specification No. CB-CL/AL	Each	45
7-10-8	Supplying & erecting crimping type aluminium lugs for cable 150 sq mm complete as per specification No. CB-CL/AL	Each	57
7-10-9	Supplying & erecting crimping type aluminium lugs for cable 185 sq mm complete as per specification No. CB-CL/AL	Each	75
7-10-10	Supplying & erecting crimping type aluminium lugs for cable 240 sq mm complete as per specification No. CB-CL/AL	Each	109
7-10-11	Supplying & erecting crimping type aluminium lugs for cable 300 sq mm complete as per specification No. CB-CL/AL	Each	158
7-10-12	Supplying & erecting crimping type aluminium lugs for cable 400 sq mm complete as per specification No. CB-CL/AL	Each	216

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>7.11 Cable Tray (CB-CT)</u>			
7-11-1	Providing & erecting hot dipped galvanised ladder type cable tray manufactured from 16 SWG (1.6 mm thick) GI sheet of 150 mm width & 100 mm height comprising all required standard accessories.	m	767
7-11-2	Providing & erecting hot dipped galvanised ladder type cable tray manufactured from 16 SWG (1.6 mm thick) GI sheet of 200 mm width & 100 mm height comprising all required standard accessories.	m	799
7-11-3	Providing & erecting hot dipped galvanised ladder type cable tray manufactured from 16 SWG (1.6 mm thick) GI sheet of 300 mm width & 100 mm height comprising all required standard accessories.	m	854
7-11-4	Providing & erecting hot dipped galvanised ladder type cable tray manufactured from 16 SWG (1.6 mm thick) GI sheet of 400 mm width & 100 mm height comprising all required standard accessories.	m	910
7-11-5	Providing & erecting hot dipped galvanised ladder type cable tray manufactured from 16 SWG (1.6 mm thick) GI sheet of 500 mm width & 100 mm height comprising all required standard accessories.	m	965
7-11-6	Providing & erecting hot dipped galvanised ladder type cable tray manufactured from 16 SWG (1.6 mm thick) GI sheet of 150 mm width & 75 mm height complete with necessary coupler plates & hardware.	m	614
7-11-7	Providing & erecting hot dipped galvanised ladder type cable tray manufactured from 16 SWG (1.6 mm thick) GI sheet of 200 mm width & 75 mm height complete with necessary coupler plates & hardware.	m	699
7-11-8	Providing & erecting hot dipped galvanised ladder type cable tray manufactured from 16 SWG (1.6 mm thick) GI sheet of 300 mm width & 75 mm height complete with necessary coupler plates & hardware.	m	870
7-11-9	Providing & erecting hot dipped galvanised ladder type cable tray manufactured from 16 SWG (1.6 mm thick) GI sheet of 400 mm width & 75 mm height complete with necessary coupler plates & hardware.	m	1042
7-11-10	Providing & erecting hot dipped galvanised ladder type cable tray manufactured from 16 SWG (1.6 mm thick) GI sheet of 500 mm width & 75 mm height complete with necessary coupler plates & hardware.	m	1213
7-11-11	Providing & erecting hot dipped galvanised cover suitable for perforated type Cable tray manufactured from 18 SWG (1.2 mm thick) GI sheet of 150 mm width & 20 mm height complete with necessary hardware.	m	369
7-11-12	Providing & erecting hot dipped galvanised cover suitable for perforated type Cable tray manufactured from 18 SWG (1.2 mm thick) GI sheet of 200 mm width & 20 mm height complete with necessary hardware.	m	455
7-11-13	Providing & erecting hot dipped galvanised cover suitable for perforated type Cable tray manufactured from 18 SWG (1.2 mm thick) GI sheet of 300 mm width & 20 mm height complete with necessary hardware.	m	626
7-11-14	Providing & erecting hot dipped galvanised cover suitable for perforated type Cable tray manufactured from 18 SWG (1.2 mm thick) GI sheet of 400 mm width & 20 mm height complete with necessary hardware.	m	797

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
7-11-15	Providing & erecting hot dipped galvanised cover suitable for perforated type Cable tray manufactured from 18 SWG (1.2 mm thick) GI sheet of 500 mm width & 20 mm height complete with necessary hardware.	m	969

Note 1) Standard accessories shall typically include :

a) 'Z' section support - 30 x 35 mm in size - 312 mm in length - 6 nos. support for one piece ladder of 2.5 m in length each.

b) Anchor fastener & nut bolts of adequate size - 16 nos. (2 nos. per support)

c) Coupler plates with hardware - 70 x 200 x 3 mm thick - 2 nos. for each piece of 2.5 m ladder complete with necessary accessories such as reducer, horizontal elbow & tee, up & down vertical elbow & bends, cross piece complete.

2) Provision for resting arrangement or support for perforated type cable tray shall be made separately as per required iron work.

3) Provision of cover for perforated type cable tray shall be made only where it is absolutely necessary and make sure for locking arrangement.

4) Both type of cable trays shall be earthed properly.

7.12 Dismantling

7-12-1	Dismantling the existing cables of all types & size up to 10 sq mm.	m	15
7-12-2	Dismantling the existing cables of all types & size above 10 sq mm up to 50 sq.mm.	m	23
7-12-3	Dismantling the existing cables of all types & size above 50 sq mm.	m	31
7-12-4	Refilling the holes for dismantled cables with cement mortar & finishing etc. complete	m	57
7-12-5	Dismantling the existing underground cable without damaging it with glands, cable end box including refilling the trench up to ground level and making coils complete.	m	96

Note 1) The rates for item no 7.12.1 to 7.12.5 are for dismantling and handing over to section office inclusive of transportation up to 25 km, between site and section office.

2) Item No 7.12.5 shall be used only when the cost of dismantled cable is more than the cost of excavation.

Chapter: 8
Over Head Systems (OH)

8.1 Steel Poles	(OH-PL)
8.2 Hot Dipped Galvanized Poles & High-Mast	(OH-HM)
8.3 Brackets	(OH-BKT)
8.4 Conductors	(OH-CON)
8.5 Insulators	(OH-INS)
8.6 Accessories	
8.7 Dismantling	

Chapter : 8 OVER HEAD SYSTEMS (OH)

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<i>8.1 Steel Poles (OH-PL)</i>			
8-1-1	Supplying and erecting steel tubular swaged pole 139.7 x 114.3 x 88.9 mm dia with 4.5x3.65x3.25 mm thickness (4.5+1.75+1.75 m) length respectively and total 8.0 m long with pole cap, base plate in provided foundation. (weight 101 kg) as per specification no. OH-PL/STP	Each	9168
8-1-2	Supplying and erecting steel tubular swaged pole 139.7 x 114.3 x 88.9 mm dia with 4.5x3.65x3.25 mm thickness (5+1.75+1.75 m) length respectively and total 8.5 m long with pole cap, base plate in provided foundation. (weight 109 kg.) as per specification no. OH-PL/STP	Each	9831
8-1-3 (New)	Supplying and erecting steel tubular swaged pole 139.7 x 114.3 x 88.9 mm dia with 4.5 x 3.65 x 3.25 mm thickness (5+2+2 m) length respectively and total 9 m long with pole cap, base plate in provided foundation (weight 113 kg) as per specification no. OH-PL/STP	Each	10295
8-1-4	Supplying and erecting steel tubular swaged pole 165.1 x 139.7 x 114.3 mm dia with 4.5 x 4.5 x 3.65 mm thickness (5+2+2 m) length respectively and total 9 m long with pole cap, base plate in provided foundation (weight 147 kg) as per specification no. OH-PL/STP	Each	12398
8-1-5	Supplying and erecting steel tubular swaged pole 165.1 x 139.7 x 114.3 mm dia with 4.5 x 4.5 x 3.65 mm. thickness (5+2.5+2.5 m) length respectively and total 10 m long with pole cap, base plate in provided foundation (weight 160 kg) as per specification no. OH-PL/STP	Each	13795
8-1-6	Supplying and erecting steel tubular swaged pole 165.1 x 139.7 x 114.3 mm dia with 4.5 x4.5 x3.65 mm thickness (5.60+2.7+2.7 m) length total 11 m long with pole cap, base plate in provided foundation (weight 175 kg.) as per specification no. OH-PL/STP	Each	15234
8-1-7	Supplying and erecting steel tubular swaged pole 165.1 x 139.7 x 114.3 mm dia with 5.4 x 4.5 x 3.65 mm thickness (5.8+3.1+3.1 m) length total 12 m long with pole cap, base plate in provided foundation (weight 208 kg.) as per specification no. OH-PL/STP	Each	18115
8-1-8	Supplying and erecting steel tubular swaged type welded pole with upper portion hydraulically bent swan neck, 165.1 x 139.7 x 114.3 mm dia with 4.5 x 4.50 x 3.65 mm thickness (5+2+3 m) respectively (net vertical height 9 m.) total length 10 m long with base plate in provided foundation. (weight 156.75 kg) as per specification no. OH-PL/STP	Each	15492
8-1-9	Supplying and erecting steel tubular swan neck swaged type welded pole with upper portion hydraulically bent , 165.1 x 139.7 x 114.3 mm dia with 4.5 x 4.5 x 3.65 mm thickness (5.6+2.7+2.7 m) respectively total (net vertical height 10 m.) 11 m long with base plate in provided foundation. (weight 175 kg) as per specification no. OH-PL/STP	Each	16868
8-1-10	Supplying and erecting rolled steel joist (girder) pole 125 x 70 mm (13.3 kg/m) with base plate in provided foundation as per specification no. OH-PL/RSJ	m	1056
8-1-11	Supplying and erecting rolled steel joist (girder) pole 150 x 80 mm/150 x75 mm (14.9 kg /m) with base plate in provided foundation as per specification no. OH-PL/RSJ	m	1156

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
8-1-12	Supplying and erecting rolled steel joist (girder) pole 175 x 85 mm (19.6 kg/m) with provided base plate in provided foundation as per specification no. OH-PL/RSJ	m	1442
8-1-13	Supplying and erecting rolled steel joist (girder) pole 100 x 116 mm (23 kg/m) with base plate in provided foundation as per specification no. OH-PL/RSJ	m	1658
8-1-14	Supplying and erecting rolled steel joist (girder) pole 200 x 100 mm (25.9 kg/m) with provided base plate in provided foundation as per specification no. OH-PL/RSJ	m	1843
8-1-15	Supplying and erecting rolled steel joist (girder) pole 152 x 152 mm (37.1 kg/m) with base plate in provided foundation as per specification no. OH-PL/RSJ	m	2528
8-1-16	Supplying and erecting G.I. pipe pole 'B' class 80 mm dia 6 m long with pole cap, base plate in provided foundation as per specification no. OH-PL/GIP	Each	5540
8-1-17	Supplying and erecting M.S. pipe pole 'B' class 80 mm dia 6 m long with pole cap, base plate in provided foundation as per specification no. OH-PL/GIP	Each	4584

Note As per contour of the site and position of different obstacles / layout the length of RSJ pole to be considered for each pole, also selection of size of pole shall be made on the basis of strength of pole which will decide its utility as normal, intermediate, cut point etc. The measurement sheet should be attached in estimate/bill. Necessary arrangement for earthing shall be provided.

8.2 Hot Dipped Galvanized Poles & High-Mast (OH-HM)

8-2-1	Supplying and erecting 12.5 m (clear height) motorized high-mast (Top -150mm, Bottom- 360mm) hot dipped galvanized material with average minimum thickness 65 micron, made from high tensile structure grade steel as per BSEN - 10025 S 355/E350 & 3mm thickness, with base plate 25 mm thick x OD 520 mm grade as per IS-2062, pole made in single section & submerge arc welded, with lowering & raising motorized unit, wire rope stainless steel 316 grade 2 nos., 7x19 construction 5mm, SG-DG U clamps, double drum with assembly 250 kg, 5x2.5 Sq.mm. flexible copper cable with lantern carriage assembly suitable for max. 12 nos. luminaires and its control gear box, lightning arrestor, arrangement for fixing aviation light, high-mast with serial number, factory inspection report/test report of high-mast should be provided as per specifications on provided foundation J type stud/bolts with necessary accessories complete as per specification no. OH-PL/HM (excluding luminaries)	Set	220625
-------	--	-----	--------

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
8-2-2	<p>Supplying and erecting 16 m (clear height) motorized high-mast (Top-150mm, Bottom- 360mm) hot dipped galvanized material with average minimum thickness 65 micron, made from high tensile structure grade steel as per BSEN -10025 S 355/E350 & 3 mm thickness, with base plate 25 mm thick x OD 520 mm grade as per IS-2062, pole made in single section & submerge arc welded, with lowering & raising motorized unit, wire rope stainless steel 316 grade 2 nos., 7x19 construction 5mm, SG-DG U clamps, double drum winch assembly 350 kg, 5x2.5 sq.mm flexible copper cable with lantern carriage assembly suitable for max. 12 nos. luminaires and its control gear box, lightning arrestor, arrangement for fixing aviation light, high-mast with serial number, factory inspection report/test report of high-mast should be provided as per specifications on provided foundation J type stud/bolts with necessary accessories complete. specification no. OH-PL/HM (excluding luminaries)</p>	Set	256003
8-2-3	<p>Supplying and erecting 16 m (clear height) motorized high-mast (Top-150mm, Bottom-410 mm) hot dipped galvanized material with average minimum thickness 65 micron, made from high tensile structure grade steel as per BSEN -10025 S 355/E350 & 3 mm thickness, with base plate 25 mm thick x OD 570 mm grade as per IS-2062, pole made in single section & submerge arc welded, with lowering & raising motorized unit, wire rope stainless steel 316 grade 2 nos., 7x19 construction 6 mm, SG-DG U clamps, double drum winch assembly 350 kg, 5x2.5 sq.mm flexible copper cable with lantern carriage assembly suitable for max. 16 nos. luminaires and its control gear box, lightning arrestor, arrangement for fixing aviation light, high-mast with serial number, factory inspection report/test report of high-mast should be provided as per specifications on provided foundation J type stud/bolts with necessary accessories complete. specification no. OH-PL/HM (excluding luminaries)</p>	Set	282687
8-2-4	<p>Supplying and erecting 20 m (clear height) motorized high-mast (Top-150mm, Bottom-410 mm) hot dipped galvanized material with average minimum thickness 65 micron, made from high tensile structure grade steel as per BSEN -10025 S 355/E350 & 3+3 mm thickness, with base plate 25 mm thick x OD 570 mm grade as per IS-2062, pole made in single section & submerge arc welded, with lowering & raising motorized unit, wire rope stainless steel 316 grade 2 nos., 7x19 construction 6 mm, SG-DG U clamps, double drum winch assembly 500 kg, 5x2.5 sq.mm flexible copper cable with lantern carriage assembly suitable for max. 16 nos. luminaires and its control gear box, lightning arrestor, arrangement for fixing aviation light, high-mast with serial number, factory inspection report/test report of high-mast should be provided as per specifications on provided foundation J type stud/bolts with necessary accessories complete specification no. OH-PL/HM (excluding luminaries)</p>	Set	331489

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
8-2-5	Supplying and erecting 20 m (clear height) motorized high-mast (Top-150mm, Bottom-460 mm) hot dipped galvanized material with average minimum thickness 65 micron, made from high tensile structure grade steel as per BSEN -10025 S 355/E350 & 3+4 mm thickness, with base plate 25 mm Thick x OD 670 mm grade as per IS-2062, pole made in single section & submerge arc welded, with lowering & raising motorized unit, wire rope stainless steel -316 grade 2 nos., 7x19 construction 6 mm, SG-DG U clamps, double drum winch assembly 500 kg, 5x2.5 sq.mm. flexible copper cable with lantern carriage assembly suitable for max. 16 nos. luminaires and its control gear box, lightning arrestor, arrangement for fixing aviation light, high-mast with serial number, factory inspection report/test report of high-mast should be provided as per specifications on provided foundation J type stud/bolts with necessary accessories complete. specification no. OH-PL/HM (excluding luminaries)	Set	377498
8-2-6	Supplying and erecting 25 m (clear height) motorized high-mast (Top-150mm, Bottom- 540 mm) hot dipped galvanized material with average minimum thickness 65 micron, made from high tensile structure grade steel as per BSEN -10025 S 355/E350 & 3+4+4 mm thickness, with base plate 25 mm thick x OD 730 mm grade as per IS-2062, pole made in single section & submerge arc welded, with lowering & raising motorized unit, wire rope stainless steel - 316 grade 2 nos., 7x19 construction 6 mm, SG-DG U clamps, double drum winch assembly 600 kg, 5x2.5 sq.mm flexible copper cable with lantern carriage assembly suitable for max. 16 nos. luminaires and its control gear box, lightning arrestor, arrangement for fixing aviation light, high-mast with serial number, factory inspection report/test report of high-mast should be provided as per specifications on provided foundation J type stud/bolts with necessary accessories complete. specification no. OH-PL/HM (excluding luminaries)	Set	423125
8-2-7	Supplying and erecting 25 m (clear height) motorized high-mast (Top-200mm, Bottom- 560 mm) hot dipped galvanized material with average minimum thickness 65 micron, made from high tensile structure grade steel as per BSEN -10025 S 355/E350 & 3+4+5 mm thickness, with base plate 25 mm thick x OD 730 mm grade as per IS-2062, pole made in single section & submerge arc welded, with lowering & raising motorized unit, wire rope stainless steel - 316 grade 2 nos., 7x19 construction 6 mm, SG-DG U clamps, double drum winch assembly 600 kg, 5x2.5 sq.mm flexible copper cable with lantern carriage assembly suitable for max. 16 nos. luminaires and its control gear box, lightning arrestor, arrangement for fixing aviation light, high-mast with serial number, factory inspection report/test report of high-mast should be provided as per specifications on provided foundation J type stud/bolts with necessary accessories complete. specification no. OH-PL/HM (excluding luminaries)	Set	488418
8-2-8	Supply and erecting 9m (clear height) Fixed type high-mast (Top-100mm, Bottom- 200mm) with hexagonal /round bracket and foundation bolts suitable for max. 4 nos. flood light fixtures on provided foundation as per specification no. OH-PL/OPL (excluding luminaires).	Set	33976
<u>Hot Dipped Galvanized Octagonal Poles</u>			
8-2-9	Providing & erecting 3 m high (clear height) galvanised octagonal pole with foundation bolts having bottom of 130 mm A/F, top 70 mm A/F on provided foundation as per specification no. OH-PL/OPL	Each	10506

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
8-2-10	Providing & erecting 4 m high (clear height) galvanised octagonal pole with foundation bolts having bottom of 130 mm A/F, top 70 mm A/F on provided foundation as per specification no. OH-PL/OPL	Each	11697
8-2-11	Providing & erecting 5 m high (clear height) galvanised octagonal pole with foundation bolts having bottom of 130 mm A/F, top 70 mm A/F on provided foundation as per specification no. OH-PL/OPL .	Each	12826
8-2-12	Providing & erecting 6 m high (clear height) galvanised octagonal pole with foundation bolts having bottom of 130 mm A/F, top 70 mm A/F on provided foundation as per specification no. OH-PL/OPL	Each	15067
8-2-13	Providing & erecting 7 m high (clear height) galvanised octagonal pole with foundation bolts having bottom of 130 mm A/F, top 70 mm A/F on provided foundation as per specification no. OH-PL/OPL	Each	17094
8-2-14	Providing & erecting 7 m high (clear height) galvanised octagonal pole with foundation bolts having bottom of 200 mm A/F, top 100 mm A/F on provided foundation as per specification no. OH-PL/OPL	Each	23692
8-2-15	Providing & erecting 8 m high (clear height) galvanised octagonal pole with foundation bolts having bottom of 135 mm A/F, top 70 mm A/F on provided foundation as per specification no. OH-PL/OPL	Each	19220
8-2-16	Providing & erecting 9 m high (clear height) galvanised octagonal pole with foundation bolts having bottom of 155 mm A/F, top 70 mm A/F on provided foundation as per specification no. OH-PL/OPL	Each	21691
8-2-17	Providing & erecting 9 m high (clear height) galvanised octagonal pole with foundation bolts having bottom of 200 mm A/F, top 100 mm A/F on provided foundation as per specification no. OH-PL/OPL	Each	30033
8-2-18	Providing & erecting 10 m high (clear height) galvanised octagonal pole with foundation bolts having bottom of 175 mm A/F, top 70 mm A/F on provided foundation as per specification no. OH-PL/OPL	Each	24662
8-2-19	Providing & erecting 11 m high (clear height) galvanised octagonal pole with foundation bolts having bottom of 210 mm A/F, top 90 mm A/F on provided foundation as per specification no. OH-PL/OPL	Each	29984
8-2-20	Providing & erecting 12 m high (clear height) galvanised octagonal pole with foundation bolts having bottom of 240 mm A/F, top 90 mm A/F on provided foundation as per specification no. OH-PL/OPL	Each	34509
8-2-21	Providing and erecting galvanised 1000mm single arm sword type bracket with FRP dome and ball as per specification no. OH-PL/PBKT	Each	2718
8-2-22	Providing and erecting galvanised 1000mm double arm sword type bracket with FRP dome and ball as per specification no. OH-PL/PBKT	Each	4468

Highmast Control Panels

8-2-23	Supplying and erecting outdoor stand mounted feeder pillar for high-mast of the same manufacturer with 32A TPN MCB incomer , 24hr astronomical time switch with minimum 5 years battery backup, IP 54 and IK10 protection, 25 A TP contactor for automatic switching of luminaires, 2 no. 9A contactors and raise/lower push button, and provision for termination of adequate size of incoming and outgoing cables complete erected in min. 14 SWG CRCA sheet box with supporting angles, self lock, gasket and slanting top erected on CC foundation complete.	Job	29707
--------	---	-----	-------

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
8-2-24	Supplying and erecting outdoor stand mounted feeder pillar for high-mast of the same manufacturer with 63A TPN MCB incomer , 24hr astronomical time switch with minimum 5 Years battery backup, , IP 54 and IK10 protection, 45 A TP contactor for automatic switching of luminaires, 2 no 9A contactors and raise/lower push button, and provision for termination of adequate size of incoming and outgoing cables complete erected in min. 14 SWG CRCA sheet box powder coated with supporting angles, self lock, gasket and slanting top erected on CC foundation complete.	Job	32928

Note For item no. 8-2-23 & 8-2-24 rates are inclusive of foundation.

8.3 Brackets (OH-BKT)

8-3-1	Supplying & erecting MS pole bracket for guarding/LT OH line , fabricated from angle iron 50x50x6mm and 550mm long for necessary nos. of provided insulators , and erecting on pole with 50x6mm clamp complete as per specification no. OH-PL/BKT	Each	434
8-3-2	Supplying & erecting MS pole bracket for guarding/LT OH line , fabricated from angle iron 50x50x6mm and 1100mm long for necessary nos. of provided insulators , and erecting on pole with 50x6mm clamp complete as per specification no. OH-PL/BKT	Each	592
8-3-3	Supplying & erecting MS pole bracket for guarding/LT OH line , fabricated from ISM channel 75x40x6mm and 550mm long for necessary nos. of provided insulators and erecting on pole with 50x6mm clamp complete as per specification no. OH-PL/BKT	Each	525
8-3-4	Supplying & erecting MS pole bracket for guarding/LT OH line , fabricated from ISM channel 75x40x6mm and 1100mm long for necessary nos. of provided insulators and erecting on pole with 50x6mm clamp complete as per specification no. OH-PL/BKT	Each	836
8-3-5	Supplying & erecting MS pole bracket for LT OH conductor fabricated from 65x65x6 mm section, 550mm long for necessary nos. of provided insulators and erecting on pole with 50x6mm clamp complete as per specification no. OH-PL/BKT	Each	496
8-3-6	Supplying & erecting MS pole bracket for LT OH conductor fabricated from 65x65x6 mm section, 1100mm long for necessary nos. of provided insulators and erecting on pole with 50x6mm clamp complete as per specification no. OH-PL/BKT	Each	844
8-3-7	Supplying & erecting pole bracket for OH conductor fabricated from ISM channel, 75x40x6mm, 550mm long for necessary nos. of provided insulators and erecting on pole with 50x6mm clamp complete as per specification no. OH-PL/BKT	Each	453
8-3-8	Supplying & erecting pole bracket for OH conductor fabricated from ISM channel, 75x40x6mm 1100mm long for necessary nos. of provided insulators and erecting on pole with 50x6mm clamp complete as per specification no. OH-PL/BKT	Each	800
8-3-9	Supplying & erecting pole bracket for OH conductor fabricated from ISM channel, 75x40x6mm, 550mm long for necessary nos. of provided insulators and welded with extension channel pieces of same size 300 mm in length and erecting on pole with 50x6mm clamp complete as per specification no. OH-PL/BKT	Each	609

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
8-3-10	Supplying & erecting pole bracket fabricated from ISM channel of size 75x40x6mm, 1100mm long for necessary nos. of provided insulators and welded with extension channel pieces of same size 300 mm in length and erecting on pole with 50x6mm clamp complete as per specification no. OH-PL/BKT	Each	853
8-3-11	Supplying & erecting 100 x 50 x 6 mm with 4.7 mm thick web and 7.5 mm thick flange channel iron cross arm of suitable length for 2.4 m wide DP structure and erecting on DP with 50x6mm clamp complete as per specification no. OH-PL/BKT	Each	1910
Note	For distance exceeding 2.4m between two pole structure add Rs. 500/- per meter for extra channel length.		
8-3-12	Supplying and erecting V cross arm with ISM channel of 75x40x6mm for 11kV HT OH line with arrangement to fix insulator at 45mm from the end & horizontal distance between insulators 1220mm bent at angle of 60 degree keeping base 305mm and the total vertical height of V cross arm as 460mm, and fixed on pole with MS clamp of 80x10 mm, nut bolts, washers complete as per specification no. OH-PL/VCA	Each	1220
8-3-13	Supplying and erecting V cross arm with ISM channel of 100x50x6mm or 22/33kV HT OH line with arrangement to fix insulator at 45mm from the end & horizontal distance between insulators 1530mm bent at angle of 60 degree keeping base 310mm and the total vertical height of V cross arm as 460mm, and fixed on pole with MS clamp of 80x10 mm, nut bolts, washers complete as per specification no. OH-PL/VCA	Each	1726
8-3-14	Supplying and erecting 75x40 x6mm with 4.4mm thick web and 7.3mm thick flange channel (top pin) with clamp of suitable length so as to maintain vertical clearance of 1065mm for 11kV, 1320mm for 22kV between insulators for erection of top pin insulators complete as per specification no. OH-PL/VCA	Each	573
8-3-15	Supplying and erecting bracket for guarding of HT OH Line , made from channel iron 1600mm in length and 75x40x6mm . erected on pole complete as per specification no. OH-PL/VCA	Each	1061
8-3-16	Supplying and erecting bracket for guarding of HT OH Line , made from channel iron 1600mm in length and 65x65x6mm thick erected on pole as per specification no. OH-PL/VCA	Each	957

D. P. Structure

8-3-17	Supplying & erecting single pole cut point channel set of for 11kV HT OH line two channel of size 100x50x6mm 1.6m long having stud angle of size 50x50x6mm 1.5m long with necessary clamps, nut bolts etc. complete as per drawing.	Each	4538
--------	--	------	------

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
8-3-18	Supplying & erecting inline D.P. Structure for 11/0.415kV, 63kVA Transformer with RSJ pole 2 nos. of size 100x116mm x 11m long with suitable distribution box of CRCA sheet 16 SWG with 4 pole MCCB 100A as incomer & 6 nos. 63A kitkat/MCCB for outing circuits. Transformer D.P. Structure includes the A.B. switch 200A, D.O. fuse set & L.A. set. 2 nos. top channel of size 100x50mm for erection of A.B. Switch & 2 nos. base channel of size 100x50mm for erecting Transformer channel of size 75x40mm for erecting D.O. fuse set, L.A., A.B. switch handle etc. Angle of size 50x50x6mm for erecting distribution box, Transformer belt etc. as per drawing (min. 124 Kg. iron work) with necessary clamps, Nut-bolts. V cross arm, top clip, insulators etc. with caution board & barbed wire, D.P. structure shall be erected in c.c. foundation complete.	Each	127893
8-3-19	Supplying & erecting inline D. P. Structure for 11/0.415 kV, 100 kVA Transformer with R.S.J. Pole 2 Nos. of size 100 x 116 mm x 11 Mtr. Long with suitable Distribution Box of C.R.C.A. Sheet 16 SWG with 4 Pole MCCB 200 Amps as incomer & 6 Nos. 100 Amps Kitkat / MCCB for out going circuits. Transformer D.P. Structure includes the A. B. Switch 200 Amps, D.O. fuse Set & L.A. Set. 2 Nos. of Top channel of size 100 mmx 50 mm for erection of A.B. Switch & 2 Nos. Base channel of size 100 mm x 50 mm for erecting Transformer Channel of size 75 x40 mm for erecting D.O. Fuse Set, L.A., A.B. Switch handle etc. Angle of size 50 x 50 x6 mm for erecting Distribution Box , Transformer Belt etc.as per drawing (min. 124 Kg. iron work) with necessary clamps, Nut-bolts. V cross arm, top clip, insulators etc. complete with caution board & barbed wire, D.P. Structure shall be erected in c.c. foundation complete	Each	138118
8-3-20	Supplying & erecting inline D. P. Structure for 11/0.415 kV, 200 kVA Transformer with R.S.J. Pole 2 Nos. of size 100 x 116 mm x 11 Mtr. Long with suitable Distribution Box of C.R.C.A. Sheet 16 SWG with 4 Pole MCCB 300 Amps as incomer & 6 Nos. 100 Amps Kitkat / MCCB for out going circuits. Transformer D.P. Structure includes the A. B. Switch 200 Amps, D.O. fuse Set & L.A. Set. 2 Nos of Top channel of size 100 mmx 50 mm for erection of A.B. Switch & 2 Nos. Base channel of size 100 mm x 50 mm for erecting Transformer Channel of size 75 x40 mm for erecting D.O. Fuse Set, L.A., A.B. Switch handle etc. Angle of size 50 x 50 x6 mm for erecting Distribution Box , Transformer Belt etc.as per drawing (min. 124 Kg. iron work) with necessary clamps, Nut-bolts. V cross arm, top clip, insulators etc. complete with caution board & barbed wire. D.P. Structure shall be erected in c.c. foundation complete.	Each	150723
8-3-21	Supplying & erecting inline cut point end pole D. P. Structure for 11/0.415 kV, 63 kVA Transformer with R.S.J. Pole 2 Nos. of size 100 x 116 mm x 11 Mtr. Long with suitable Distribution Box of C.R.C.A. Sheet 16 SWG with 4 Pole MCCB 100 Amps as incomer & 6 Nos. 63 Amps Kitkat /MCCB for outing circuits. Transformer D.P. Structure includes the A. B. Switch 200 Amps, D.O. fuse Set & L.A. Set. 2 Nos. Top channel of size 100 mmx 50 mm for erection of A.B. Switch & 2 Nos. Base channel of size 100 mm x 50 x mm for erecting Transformer. Channel of size 75 x40 mm for erecting D.O. Fuse Set, L.A., A.B. Switch handle etc. Angle of size 50 x 50 x6 mm for erecting Distribution Box, Transformer Belt etc. as per drawing (min. 176 Kg. iron work) with necessary clamps, Nut-bolts. V cross arm, top clip, insulators etc. complete with caution board & barbed wire. D.P. Structure shall be erected in c.c. foundation complete.	Each	137852

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
8-3-22	Supplying & erecting inline cut point end pole D. P. Structure for 11/0.415 kV, 100 kVA Transformer with R.S.J. Pole 2 Nos. of size 100 x 116 mm x 11 Mtr. Long with suitable Distribution Box of C.R.C.A. Sheet 16 SWG with 4 Pole MCCB 200 Amps as incomer & 6 Nos.100 Amps Kitkat /MCCB for out going circuits. Transformer D.P. Structure includes the A. B. Switch 200 Amps, D.O. fuse Set & L.A. Set. 2 Nos. Top channel of size 100 mmx 50 mm for erection of A.B. Switch & 2 Nos. Base channel of size 100 mm x 50 x mm for erecting Transformer Channel of size 75 x40 mm for erecting D.O. Fuse Set, L.A., A.B. Switch handle etc. Angle of size 50 x 50 x6 mm for erecting Distribution Box, Transformer Belt etc. as per drawing (min. 176 Kg. iron work) with necessary clamps, Nut-bolts. V cross arm, top clip, insulators etc. complete with caution board & barbed wire. D.P. Structure shall be erected in c.c. foundation complete.	Each	148077
8-3-23	Supplying & erecting inline cut point end pole D. P. Structure for 11/0.415 kV, 200 KVA Transformer with R.S.J. Pole 2 Nos. of size 100 x 116 mm x 11 Mtr. Long with suitable Distribution Box of C.R.C.A. Sheet 16 SWG with 4 Pole MCCB 400 Amps as incomer & 6 Nos. 200 Amps Kitkat / MCCB for out going circuits. Transformer D.P. Structure includes the A. B. Switch 200 Amps, D.O. fuse Set & L.A. Set. 2 Nos. Top channel of size 100 mmx 50 mm for erection of A.B. Switch & 2 Nos. Base channel of size 100 mm x 50 x mm for erecting Transformer. Channel of size 75 x40 mm for erecting D.O. Fuse Set, L.A., A.B. Switch handle etc. Angle of size 50 x 50 x6 mm for erecting Distribution Box , Transformer Belt etc.as per drawing (min. 176 Kg. iron work) with necessary clamps, Nut-bolts. V cross arm, top clip, insulators etc. complete with caution board & barbed wire. D.P. Structure shall be erected in c.c. foundation complete.	Each	157815
8-3-24	Supplying & erecting end pole D. P. Structure for 11/0.415 kV, 63 kVA Transformer with R.S.J. Pole 2 Nos. of size 100 x 116 mm x 11 Mtr. Long with suitable Distribution Box of C.R.C.A. Sheet 16 SWG with 4 Pole MCCB 100 Amps as incomer & 6 Nos. 63 Amps Kitkat / MCCB for out going circuits. Transformer D.P. Structure includes the A. B. Switch 200 Amps, D.O. fuse Set & L.A. Set. 2 Nos. Top channel of size 100 mmx 50 mm for erection of A.B. Switch & 2 Nos. Base channel of size 100 mm x 50 x mm for erecting Transformer. Channel of size 75 x40 mm for erecting D.O. Fuse Set, L.A., A.B. Switch handle etc. Angle of size 50 x 50 x6 mm for erecting Distribution Box , Transformer Belt etc.as per drawing (min. 124 Kg. iron work) with necessary clamps, Nut-bolts. V cross arm, top clip, insulators etc. complete with caution board & barbed wire. D.P. Structure shall be erected in c.c. foundation complete.	Each	132004
8-3-25	Supplying & erecting end pole D. P. Structure for 11/0.415 kV, 100 kVA Transformer with R.S.J. Pole 2 Nos. of size 100 x 116 mm x 11 Mtr. Long with suitable Distribution Box of C.R.C.A. Sheet 16 SWG with 4 Pole MCCB 200 Amps as incomer & 6 Nos.100 Amps Kitkat / MCCB for out going circuits. Transformer D.P. Structure includes the A. B. Switch 200 Amps, D.O. fuse Set & L.A. Set. 2 Nos. Top channel of size 100 mmx 50 mm for erection of A.B. Switch & 2 Nos. Base channel of size 100 mm x 50 x mm for erecting Transformer. Channel of size 75 x40 mm for erecting D.O. Fuse Set, L.A., A.B. Switch handle etc. Angle of size 50 x 50 x6 mm for erecting Distribution Box , Transformer Belt etc.as per drawing (min. 124 Kg. iron work) with necessary clamps, Nut-bolts. V cross arm, top clip, insulators etc. complete with caution board & barbed wire. D.P. Structure shall be erected in c.c. foundation complete.	Each	144334

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
8-3-26	Supplying & erecting end pole D. P. Structure for 11/0.415 kV, 200 kVA Transformer with R.S.J. Pole 2 Nos. of size 100mm x 116 mm x 11 m Long with suitable Distribution Box of C.R.C.A. Sheet 16 SWG with 4 Pole MCCB 400 Amps as incomer & 6 Nos.200 Amps Kitkat / MCCB for out going circuits. Transformer D.P. Structure includes the A. B. Switch 200 Amps, D.O. fuse Set & L.A. Set. 2 Nos. Top channel of size 100 mmx 50 mm for erection of A.B. Switch & 2 Nos. Base channel of size 100 mm x 50 x mm for erecting Transformer. Channel of size 75 x40 mm for erecting D.O. Fuse Set, L.A., A.B. Switch handle etc. Angle of size 50 x 50 x6 mm for erecting Distribution Box , Transformer Belt etc.as per drawing (min. 124 Kg. iron work) with necessary clamps, Nut-bolts. V cross arm, top clip, insulators etc. complete with caution board & barbed wire. D.P. Structure shall be erected in c.c. foundation complete.	Each	156939

8.4 Conductors (OH-CON)

8-4-1	Supplying and erecting all aluminium stranded conductors 7/1.96 mm complete. (Rose) (58 kg/km) as per specification No. OH-CON/AAC	km	16956
8-4-2	Supplying and erecting all aluminium stranded conductors 7/2.21 mm. complete. (Gnat) (73.77kg/km) as per specification No. OH-CON/AAC	km	22601
8-4-3	Supplying and erecting all aluminium stranded conductors 7/2.48 mm complete. (Iris) (91.8 kg/km) as per specification no. OH-CON/AAC	km	26109
8-4-4	Supplying and erecting all aluminium stranded conductors 7/2.78 mm complete. (Pansy) (115.8 kg/km) as per specification No. OH-CON/AAC	km	32085
8-4-5	Supplying and erecting all aluminium stranded conductors 7/3.10 mm. complete. (Ant.) (145.0 kg/km) as per specification No. OH-CON/AAC	km	40014
8-4-6	Supplying and erecting ACSR conductor of size 6/1-2.11 mm complete. (squirrel) (85kg/km) as per specification No. OH-CON/ACSR	km	20612
8-4-7	Supplying and erecting ACSR conductor of size 6/1-2.59 mm complete. (Weasel) (127.7 kg/km) as per specification No. OH-CON/ACSR	km	26907
8-4-8	Supplying and erecting ACSR conductor of size 6/1-3.60 mm complete. (Ferret) (171.3 kg/km) as per specification No. OH-CON/ACSR	km	38140
8-4-9	Supplying and erecting ACSR conductor of size 6/1-3.66 mm complete. (Mink) (255 kg/km) as per specification No. OH-CON/ACSR	km	58167
8-4-10	Supplying and erecting ACSR conductor of size - 6/1-4.09 mm (Raccoon) complete. (318.00 kg/km) as per specification No. OH-CON/ACSR	km	75744
8-4-11	Supplying and erecting ACSR conductor of size - 6/1-4.72 mm (Dog) complete. (394.00 kg/km) as per specification No. OH-CON/ACSR	km	94767

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>A. B. Cable</u>			
8-4-12	Supplying and erecting 3 phase 4 core 16 sq.mm. (3x16+1x25) Aerial bunched aluminium cable along with necessary accessories for LT distribution on provided LT pole as per specification no. OH-CBL/ABC	m	116
8-4-13	Supplying and erecting 3 phase 4 core 25 sq.mm. (3x25+1x25) Aerial bunched aluminium cable along with necessary accessories for LT distribution on provided LT pole as per specification no. OH-CBL/ABC	m	155
8-4-14	Supplying and erecting 3 phase 4 core 35 sq.mm. (3x35+1x25) Aerial bunched aluminium cable along with necessary accessories for LT distribution on provided LT pole as per specification no. OH-CBL/ABC	m	158
8-4-15	Supplying and erecting 3 phase 4 core 50 sq.mm. (3x50+1x35) Aerial bunched aluminium cable along with necessary accessories for LT distribution on provided LT pole as per specification no. OH-CBL/ABC	m	204
8-4-16	Supplying and erecting 3 phase 4 core 70 sq.mm. (3x70+1x50) Aerial bunched aluminium cable along with necessary accessories for LT distribution on provided LT pole as per specification no. OH-CBL/ABC	m	366
8-4-17	Supplying and erecting 3 phase 4 core 95 sq.mm. (3x95+1x70) Aerial bunched aluminium cable along with necessary accessories for LT distribution on provided LT pole as per specification no. OH-CBL/ABC	m	487
8-4-18	Supplying and erecting 3 phase 5 core 16 sq.mm. (3x16+1x25+1x16) Aerial bunched aluminium cable along with necessary accessories for LT distribution on provided LT pole as per specification no. OH-CBL/ABC	m	143
8-4-19	Supplying and erecting 3 phase 5 core 25 sq.mm. (3x25+1x25+1x16) Aerial bunched aluminium cable along with necessary accessories for LT distribution on provided LT pole as per specification no. OH-CBL/ABC	m	180
8-4-20	Supplying and erecting 3 phase 5 core 35 sq.mm. (3x35+1x25+1x16) Aerial bunched aluminium cable along with necessary accessories for LT distribution on provided LT pole as per specification no. OH-CBL/ABC	m	223
8-4-21	Supplying and erecting 3 phase 5 core 50 sq.mm. (3x50+1x35+1x16) Aerial bunched aluminium cable along with necessary accessories for LT distribution on provided LT pole as per specification no. OH-CBL/ABC	m	215
8-4-22	Supplying and erecting 3 phase 5 core 70 sq.mm. (3x70+1x50+1x16) Aerial bunched aluminium cable along with necessary accessories for LT distribution on provided LT pole as per specification no. OH-CBL/ABC	m	301
8-4-23	Supplying and erecting 3 phase 5 core 95 sq.mm. (3x95+1x50+1x16) Aerial bunched aluminium cable along with necessary accessories for LT distribution on provided LT pole as per specification no. OH-CBL/ABC	m	512
8-4-24	Supplying and erecting 6 Way AB cable distribution box on provided pole with necessary accessories as per specification no. OH-ABC/JBS	Each	1312
8-4-25	Supplying and erecting 9 Way AB cable distribution box on provided pole with necessary accessories as per specification no. OH-ABC/JBS	Each	1594
8-4-26	Supplying and erecting 12 Way AB cable distribution box on provided pole with necessary accessories as per specification no. OH-ABC/JBS	Each	1875

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>8.5 Insulators (OH-INS)</u>			
8-5-1	Supplying and erecting pin type LT medium insulator 100mmx 62mm dia. with suitable G.I. spindle, nut, bolts complete.	Each	72
8-5-2	Supplying and erecting porcelain shackle type LT medium insulator 75x115mm dia. with G.I. (shackle) strips, nuts and bolts, complete.	Each	67
8-5-3	Supplying and erecting porcelain shackle type LT medium insulator, 50x89mm dia. with G.I. (shackle) strips, nuts and bolts, complete.	Each	63
8-5-4	Supplying and erecting aluminium bobbin with G.I. (shackle) strip, nuts complete.	Each	93
8-5-5	Providing and fixing GI earthing stud with necessary materials .	Each	63
8-5-6	Supplying and erecting porcelain disc type insulator 45KN with necessary hardware suitable for 11kV line, complete as per specification no. OH-INS/DI	Each	1158
8-5-7	Supplying and erecting porcelain disc type insulator 70KN with necessary hardware suitable for 22kV line, complete as per specification no. OH-INS/DI	Each	1553
8-5-8	Supplying and erecting porcelain disc type insulator 70 KN with necessary hardware suitable for 33kV line complete as per specification no. OH-INS/DI	Each	1908
8-5-9	Supplying and erecting porcelain pin type insulator with GI pin suitable for 11kV line, complete as per specification no. OH-INS/PN	Each	283
8-5-10	Supplying and erecting porcelain pin type insulator suitable for 22kV line with GI pin, complete as per specification no. OH-INS/PN	Each	454
8-5-11	Supplying and erecting porcelain pin type insulator with GI pin suitable for 33kV line, complete as per specification no. OH-INS/PN	Each	827
8-5-12	Supplying and erecting porcelain post type insulator with nut bolts suitable for 11kV line, complete as per specification no. OH-INS/PST	Each	611
8-5-13	Supplying and erecting porcelain post type insulator with nut bolts suitable for 22kV line, complete as per specification no. OH-INS/PST	Each	760
8-5-14	Supplying and erecting porcelain post type insulator with nut bolts suitable for 33kV line, complete as per specification no. OH-INS/PST	Each	967
8-5-15	Supplying and erecting distribution class, 11 kV thyrite type lightning arrester with nut bolts, on provided MS channel as per specification no. OH-INS/LA	Each	1223
8-5-16	Supplying and erecting distribution class, 22 kV thyrite type lightning arrester with nut bolts, on provided MS channel as per specification no. OH-INS/LA	Each	1386
<u>8.6 Accessories</u>			
8-6-1	Supplying and erecting G.I. stay set for poles , including loop insulators at inaccessible height with anchor plate 300x300x6mm., straining screws, G.I. stay wire 7/10 SWG , G.I. stay rod 20mmx1.8m length and pole clamps duly erected in provided cement concrete foundation complete.	Each	1528

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
8-6-2	Supplying and erecting G.I. stay set for poles , including loop insulators at inaccessible height with anchor plate 300x300x6 mm., straining screws, G.I. stay wire 7/8 SWG , G.I. stay rod 20mmx1.8m length and pole clamps duly erected in provided cement concrete foundation complete.	Each	1825
8-6-3	Supplying and erecting G.I. fly stay set for pole including straining screw, G.I. stay wire, 7/10 SWG (for to 15m long) with pole clamp, made of 50x6mm MS flat, erected on provided RSJ pole complete. (Add. Rs. 25/- per m for extra length beyond 15 m)	Each	2174
8-6-4	Supplying and erecting G.I. self stay set for pole , including anchor plate 300x300x6mm straining screw, loop-insulator, G.I. stay wire 7/10 SWG , G.I. stay rod 20mmx1.8m long, erected with pole clamps along with angle iron bracket of 50x50x6mm and one meter long fixed to pole at suitable height with suitable MS clamps duly erected in provided C.C. foundations complete.	Each	1822
8-6-5	Supplying and erecting G.I. wall hook , 10 to 15mm dia and overall length 250mm including grouting, cement plastering etc. complete.	Each	61
8-6-6	Supplying and erecting pipe post made from G.I. pipe 40mm dia 3m overall length, with two bends, fixed to pipe at the top & bottom, round bended erected with MS flat welded MS bolts 15cm long duly grouted in wall with necessary clamps, nuts and bolts etc. duly painted with two coats of aluminium paint complete.	Each	1342
8-6-7	Supplying and erecting pipe post made from G.I. pipe 25mm dia 3m overall length, with two bends, fixed to pipe at the top & bottom, round bended erected with MS flat welded MS bolts 15cm long duly grouted in wall with necessary clamps, nuts and bolts etc. duly painted with two coats of aluminium paint complete.	Each	1199
8-6-8	Supplying and erecting guarding loop using G.I. wire no. 8SWG for LT OH line of horizontal formation erected with 20SWG G.I. wire as binding wire and 50mm section on each side complete.	Each	60
8-6-9	Supplying and erecting fibre/PVC spacers for LT overhead line 3 to 5 conductors complete erected.	Each	133
8-6-10	Supplying and erecting pole clamp made from 50x6mm MS flat for pole or pipe, post erected with 15mm bolts and nuts duly painted with one coat of red oxide and two coats of aluminium paint complete.	Each	265
8-6-11	Supplying and erecting pole clamp made from 50x10mm MS flat for pole or pipe, post erected with 15mm bolts and nuts duly painted with one coat of red oxide and two coats of aluminium paint complete.	Each	286
8-6-12	Supplying and erecting 'D' type pole clamps , fabricated from 50x6mm MS flat with 15mm bolts and nuts fixed to steel tubular pole duly painted with one coat of red oxide and two coats of aluminium paint complete.	Each	152
8-6-13	Supplying and erecting C type (half) clamps for pole made from 50x6mm flat for fixing cross arms by means of 15mm bolts and nuts painted with one coat of red oxide and two coats of aluminium paint complete.	Each	152
8-6-14	Supplying and erecting C type (half) clamps for pole made from 50x10mm flat for fixing cross arms by means of 15mm bolts and nuts painted with one coat of red oxide and two coats of aluminium paint complete.	Each	188
8-6-15	Supplying and fixing MS base plate 30x30x0.6cm size fixed to the pole base either by welding 12mm dia fixed at position.	Each	477

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
8-6-16	Supplying and fixing MS round base plate 25cm dia and 10mm thick fixed to pole welded and fixed at position.	Each	479
8-6-17	Supplying and fixing MS pole cap fabricated from MS pipe or cast iron fixed to pole by means of set screws and 75mm deep.	Each	124
8-6-18	Supplying and erecting guarding lace for HT OH line with 8SWG G.I. wire to protect the HT OH line with binding wire of 20SWG G.I. wire for 75mm section on either side.	Each	52

8.7 Dismantling

8-7-1	Dismantling the existing pole up to 6 m height with brackets, clamps, insulators, stay from the c.c. foundation and making the site clear by refilling the pits with excavated materials and bringing it to the ground level.	Each	568
8-7-2	Dismantling the existing pole above 6 m height with brackets, clamps, insulators, stay from the c.c. foundation and making the site clear by refilling the pits with excavated materials and bringing it to the ground level.	Each	938
8-7-3	Dismantling the existing overhead line including G.I. wires of all sizes without damaging & making the coils in suitable sizes.	km	1339
8-7-4	Dismantling the existing lightning arrester set, insulator from DP structure complete.	Job	97

Chapter: 9
Earthing (EA)

9.1 Plate, Pipe type Earthing

(EA-EP)

9.2 Accessories

(EA-EP)

9.3 Lightning Conductor and Accessories

Chapter : 9 EARTHING (EA)

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)

9.1 Plate, Pipe type Earthing (EA-EP)

9-1-1	Providing earthing with galvanized iron earth plate size 60 x 60 x 0.6 cm complete with all materials, testing & recording the results as per specification no. EA-EP	Each	4714
9-1-2	Providing earthing with copper earth plate size 30 x 30 x 0.315 cm complete with all materials, testing & recording the results as per specification no. EA-EP	Each	6486
9-1-3	Providing earthing with galvanized iron earth plate size 60 x 60 x 0.6 cm with funnel with a wire mesh for watering and brick masonry block C.I. cover complete with all materials, testing & recording the results as per specification no. EA-EP	Each	6055
9-1-4	Providing pipe type earthing with 40mm. dia. G.I. pipe or 20 mm dia. G.I. Rod complete with all materials testing and recording the results as per specification no. EA-EP	Each	1500
9-1-5	Supplying, installation and testing of maintenance free earthing comprising of Electrode of 17.2 mm diameter Low Carbon Steel with 250 micron molecul copper bonded earthing rod of Length 3m along with 25 kg Carbon based environment friendly back fill ground enhancing compound required to fill up the excavated earth with required quantity complete, and recording the results Specification no. EA-MOBI	Each	13805
9-1-6	Providing earthing with copper earth plate size 60 x 60 x 0.315 cm with funnel with a wire mesh for watering and brick masonry block C.I. cover with minimum 25 kg Carbon based environment friendly back fill Ground Enhancing compound complete with all materials, testing & recording the results as per specification no ESE -LA	Each	15734

- Note**
- 1) Resistivity of the soil shall be checked and no. of back filling ground enhancing compound bags shall be used as per guidelines elaborated in specification No.
 - 2) Additional G.I. pipe required from earth pit and GI / Copper wire / strip more than 8 m in length from earth pit to installation to be provided separately.

9.2 Accessories

9-2-1	Supplying and erecting aluminium strip of high purity required sizes used for earthing on wall and/or any other purpose with necessary aluminium clamps fixed on wall painted with bituminous paint with joints required as per specification no EA-EP .	kg	407
9-2-2	Supplying and erecting copper strip of high purity required size used for earthing on wall and/or any other purpose with necessary copper clamps fixed on wall painted with bituminous paint with joints required. As per specification no. EA-EP .	kg	883
9-2-3	Supplying and erecting GI strip of high purity required size used for earthing on wall and/or any other purpose with necessary GI clamps fixed on wall painted with bituminous paint with joints required. As per specification no EA-EP .	kg	222

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
9-2-4	Supplying and erecting annealed bare copper wire of high purity of required sizes used for earthing on wall with necessary copper clamps fixed on wall/cable/conduit with screws complete.	kg	844
9-2-5	Supplying and erecting GI wire of high purity of required sizes used for earthing or any other purposes on wall with necessary G. I. Clamps fixed on wall/cable/conduit with screws complete.	kg	155
9-2-6	Supplying and erecting aluminium strip of required sizes used for earthing on wall and/or any other purpose with necessary aluminium clamps fixed on wall with insulating and non-corrosive bond with required joints. As per specification no. EA-EP.	kg	640
9-2-7	Supplying and erecting copper strip of required size used for earthing on wall and/or any other purpose with necessary copper clamps fixed on wall painted with insulating and non-corrosive bond with required joints As per specification no. EA-EP.	kg	1164
9-2-8	Supplying and erecting GI strip of required size used for earthing on wall and/or any other purpose with necessary GI clamps fixed on wall painted with insulating and non-corrosive bond with required joints As per specification no. EA-EP.	kg	452

9.3 Lightning Conductor and Accessories

9-3-1	Supplying & erecting conventional spike type air termination suitable to carry lightning stroke made up of heavy gauge 40 mm dia copper pipe of standard length with 5 Nos. copper spikes fixed on copper ball as air terminals duly threaded in copper pipe erected on provided foundation complete.	Each	6079
9-3-2	Providing and back filling ground enhancing compound 25 kg bag complete.	Each	1242

Chapter: 10
Sub Stations (SS)

10.1 Non-sealed transformers	SS-TR-NSL
10.2 Hermetically Sealed Transformer.	SS-TR-SL
10.3 Single Phase Sealed Transformer	SS-TR-SL
10.4 Compact Substation	SS-TR-SL
10.5 Dry type transformer	SS-TR
10.6 Accessories	
10.7 Dismantling	

Chapter No.10 Sub Stations

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>10.1 Non-sealed transformer</u>			
10-1-1	Supplying, installing, testing & commissioning 3 phase, 11/0.433 kV, 50 Hz., 25 kVA Mineral oil immersed and naturally cooled outdoor type, aluminium wound Non-sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40 °C by thermometer in oil and 45 °C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with standard accessories complete with test certificate with losses below 190 Watts at 50% load, 635 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-NSL.	Each	91866
10-1-2	Supplying, installing, testing & commissioning of 3 phase, 11/0.433 kV, 50 Hz., 63 kVA, Mineral oil immersed and naturally cooled outdoor type, aluminium wound Non-sealed transformer delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40°C by thermometer in oil and 45°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with standard accessories complete with test certificate with losses below 340 Watts at 50% load, 1140 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-NSL.	Each	182411
10-1-3	Supplying, installing, testing & commissioning of 3 phase, 11/0.433 kV, 50 Hz., 100 kVA, Mineral oil immersed and naturally cooled outdoor type, aluminium wound Non-sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40°C by thermometer in oil and 45°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) , with standard accessories complete with test certificate with losses below 475 Watts at 50% load, 1650 Watts at 100% load as per IS:1180 (part 1) : 2014 , with necessary permissions of Electrical Inspector, as per specification no SS- TR-NSL.	Each	232607
10-1-4	Supplying, installing, testing & commissioning 3 phase, 11/0.433 kV, 50 Hz., 160 kVA, Mineral oil immersed and naturally cooled outdoor type, aluminium wound Non-sealed transformer , delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40°C by thermometer in oil and 45°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) , with HV tapping (with off load tap changer) off load +2.5 to -5 in steps of 2.5%, having 4 number of tap positions , with standard accessories complete with test certificate with losses below 670 Watts at 50% load, 1950 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-NSL.	Each	313280

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
10-1-5	Supplying, installing, testing & commissioning 3 phase, 11/0.433 kV, 50 Hz., 200 kVA, Mineral oil immersed and naturally cooled outdoor type, copper wound Non-sealed transformer delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50 °C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer)off load +2.5 to -5 in steps of 2.5%, having 4 number of tap positions , with standard accessories complete with test certificate with losses below 780 Watts at 50% load, 2300 Watts at 100% load as per IS:1180 (part 1) : 2014 , with necessary permissions of Electrical Inspector, as per specification no SS- TR-NSL .	Each	608743
10-1-6	Supplying, installing, testing & commissioning 3 phase,11/0.433 kV, 50 Hz., 250 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound Non-sealed transformer delta/star connected with additional neutral brought out on load side, temperature rise should not Exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%, having 7 number of tap positions ,with standard accessories complete with test certificate with losses below 980 Watts at 50% load, 2930 Watts at 100% load as per IS:1180 (part 1) : 2014 , with necessary permissions of Electrical Inspector, as per specification no SS- TR-NSL .	Each	766625
10-1-7	Supplying, installing, testing & commissioning 3 phase, 11/0.433 kV, 50 Hz., 315 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound Non-sealed transformer delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%,+5 to -10 in steps of 2.5%, having 7 number of tap positions with standard accessories complete with test certificate with losses below 1025 Watts at 50% load, 3100 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-NSL .	Each	839390
10-1-8 (New)	Supplying, installing, testing & commissioning 3 phase, 11/0.433 kV, 50 Hz., 400 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound Non-sealed transformer delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%, having 7 number of tap positions with standard accessories complete with test certificate with losses below 1225 Watts at 50% load, 3450 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-NSL .	Each	1016946

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
10-1-9	Supplying, installing, testing & commissioning 3 phase, 11/0.433 kV, 50 Hz., 500 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound Non-sealed transformer delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%, having 7 number of tap positions with standard accessories complete with test certificate with losses below 1510 Watts at 50% load, 4300 Watts at 100% load as per IS:1180 (part 1) : 2014 , with necessary permissions of Electrical Inspector, as per specification no SS- TR-NSL .	Each	1121263
10-1-10	Supplying, installing, testing & commissioning 3 phase, 11/0.433 kV, 50 Hz., 630 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound Non-sealed transformer delta/star connected additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%, having 7 number of tap positions , with standard accessories complete with test certificate with losses below 1860 Watts at 50% load, 5300 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-NSL .	Each	1347196
10-1-11 (New)	Supplying, installing, testing & commissioning 3 phase, 11/0.433 kV, 50 Hz., 800 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound Non-sealed transformer delta/star connected additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) , with HV tapping (with on load tap changer) on load +5 to -15 in steps of 2.5% , with standard accessories complete with test certificate with losses below 2287 Watts at 50% load, 6403 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-NSL .	Each	1690535
10-1-12 (New)	Supplying, installing, testing & commissioning 3 phase, 11/0.433 kV, 50 Hz., 1000 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound Non-sealed transformer delta/star connected additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) , with HV tapping (with on load tap changer) on load +5 to -15 in steps of 2.5% , with standard accessories complete with test certificate with losses below 2790 Watts at 50% load, 7700 Watts at 100% load as per IS:1180(part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-NSL .	Each	1889213

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
10-1-13	Supplying, installing, testing & commissioning 3 phase, 22/0.433 kV, 50 Hz., 63 kVA, Mineral oil immersed and naturally cooled outdoor type, aluminium wound Non-sealed transformer , delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40°C by thermometer in oil and 45°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) , with HV tapping (with off load tap changer) off load +2.5 to -5 in steps of 2.5%, having 4 number of tap positions , with standard accessories complete with test certificate with losses below 357 Watts at 50% load, 1197 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-NSL .	Each	233409
10-1-14	Supplying, installing, testing & commissioning 3 phase, 22/0.433 kV, 50 Hz., 100 kVA, Mineral oil immersed and naturally cooled outdoor type, aluminium wound Non-sealed transformer delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40°C by thermometer in oil and 45°C by the resistance method in winding at full load rating, with HV tapping (with off load tap changer) off load +2.5 to -5 in steps of 2.5%, having 4 number of tap positions , with standard accessories complete with test certificate with losses below 499 Watts at 50% load, 1733 Watts at 100% load as per IS:1180(part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-NSL .	Each	289726
10-1-15	Supplying, installing, testing & commissioning 3 phase, 22/0.433 kV, 50 Hz., 160 kVA, Mineral oil immersed and naturally cooled outdoor type, aluminium wound Non-sealed transformer delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40°C by thermometer in oil and 45°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer) off load +2.5 to -5 in steps of 2.5%, having 4 number of tap positions , with standard accessories complete with test certificate with losses below 704 Watts at 50% load, 2048 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-NSL .	Each	341374
10-1-16	Supplying, installing, testing & commissioning 3 phase, 22/0.433 kV, 50 Hz., 200 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound Non-sealed transformer delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40°C by thermometer in oil and 45°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer) off load +2.5 to -5 in steps of 2.5%, having 4 number of tap positions , with standard accessories complete with test certificate with losses below 819 Watts at 50% load, 2415 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-NSL .	Each	655423

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
10-1-17	Supplying, installing, testing & commissioning 3 phase, 22/0.433 kV, 50 Hz., 250 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound Non-sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%,having 7 number of tap positions with standard accessories complete with test certificate with losses below 1029 Watts at 50% load, 3077 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-NSL .	Each	786087
10-1-18	Supplying, installing, testing & commissioning 3 phase, 22/0.433 kV, 50 Hz., 315 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound Non-sealed transformer delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer) off Load +5 to -10 in steps of 2.5%,having 7 number of tap positions with standard accessories complete with test certificate with losses below 1076 Watts at 50% load, 3255 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-NSL	Each	885690
10-1-19 (New)	Supplying, installing, testing & commissioning 3 phase, 22/0.433 kV, 50 Hz., 400 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound Non-sealed transformer delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer) off Load +5 to -10 in steps of 2.5%, having 7 number of tap positions with standard accessories complete with test certificate with losses below 1286 Watts at 50% load, 3623 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-NSL	Each	994623
10-1-20	Supplying, installing, testing & commissioning 3 phase, 22/0.433 kV, 50 Hz., 500 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound Non-sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%,having 7 number of tap positions with standard accessories complete with test certificate with losses below 1586 Watts at 50% load, 4515 Watts at 100% load as per IS:1180 ((part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-NSL .	Each	1194756

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
10-1-21	Supplying, installing, testing & commissioning 3 phase, 22/0.433 kV, 50 Hz., 630 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound Non-sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40°C by thermometer in oil and 45°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%, having 7 number of tap positions with standard accessories complete with test certificate with losses below 1953 Watts at 50% load, 5565 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-NSL	Each	1596321
10-1-22 (New)	Supplying, installing, testing & commissioning 3 phase, 22/0.433 kV, 50 Hz., 800 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound Non-sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) ,with HV tapping (with on load tap changer) on load +5 to -15 in steps of 2.5% , with standard accessories complete with test certificate with losses below 2401 Watts at 50% load, 6723 Watts at 100% load as per IS:1180(part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-NSL	Each	1777217
10-1-23 (New)	Supplying, installing, testing & commissioning 3 phase, 22/0.433 kV, 50 Hz., 1000 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound Non-sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) , with HV tapping (with on load tap changer) on load +5 to -15 in steps of 2.5% , with standard accessories complete with test certificate with losses below 2930 Watts at 50% load, 8085 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-NSL .	Each	2070977

10.2 Hermetically Sealed transformer.

10-2-1 (New)	Supplying, installing, testing & commissioning 3 phase, 11/0.433 kV, 50 Hz., 25 kVA Mineral oil immersed and naturally cooled outdoor type, aluminium wound ,without gas cushioning hermetically Sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40°C by thermometer in oil and 45°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) , with standard accessories complete with test certificate with losses below 190 Watts at 50% load, 635 Watts at 100% load as per IS:1180 (part 1) : 2014 , with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL .	Each	94478
-----------------	---	------	-------

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
10-2-2 (New)	Supplying, installing, testing & commissioning of 3 phase, 11/0.433 kV, 50 Hz., 63 kVA, Mineral oil immersed and naturally cooled outdoor type, aluminium wound without gas cushioning hermetically Sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40°C by thermometer in oil and 45°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer) off load +2.5 to -5 in steps of 2.5%, having 4 number of tap positions , with standard accessories complete with test certificate with losses below 340 Watts at 50% load, 1140 Watts at 100% load as per IS:1180 (part 1) : 2014 , with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL	Each	185217
10-2-3 (New)	Supplying, installing, testing & commissioning of 3 phase, 11/0.433 kV, 50 Hz., 100 kVA, Mineral oil immersed and naturally cooled outdoor type, aluminium wound without gas cushioning, hermetically Sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40°C by thermometer in oil and 45°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer) off load +2.5 to -5 in steps of 2.5%, having 4 number of tap positions , with standard accessories complete with test certificate with losses below 475 Watts at 50% load, 1650 Watts at 100% load as per IS:1180 (part 1) : 2014 , with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL	Each	237009
10-2-4 (New)	Supplying, installing, testing & commissioning 3 phase, 11/0.433 kV, 50 Hz., 160 kVA, Mineral oil immersed and naturally cooled outdoor type, aluminium wound without gas cushioning hermetically Sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40°C by thermometer in oil and 45°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) , with HV tapping (with off load tap changer) off load +2.5 to -5 in steps of 2.5%, having 4 number of tap positions , with standard accessories complete with test certificate with losses below 670 Watts at 50% load, 1950 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL	Each	320235
10-2-5 (New)	Supplying, installing, testing & commissioning 3 phase, 11/0.433 kV, 50 Hz., 200 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound, without gas cushioning ,hermetically Sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40°C by thermometer in oil and 45°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) , with HV tapping (with off load tap changer) off load +2.5 to -5 in steps of 2.5%, having 4 number of tap positions , with standard accessories complete with test certificate with losses below 780 Watts at 50% load, 2300 Watts at 100% load as per IS:1180 (part 1) : 2014 , with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL	Each	624367

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
10-2-6 (New)	Supplying, installing, testing & commissioning 3 phase,11/0.433 kV, 50 Hz., 250 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound, without gas cushioning , hermetically Sealed transformer , delta/star connected with additional neutral brought out on load side, temperature rise should not Exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%, having 7 number of tap positions , with standard accessories complete with test certificate with losses below 980 Watts at 50% load, 2930 Watts at 100% load as per IS:1180 (part 1) : 2014 , with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL	Each	775913
10-2-7 (New)	Supplying, installing, testing & commissioning 3 phase, 11/0.433 kV, 50 Hz., 315 kVA, mineral oil immersed and naturally cooled outdoor type, Copper wound ,without gas cushioning ,hermetically Sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%,having 7 number of tap positions , with standard accessories complete with test certificate with losses below 1025 Watts at 50% load, 3100 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL	Each	872348
10-2-8 (New)	Supplying, installing, testing & commissioning 3 phase, 11/0.433 kV, 50 Hz., 400 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound ,without gas cushioning ,hermetically Sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) , with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%,having 7 number of tap positions with standard accessories complete with test certificate with below 1225 Watts at 50% load, 3450 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL	Each	1054345
10-2-9 (New)	Supplying, installing, testing & commissioning 3 phase, 11/0.433 kV, 50 Hz., 500 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound ,without gas cushioning ,hermetically Sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%,having 7 number of tap positions with standard accessories complete with test certificate with losses below 1510 Watts at 50% load, 4300 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL .	Each	1140431

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
10-2-10 (New)	Supplying, installing, testing & commissioning 3 phase, 11/0.433 kV, 50 Hz., 630 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound , without gas cushioning ,hermetically Sealed transformer, delta/star connected additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%,having 7 number of tap positions with standard accessories complete with test certificate with losses below 1860 Watts at 50% load, 5300 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL .	Each	1425460
10-2-11 (New)	Supplying, installing, testing & commissioning 3 phase, 11/0.433 kV, 50 Hz., 800 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound , without gas cushioning ,hermetically Sealed transformer, delta/star connected additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with on load tap changer) on load +5 to -15 in steps of 2.5% , with standard accessories complete with test certificate with losses below 2287 Watts at 50% load, 6403 Watts at 100% load as per IS:1180 (part 1) : 2014 , with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL .	Each	1728999
10-2-12 (New)	Supplying, installing, testing & commissioning 3 phase, 11/0.433 kV, 50 Hz., 1000 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound , without gas cushioning ,hermetically Sealed transformer, delta/star connected additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with on load tap changer) on load +5 to -15 in steps of 2.5%, with standard accessories complete with test certificate with losses below 2790 Watts at 50% load, 7700 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL .	Each	1939274
10-2-13 (New)	Supplying, installing, testing & commissioning 3 phase, 22/0.433 kV, 50 Hz., 63 kVA, Mineral oil immersed and naturally cooled outdoor type, aluminium wound, without gas cushioning , hermetically Sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40°C by thermometer in oil and 45°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer) off load +2.5 to -5 in steps of 2.5%, having 4 number of tap positions , with standard accessories complete with test certificate with losses below 357 Watts at 50% load, 1197 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL .	Each	244744

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
10-2-14 (New)	Supplying, installing, testing & commissioning 3 phase, 22/0.433 kV, 50 Hz., 100 kVA, Mineral oil immersed and naturally cooled outdoor type, aluminium wound, without gas cushioning , hermetically Sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40°C by thermometer in oil and 45°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) , with standard accessories complete with test certificate with losses below 499 Watts at 50% load, 1733 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL	Each	301900
10-2-15 (New)	Supplying, installing, testing & commissioning 3 phase, 22/0.433 kV, 50 Hz., 160 kVA, Mineral oil immersed and naturally cooled outdoor type, aluminium wound, without gas cushioning , hermetically Sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40°C by thermometer in oil and 45°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper), with HV tapping (with off load tap changer) off load +2.5 to -5 in steps of 2.5%, having 4 number of tap positions , with standard accessories complete with test certificate with losses below 704 Watts at 50% load, 2048 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL .	Each	358064
10-2-16 (New)	Supplying, installing, testing & commissioning 3 phase, 22/0.433 kV, 50 Hz., 200 kVA, Mineral oil immersed and naturally cooled outdoor type, copper wound, without gas cushioning , hermetically Sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 40°C by thermometer in oil and 45°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper), with HV tapping (with off load tap changer) off load +2.5 to -5 in steps of 2.5%, having 4 number of tap positions , with standard accessories complete with test certificate with losses below 819 Watts at 50% load, 2415 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL	Each	684221
10-2-17 (New)	Supplying, installing, testing & commissioning 3 phase, 22/0.433 kV, 50 Hz., 250 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound, without gas cushioning, hermetically sealed transformer, delta / star connected with additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%, having 7 number of tap positions , with standard accessories complete with test certificate with losses below 1029 Watts at 50% load, 3077 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL	Each	800771

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
10-2-18 (New)	Supplying, installing, testing & commissioning 3 phase, 22/0.433 kV, 50 Hz., 315 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound, without gas cushioning , hermetically Sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer) off Load +5 to -10 in steps of 2.5%, having 7 number of tap positions with standard accessories complete with test certificate with losses below 1076 Watts at 50% load, 3255 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL	Each	890334
10-2-19 (New)	Supplying, installing, testing & commissioning 3 phase, 22/0.433 kV, 50 Hz., 400 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound, without gas cushioning , hermetically Sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer) off Load +5 to -10 in steps of 2.5%, having 7 number of tap positions with standard accessories complete with test certificate with losses below 1286 Watts at 50% load, 3623 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL	Each	1028919
10-2-20 (New)	Supplying, installing, testing & commissioning 3 phase, 22/0.433 kV, 50 Hz., 500 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound ,without gas cushioning ,hermetically Sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%, having 7 number of tap positions with standard accessories complete with test certificate with losses below 1586 Watts at 50% load, 4515 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL .	Each	1259281
10-2-21 (New)	Supplying, installing, testing & commissioning 3 phase, 22/0.433 kV, 50 Hz., 630 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound ,without gas cushioning ,hermetically Sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with off load tap changer) off load +5 to -10 in steps of 2.5%,having 7 number of tap positions with standard accessories complete with test certificate with losses below 1953 Watts at 50% load, 5565 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL .	Each	1614492

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
10-2-22 (New)	Supplying, installing, testing & commissioning 3 phase, 22/0.433 kV, 50 Hz., 800 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound , without gas cushioning ,hermetically Sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with on load tap changer) on load +5 to -15 in steps of 2.5% , with standard accessories complete with test certificate with losses below 2401 Watts at 50% load, 6723 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL .	Each	1792249
10-2-23 (New)	Supplying, installing, testing & commissioning 3 phase, 22/0.433 kV, 50 Hz., 1000 kVA, Mineral oil immersed and naturally cooled outdoor type, Copper wound , without gas cushioning ,hermetically Sealed transformer, delta/star connected with additional neutral brought out on load side, temperature rise should not exceed 45°C by thermometer in oil and 50°C by the resistance method in winding at full load rating, using type A winding insulation (kraft paper) with HV tapping (with on load tap changer) on load +5 to -15 in steps of 2.5% , with standard accessories complete with test certificate with losses below 2930 Watts at 50% load, 8085 Watts at 100% load as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL .	Each	2140077
Note	1) For indoor type transformer add Rs. 18000/- in rate of transformer. 2) For use of transformer with copper winding for 25/ 63/100/160 kVA capacity (to be used only for Licensee Job), rates shall be increased by 33 % of rates for Transformer with aluminium winding.		
(New)	3) To use natural ester oil instead of mineral oil and to use class B type insulation (thermally upgraded paper (TUP)) instead of Class A insulation (Kraft paper) in a hermetically sealed transformer increase the material rate by 9%. (As per IS 1180 (part-3) : 2021)		
10-2-24	Inspection of faulty distribution transformer 11kV / 22kV on HV side, 415 V on LV side up to 500 kVA capacity in workshop in presence of authority by opening top cover, disconnecting HV & LV studs, tap changer connections; taking out core along with winding for inspection and carrying out necessary tests on HV, LV side, oil, tap-changer etc. checking breather, body condition etc. and submitting inspection report, test reports (oil, insulation, resistance, ratio, etc.) and quotation for repairs complete.	Job	4471
Note	When a transformer is required in lieu of faulty transformer, refer chapter no. 14 (14-Temporary Illumination). Transportation, erection, testing etc. are to be considered separately.		
<u>10.3 Single Phase Sealed Transformer</u>			
10-3-1 (New)	Supplying, installing, testing & commissioning single phase, 11 kV/ V3/ 250V, 16 kVA, Mineral oil cooled with CSP features outdoor type, aluminium wound sealed transformer, temperature rise should not exceed 40°C by thermometer in oil and 45°C by the resistance method in winding at full load rating, with 5 % continuously rated for full load with standard accessories complete with test certificate with losses should be below 82 Watts at 50% load & 224 Watts at 100 % load & first filling of oil having vector group- DYN-11 & first filling of silica gel, as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL .	Each	105379

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
10-3-2	Supplying, installing, testing & commissioning single phase, 11 kV/ V3/ 250V, 25 kVA , Mineral oil cooled with CSP Features outdoor type, aluminium wound sealed transformer, temperature rise should not exceed 40°C by thermometer in oil and 45°C by the resistance method in winding at full load rating, with 5 % continuously rated for full load with standard accessories complete with test certificate with losses should be below 110 Watts at 50% load & 300 Watts at 100 % load & first filling of oil having vector group- DYN-11 & first filling of silica gel, as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL .	Each	125711

10.4 Compact substation.

10-4-1	Supplying, installing, testing & commissioning compact substation with 3 phase, 11/0.433 kV, 50 Hz., 400 kVA, Mineral oil immersed Copper wound, without gas cushioning , hermetically Sealed transformer having indoor type transformer bushings, with HT side (Incoming side) load break switch of appropriate capacity and LT side (outgoing side) MCCBs (4 pole) of appropriate capacity , with inbuilt metering cubical, using type A winding insulation (kraft paper) ,standard accessories complete with test certificate with losses below 1225 Watts at 50% load, 3450 Watts at 100% load for transformer, as per IS:1180 (part 1) : 2014 , with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL	Each	1755380
10-4-2	Supplying, installing, testing & commissioning compact substation with 3 phase, 11/0.433 kV, 50 Hz., 500 kVA, Mineral Oil immersed Copper wound, without gas cushioning , hermetically Sealed transformer having indoor type transformer bushings, with HT side (incoming side) load break switch of appropriate capacity and LT side (outgoing side) MCCBs (4 pole) of appropriate capacity , with inbuilt metering cubical, using type A winding insulation (kraft paper) ,standard accessories complete with test certificate with losses below 1510 Watts at 50% load, 4300 Watts at 100% load for transformer, as per IS:1180 (part 1) : 2014 , with necessary permissions of Electrical Inspectors per specification no SS- TR-SL .	Each	2185158
10-4-3	Supplying, installing, testing & commissioning compact substation with 3 phase, 11/0.433, 50 Hz., 630 kVA, Mineral oil immersed Copper wound , without gas cushioning ,hermetically Sealed transformer having indoor type transformer bushings, with HT side (incoming side) load break switch of appropriate capacity and LT side (outgoing side) MCCBs (4 pole) of appropriate capacity , with inbuilt metering cubical, using type A winding insulation (kraft paper) , standard accessories complete with test certificate with losses below 1860 Watts at 50% load, 5300 Watts at 100% load for transformer, as per IS:1180 (part 1) : 2014 , with necessary permissions of Electrical Inspectors per specification no SS- TR-SL	Each	2557008
10-4-4	Supplying, installing, testing & commissioning compact substation with 3 phase, 11/0.433, 50 Hz., 800 kVA, Mineral oil immersed Copper wound , without gas cushioning ,hermetically Sealed transformer having indoor type transformer bushings, with HT side (incoming side) load break switch of appropriate capacity and LT side (outgoing side) MCCBs (4 pole) of appropriate capacity , with inbuilt metering cubical, using type A winding insulation (kraft paper) ,standard accessories complete with test certificate with losses below 2287 Watts at 50% load, 6403 Watts at 100% load for transformer, as per IS:1180 (part 1) : 2014 , with necessary permissions of Electrical Inspectors per specification no SS- TR-SL	Each	2747818

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
10-4-5	Supplying, installing, testing & commissioning compact substation with 3 phase, 11/0.433, 50 Hz., 1000 kVA, Mineral oil immersed Copper wound , without gas cushioning , hermetically Sealed transformer having indoor type transformer bushings, with HT side (incoming side) load break switch of appropriate capacity and LT side (outgoing side) MCCBs (4 pole) of appropriate capacity , with inbuilt metering cubical, using type A winding insulation (kraft paper) ,standard accessories complete with test certificate with losses below 2790 Watts at 50% load, 7700 Watts at 100% load for transformer, as per IS:1180 (part 1) : 2014 , with necessary permissions of Electrical Inspectors per specification no SS- TR-SL	Each	2987967
10-4-6	Supplying, installing, testing & commissioning compact substation with 3 phase, 22/0.433 kV, 50 Hz., 400 kVA, Mineral oil immersed Copper wound, without gas cushioning , hermetically Sealed transformer having indoor type transformer bushings, with HT side (incoming side) load break switch of appropriate capacity and LT side (outgoing side) MCCBs (4 pole) of appropriate capacity, with inbuilt metering cubical, using type A winding insulation (kraft paper) ,standard accessories complete with test certificate with losses below 1286 Watts at 50% load, 3623 Watts at 100% load for transformer, as per IS:1180 (part 1) : 2014 , with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL	Each	1767690
10-4-7	Supplying, installing, testing & commissioning compact substation with 3 phase, 22/0.433 kV, 50 Hz., 500 kVA, Mineral oil immersed Copper wound , without gas cushioning , hermetically Sealed transformer having indoor type transformer bushings, with HT side (incoming side) load break switch of appropriate capacity and LT side (outgoing side) MCCBs (4 pole) of appropriate capacity, with inbuilt metering cubical, using type A winding insulation (kraft paper) ,standard accessories complete with test certificate with losses below 1586 Watts at 50% load, 4515 Watts at 100% load for transformer, as per IS:1180 (part 1) : 2014 , with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL	Each	2440240
10-4-8	Supplying, installing, testing & commissioning compact substation with 3 phase, 22/0.433 kV, 50 Hz., 630 kVA, Mineral oil immersed Copper wound, without gas cushioning, hermetically Sealed transformer having indoor type transformer bushings, with HT side (incoming side) load break switch of appropriate capacity and LT side (outgoing side) MCCBs (4 pole) of appropriate capacity, with inbuilt metering cubical, using type A winding insulation (kraft paper) ,standard accessories complete with test certificate with losses below 1953 Watts at 50% load, 5565 Watts at 100% load for transformer, as per IS:1180 (part 1) : 2014 with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL	Each	2811864
10-4-9	Supplying, installing, testing & commissioning compact substation with 3 phase, 22/0.433 kV, 50 Hz., 800 kVA, Mineral oil immersed Copper wound, without gas cushioning, hermetically Sealed transformer having indoor type transformer bushings, with HT side (incoming side) load break switch of appropriate capacity and LT side (outgoing side) MCCBs (4 pole) of appropriate capacity, with inbuilt metering cubical, using type A winding insulation (kraft paper) ,standard accessories complete with test certificate with losses below 2401 Watts at 50% load, 6730 Watts at 100% load for transformer, as per IS:1180 (part 1) : 2014 , with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL	Each	2962892

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
10-4-10	Supplying, installing, testing & commissioning compact substation with 3 phase, 22/0.433 kV, 50 Hz., 1000 kVA, Mineral oil immersed Copper wound, without gas cushioning, hermetically Sealed transformer having indoor type transformer bushings, with HT side (incoming side) load break switch of appropriate capacity and LT side (outgoing side) MCCBs (4 pole) of appropriate capacity, with inbuilt metering cubical, using type A winding insulation (kraft paper) , standard accessories complete with test certificate with losses below 2930 Watts at 50% load, 8085 Watts at 100% load for transformer, as per IS:1180 (part 1) : 2014 , with necessary permissions of Electrical Inspector, as per specification no SS- TR-SL .	Each	3222952

Note: For compact substation without metering cubicle deduct Rs.35000/- from rate

10.5 Dry type transformer

10-5-1	Supplying, installation, testing and commissioning 3 phase, 11/0.433 kV, 50 Hz., 315 kVA, indoor type, vacuum cast coil (VCC) dry type cast resin transformer, Copper wound , Dyn11 vector group, delta/star connection with additional neutral brought out on load side, for indoor use continuous duty, average temperature rise of winding (at principal tap) 115°C at ambient temp max 50°C and min -50°C at full load rating, with tapping (off circuit tap links type tap changer), for off load +5 to - 5% @ 2.5% in +2/-2 steps, HV variation, class of insulation H/H, method of cooling AN, no load loss at rated voltage and frequency (+15% IS ToI) 1 kW, full load loss at rated current 3.15 kW , with 98.70% efficiency at full load & 98.88 % at 1/2 full load, with 75 kV peak full wave lightning impulse withstand voltage with complete enclosure having IP 21 degree of protection, cable box arrangement at HV side and bus duct at LV side, with rating and diagram plate, base channel, earthing terminals and WTI scanner with 3 PT-100 sensors, etc., standard accessories complete with test certificates (as per IS:11171 & IS 2026) with necessary permissions of Electrical Inspector as per specification no. SS- TR .	Each	859800
10-5-2	Supplying, installation, testing and commissioning 3 phase, 11/0.433 kV, 50 Hz., 400 kVA, indoor type, vacuum cast coil (VCC) dry type cast resin transformer, Copper wound , Dyn11 vector group, delta/star connection with additional neutral brought out on load side, for indoor use continuous duty, average temp rise of winding (at principal tap) 115°C at ambient temp max 50° C & min -5°C at full load rating, with tapping (with off circuit tap links type tap changer) for off load +5 to - 5% @ 2.5% in +2/-2 steps, HV variation, class of insulation H/H, method of cooling AN, no load loss at rated voltage & frequency (+15% IS Tol) 1.15 kW, full load loss at rated current 3.60 kW , with 98.83 % efficiency at full load & 98.99 % at 1/2 full load, with 75 kV peak full wave lightning impulse withstand voltage with complete enclosure having IP 21 degree of protection, cable box arrangement at HV side & bus duct at LV side ,with rating & diagram plate, base channel, earthing terminals & WTI scanner with 3 PT-100 sensors, etc. standard accessories complete with test certificate (as per IS:11171 & IS 2026) with necessary permissions of Electrical Inspector, as per specification no SS- TR .	Each	928209

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
10-5-3	Supplying, installation, testing and commissioning 3 phase, 11/0.433 kV, 50 Hz., 500 kVA, indoor type, vacuum cast coil (VCC) dry type cast resin transformer, Copper wound , Dyn11 vector group, delta/star connection with additional neutral brought out on load side, for indoor use continuous duty, average temp rise of winding (at principal tap) 115°C at ambient temp max 50° & min -5°C at full load rating, with tapping (with off circuit tap links type tap changer) for off load +5 to - 5% @ 2.5% in +2/-2 steps, HV variation, class of Insulation H/H, method of cooling AN, no load loss at rated voltage & frequency (+15% IS Tol) 1.15 kW, full load loss at rated current 3.60 kW , with 98.83 % efficiency at full load & 98.99 % at 1/2 full load, with 75 KV peak full wave lightning impulse withstand voltage with complete enclosure having IP 21 degree of protection, cable box arrangement at HV side & bus duct at LV side ,with rating & diagram plate, base channel, earthing terminals & WTI scanner with 3 PT-100 sensors, etc. standard accessories complete with test certificate (as per IS:11171 & IS 2026) with necessary permissions of Electrical Inspector, as per specification no SS- TR.	Each	1093489
10-5-4	Supplying, installation, testing and commissioning 3 phase, 11/0.433 kV, 50 Hz., 630 kVA, indoor type, vacuum cast coil (VCC) dry type cast resin transformer, Copper wound , Dyn11 vector group, delta/star connection with additional neutral brought out on load side, for indoor use continuous duty, average temp rise of winding (at principal tap) 115°C at ambient temp max 50°C & min -5°C at full load rating, with Tapping (with off circuit tap links type tap changer) for off load +5 to - 5% @ 2.5% in +2/-2 steps, HV variation, class of insulation H/H, method of cooling AN, no load loss at rated voltage & frequency (+15% IS Tol) 1.60 kW, full load loss at rated current 5.00 kW , with 98.96 % efficiency at full load & 99.10 % at 1/2 full load, with 75 kV peak full wave lightning impulse withstand voltage with complete enclosure having IP 21 degree of protection, cable box arrangement at HV side & bus duct at LV side ,with rating & diagram plate, base channel, earthing terminals & WTI scanner with 3 PT-100 sensors, etc. standard accessories complete with test certificate (as per IS:11171 & IS 2026) with necessary permissions of Electrical Inspector, as per specification no. SS- TR.	Each	1261206
10-5-5 (New)	Supplying, installation, testing and commissioning 3 phase, 11/0.433 kV, 50 Hz., 800 kVA, indoor type, vacuum cast coil (VCC) dry type cast resin transformer, Copper wound , Dyn11 vector group, with delta/star connection with additional neutral brought out on load side, for indoor use continuous duty, average temp rise of winding (at principal tap) 115°C at ambient temp max 50°C & Min -5°C at full load rating, with Tapping (with off circuit tap links type tap changer) for off load +5 to - 5% @ 2.5% in +2/-2 steps, HV variation, class of insulation H/H, method of cooling AN, no load loss at rated voltage & frequency (+15% IS Tol) 1.90 kW, full load loss at rated current 6.75 kW , with 98.86 % efficiency at full load & 99.05 % at 1/2 full load, with 75 kV peak full wave lightning impulse withstand voltage with complete enclosure having IP 21 degree of protection, cable box arrangement at HV side & bus duct at LV side ,with rating & diagram plate, base channel, earthing terminals & WTI scanner with 3 PT-100 sensors, etc. standard accessories complete with necessary permissions of Electrical Inspector test certificate (as per IS:11171 & IS 2026) with necessary permissions of Electrical Inspectors per specification no. SS- TR.	Each	1342737

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
10-5-6	Supplying, installation, testing and commissioning 3 phase, 11/0.433 kV, 50 Hz., 1000 kVA, indoor type, vacuum cast coil (VCC) dry type cast resin transformer, Copper wound , Dyn11 vector group, delta/star connection with additional neutral brought out on load side, for indoor use continuous duty, average temp rise of winding (at Principal Tap) 115°C at ambient temp max 50°C & min -5°C at full load rating, with tapping (with off circuit tap links type tap changer) for off load +5 to - 5% @ 2.5% in +2/-2 steps, HV variation, class of insulation H/H, method of cooling AN, no load loss at rated voltage & frequency (+15% IS Tol) 2.20 KW, full load loss at rated current 9.25 kW , with 98.87 % efficiency at full load & 99.11 % at 1/2 full load, with 75 kV peak full wave lightning impulse withstand voltage with complete enclosure having IP 21 Degree of protection, cable box arrangement at HV side & bus duct at LV side ,with rating & diagram plate, base channel, earthing terminals & WTI scanner with 3 PT-100 sensors, etc. standard accessories complete with test certificate (as per IS:11171 & IS 2026) with necessary permissions of Electrical Inspector as per specification no. SS- TR.	Each	1546196
10-5-7	Supplying, installation, testing and commissioning 3 phase, 22/0.433 kV, 50 Hz., 315 kVA, indoor type, vacuum cast coil (VCC) dry type cast resin Transformer, Copper wound , Dyn11 vector group, delta/star connection with additional neutral brought out on load side, for indoor use continuous duty, average temp rise of winding (at Principal Tap) 115°C at ambient temp max 50°C & Min -5°C at full load rating, with Tapping (with off circuit bolted links type tap changer) for off load +5 to - 5% @ 2.5% in +2/-2 steps, HV variation, class of insulation H/H, method of cooling AN, no load loss at rated voltage & frequency (+15% IS Tol) 1.80 kW, full load loss at rated current 3.00 kW , with 98.50 % efficiency at full load & 98.41 % at 1/2 full load, with 125 kV peak full wave lightning impulse withstand voltage with complete enclosure having IP 23 degree of protection, cable box arrangement at HV side & bus duct at LV side ,with rating & diagram plate, base channel, lifting lugs, earthing terminals & WTI scanner with 3 PT-100 sensors, etc. standard accessories complete with test certificate (as per IS:11171 & IEC 60076-11) with necessary permissions of Electrical Inspector, as per specification no. SS- TR.	Each	1317950
10-5-8	Supplying, installation, testing and commissioning 3 phase, 22/0.433 kV, 50 Hz., 400 kVA, indoor type, vacuum cast coil (VCC) dry type cast resin Transformer, Copper wound , Dyn11 vector group, delta/star connection with additional neutral brought out on load side, for indoor use continuous duty, average temp rise of winding (at principal tap) 115°C at ambient temp max 50°C & min -5°C at full load rating, with Tapping (with off circuit bolted links type tap changer) for off load +5 to - 5% @ 2.5% in +2/-2 steps, HV variation, class of insulation H/H, method of cooling AN, no load loss at rated voltage & frequency (+15% IS Tol) 2.00 kW, full load loss at rated current 3.60 kW , with 98.62 % efficiency at full load & 98.57 % at 1/2 full load, with 125 kV peak full wave lightning impulse withstand voltage with complete enclosure having IP 23 Degree of protection, cable box arrangement at HV side & bus duct at LV side ,with rating & diagram plate, base channel, lifting lugs, earthing terminals & WTI scanner with 3 PT-100 sensors, etc. standard accessories complete with test certificate (as per IS:11171 & IEC 60076-11) with necessary permissions of Electrical Inspector, as per specification no. SS- TR.	Each	1505899

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
10-5-9	Supplying, installation, testing and commissioning 3 phase, 22/0.433 kV, 50 Hz., 500 kVA, indoor type, vacuum cast coil (VCC) dry type cast resin Transformer, Copper wound , Dyn11 vector group, with delta/star connection with additional neutral brought out on load side, for indoor use continuous duty, average temp rise of winding (at Principal Tap) 115°C at ambient temp max 50°C & min -5°C at full load rating, with tapping (with off circuit bolted links type tap changer) for off load +5 to - 5% @ 2.5% in +2/-2 steps, HV variation, class of insulation H/H, method of cooling AN, no load loss at rated voltage & frequency (+15% IS Tol) 2.20 kW, Full load loss at rated current 4.50 kW , with 98.68 % efficiency at full load & 98.69 % at 1/2 full load, with 125 kV peak full wave lightning impulse withstand voltage with complete enclosure having IP 23 degree of protection, cable box arrangement at HV side & bus duct at LV side ,with rating & diagram plate, base channel, lifting lugs, earthing terminals & WTI scanner with 3 PT-100 sensors, etc. standard accessories complete with test certificate (as per IS:11171 & IEC 60076-11) with necessary permissions of Electrical Inspector, as per specification no. SS- TR.	Each	1616974
10-5-10	Supplying, installation, testing and commissioning 3 phase, 22/0.433 kV, 50 Hz., 630 kVA, indoor type, vacuum cast coil (VCC) dry type cast resin Transformer, Copper wound , Dyn11 vector group, delta/star connection with additional neutral brought out on load side, for indoor use continuous duty, average temp rise of winding (at Principal Tap) 115°C at ambient temp max 50°C & Min -5°C at full load rating, with tapping(with off circuit bolted links type tap changer) for off load +5 to - 5% @ 2.5% in +2/-2 steps, HV variation, class of insulation H/H, method of cooling AN, no load loss at rated voltage & frequency (+15% IS Tol) 2.50 kW, full load loss at rated current 5.50 kW , with 98.75 % efficiency at full load & 98.78 % at 1/2 full load, with 125 kV peak full wave lightning impulse withstand voltage with complete enclosure having IP 23 Degree of protection, cable box arrangement at HV side & bus duct at LV side ,with rating & diagram plate, base channel, lifting lugs, earthing terminals & WTI scanner with 3 PT-100 sensors, etc. standard accessories complete with test certificate (as per IS:11171 & IEC 60076-11) with necessary permissions of Electrical Inspector, as per specification no. SS- TR.	Each	1760441
10-5-11 (New)	Supplying, installation, testing and commissioning 3 phase, 22/0.433 kV, 50 Hz., 800 kVA, indoor type, vacuum cast coil (VCC) dry type cast resin Transformer, Copper wound , Dyn11 vector group, delta/star connection with additional neutral brought out on load side, for indoor use continuous duty, average temp rise of winding (at principal tap) 115°C at ambient temp max 50°C & min -5°C at full load rating, with tapping (with off circuit bolted links type tap changer) for off load +5 to - 5% @ 2.5% in +2/-2 steps, HV variation, class of insulation H/H, method of cooling AN, no load loss at rated voltage & frequency (+15% IS Tol) 2.60 kW, full load loss at rated current 7.00 kW , with 98.74 % efficiency at full load & 98.85 % at 1/2 full load, with 125 kV peak full wave lightning impulse withstand voltage with complete enclosure having IP 23 degree of protection, cable box arrangement at HV side & bus duct at LV side, with rating & diagram plate, base channel, lifting lugs, earthing terminals & WTI scanner with 3 PT-100 sensors, etc. standard accessories complete with test certificate (as per IS:11171 & IEC 60076-11) with necessary permissions of Electrical Inspector, as per specification no. SS- TR.	Each	1863778

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
10-5-12	Supplying, installation, testing and commissioning 3 phase, 22/0.433 kV, 50 Hz., 1000 kVA, indoor type, vacuum cast coil (VCC) dry type cast resin transformer, Copper wound , Dyn11 vector group, with delta connection on HV side & star connection on LV side with additional neutral brought out on load side, for indoor use continuous duty, average temp rise of winding (at principal tap) 115°C at ambient temp max 50°C & Min -5°C at full load rating, with tapping (with off circuit bolted links type tap changer) for off load +5 to - 5% @ 2.5% in +2/-2 Steps, HV variation, class of insulation H/H, method of cooling AN, no load loss at rated voltage & frequency (+15% IS Tol) 3.20 kW, full load loss at rated current 9.30 kW, with 98.77 % efficiency at full load & 98.91 % at 1/2 full load, with 125 KV peak full wave lightning impulse withstand voltage with complete enclosure having IP 23 degree of protection, cable box arrangement at HV side & bus duct at LV side ,with rating & diagram plate, base channel, lifting lugs, earthing terminals & WTI scanner with 3 PT-100 sensors, etc. standard accessories complete with test certificate (as per IS:11171 & IEC 60076-11) with necessary permissions of Electrical Inspector, as per specification no. SS- TR.	Each	1999546

10.6 Accessories

10-6-1	Supplying and erecting 11 kV outdoor type gang operated air break, triple pole switch 200 A capacity with 3 post pin type insulator per phase, mounted in horizontal or vertical position with necessary channels on provided cross arm with adequate length of "C" class G.I. pipe for operating handle erected on extended square shaft. The operating handle provided with lock and key at suitable height from ground level with necessary clamp.	Set	10283
10-6-2	Supplying and erecting 11 kV outdoor type gang operated air break, triple pole switch 400 A capacity with 3 post pin type insulator per phase, mounted in horizontal or vertical position with necessary channels on provided cross arm with adequate length of "C" class G.I. pipe for operating handle erected on extended square shaft. The operating handle provided with lock and key at suitable height from ground level with necessary clamp.	Set	15900
10-6-3	Supplying and erecting 22 kV outdoor type gang operated air break, triple pole switch 200 A capacity with 3 post pin type insulator per phase, mounted in horizontal or vertical position with necessary channels on provided cross arm with adequate length of "C" class G.I. pipe for operating handle erected on extended square shaft. The operating handle provided with lock and key at suitable height from ground level with necessary clamp.	Set	18665
10-6-4	Supplying and erecting 33 kV outdoor type gang operated air break, triple pole switch 200 A capacity with 3 post pin type insulator double stack per phase, mounted in horizontal position with necessary channels on provided cross arm with adequate length of "C" class G.I. pipe for operating handle erected on extended square shaft. The operating handle provided with lock and key at suitable height from ground level with necessary clamp.	Set	39118
10-6-5	Supplying and erecting, 11 kV outdoor type drop out fuse with insulator complete with fuse holders, fuse barrel with metal fitting, fuse element mounted on M.S. channel with working current of 15A capacity complete erected on provided cross arm.	Set	6340

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
10-6-6	Supplying and erecting, 22 kV outdoor type drop out fuse with insulator complete with fuse holders, fuse barrel with metal fitting, fuse element mounted on M.S. channel with working current of 15A capacity complete erected on provided cross arm.	Set	10453
10-6-7	Supplying and erecting, 33 kV outdoor type drop out fuse with insulator complete with fuse holders, fuse barrel with metal fitting, fuse element mounted on M.S. channel with working current of 15A capacity complete erected on provided cross arm.	Set	18006
10-6-8	Supplying and erecting 11 kV fuse barrel with metal fittings complete.	Each	448
10-6-9	Supplying and erecting 22 kV fuse barrel with metal fittings complete.	Each	680
10-6-10	Supplying and erecting hard drawn copper solid wire no. 0 to 6 SWG complete erected for connections on H.T. sides.	kg	1095
10-6-11	Supplying and erecting extra thick alkathene pipe 10 mm dia. erected to enclose bare conductor wires complete.. (use shall be restricted to H.T.)	m	60
10-6-12	Supplying operating rod, suitable for 11/22 kV supply with clamps for removing drop out fuses at 6 meters length, 4 pieces each with rain shade with hand grip including earthling chain 1.5 m complete.(Light duty)	Each	4230
10-6-13	Supplying heavy duty operating rod, outer dia 25 mm & inner dia 20 mm suitable for 11 kV with brass couplings etc. for removing drop out fuses at 6 meters length, 4 pieces each with rain shade with hand grip including earthling chain 1.5m complete.	Each	4590
10-6-14	Supplying heavy duty operating rod, outer dia 25 mm & inner dia 20 mm suitable for 22/33 kV with brass couplings etc. for removing drop out fuses at 6 m length, 4 pieces each with rain shade with hand grip including earthling chain 1.5m complete.	Each	5400
10-6-15	Supplying and erecting copper tubular bus 20 mm dia 1.6 mm (16 SWG) thick for the use of high tension over head bus and erected on provided HT insulators with clamps, nuts and bolts complete. (weight per meter of bus is about 1.7 kg.)	m	1860
10-6-16	Supplying and erecting clamps, made out of 25x3 mm, copper strips to be fixed to tubular bus for connecting the bare copper wire to other equipment, with brass nuts bolts of suitable dia complete.	Each	254
10-6-17	Supplying and erecting anti climbing devices, fabricated from pole clamps of MS flat 40x5 mm, with drooping spikes 15 cm. in length, welded to it and erected on pole complete.	Each	202
10-6-18	Supplying and erecting fencing of section having size 2450 mm in height from ground level and 1200 mm width with angle iron frame work erected in CC foundation and painted complete as per specification no SS-AS/FSG	Each	6857
Note	For section less than 1200 mm width, reduce rate by Rs 200/- per 100 mm or part thereof for reduction in width of 1200 mm.		
10-6-19	Supplying and erecting 50 x 50 x 6 mm angle iron as corner support 2m long fixed at the middle of the fencing frame and the other side inclined at 30 degree angle, in cement concrete foundation of 15 x 15 x 40 cm complete duly painted with one coat of red oxide and two coats aluminium paint complete.	Each	1358
10-6-20	Supplying and erecting double leaf hinged door each 1500 mm in width x 1850 mm in height using B class, GI pipe with angle iron supports, chain link wire mesh (jali) complete supported on channel iron, erected in foundation, and painted complete as per specification no SS-AS/DLD	Each	19632

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
10-6-21	Supplying & erecting barbed wire two ply with 12 SWG ply and 12 SWG barb with a gap between two bars of 75 mm. firmly fixed on provided angle supports with necessary materials complete. (6.044 meters/kg).	kg	136
10-6-22	Providing printed instruction chart for treating persons suffering from electric shock , printed in English & Marathi and duly laminated complete.	Each	151
10-6-23	Providing pair of duly tested rubber hand gloves as per IS :47705 suitable for working up to 22 kV supply complete.	Each	681
10-6-24	Supplying standard first aid box with necessary antiseptic cream, medicine for use on wounds due burn, crepe bandage, gauge bandage, medicated ready to use bandage (Band-Aid) adhesive tape for medicinal use, scissors, anti-septic solution, etc. (All above contents shall be of standard makes)	Each	888
10-6-25	Supplying and fixing PVC synthetic elastomer electrically insulating mat with class A insulation conforming to IS: 15652 – 2006 having 2 mm thickness up to 3.3 kV	m ²	5131
10-6-26	Supplying and fixing PVC synthetic elastomer electrically insulating mat with class B insulation conforming to IS: 15652 – 2006 having 2.5 mm thickness up to 11 kV	m ²	5874
10-6-27	Supplying and fixing PVC synthetic elastomer electrically insulating mat with class C insulation conforming to IS: 15652 – 2006 tested having 3mm thickness up to 33 kV	m ²	7908
10-6-28	Supplying shock proof leather safety shoes of electrical grade of standard size as IS :11226, 14544 duly tested, with necessary test certificate from manufacturer.	Per pair	2121
10-6-29	Supplying SMC chequered plates of size 4ft x 2ft , hot press moulded from advanced composites of plastics namely sheet moulding compound of thickness 2.5 mm with insulation level up to 22 kV and fixing it to substation floor with SR-998 adhesive along with 5 mm thick E.P. foam complete.	Each	5636
10-6-30	Supplying SMC chequered plates of size 4ft x 2ft , hot press moulded from advanced composites of plastics namely sheet moulding compound of thickness 5 mm with insulation level suitable for 33 kV and fixing it to substation floor with SR-998 adhesive along with 5 mm thick E.P. foam complete.	Each	11060
10-6-31	Transportation of 11/22 kV transformer up to 315 kVA without loading & unloading (for handing over to section store/ repair works only)	Per km	30
10-6-32	Transportation of 11/22 kV transformer above 315 kVA to 1000 kVA without loading & unloading (for handing over to section store/ repair works only)	Per km	39

10.7 Dismantling

10-7-1	Dismantling the existing distribution transformer of any capacity from the plinth / foundation safely without any damages.	kVA	33
10-7-2	Dismantling existing pole mounted distribution transformer safely without any damages.	kVA	46
10-7-3	Dismantling existing DO / AB switch set complete from D.P. structure in an approved manner.	set	374

Note The rate for item no 10.7.3 are for dismantling and handing over to section office inclusive of transportation up to 25 km, between site and section office.

Chapter : 11
Generators (GEN)

11.1 Generators

(GEN-GEN)

11.2 Auto Mains Failure Panels (AMF Panels)

(GEN-AMF)

11.3 Servicing of DG Set

11.4 Dismantling

Chapter 11 : Generators (GEN)

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)

11.1 Generators (GEN-GEN)

11-1-1	<p>Supplying, erecting, testing and commissioning of Diesel generating set with standard control Panel with alternator of 5 kVA continuous rating, single Phase, 230V, 50c/s 0.8 p. f. AC supply a totally enclosed air / liquid cooled multi cylinder diesel engine developing suitable BHP at 1500 rpm with 10% overload for 1 hour in 12 hours with standard accessories, self-excited, self-regulated, screen protected alternator with static excitation system running at 1500 RPM as per IS 4722-2001 with voltage regulation +/- 5 %, with performance class G2 and maximum fuel consumption of 1.3 Ltr/hr @75% loading. Engine and alternator directly coupled on a common fabricated steel base plate with anti-vibrating pad, with control panel comprising of standard meters, switchgears, indicators connected with suitable wires/cables. The complete set enclosed in acoustic enclosure made of 18 SWG CRCA sheet, sound absorbing material, rockwool covered from inside with ¾ mm holes perforated sheet to restrict sound level up to 75 dB at 1.0 m. The engine with first filling of oil, diesel not less than 13 Ltr etc. on provided M20 Grade CC Foundation as per specification no. GEN-DG</p>	Each	178754
11-1-2	<p>Supplying, erecting, testing and commissioning of diesel generating set with standard control Panel with alternator of 10 kVA output continuous rating, single Phase, 230V, 50c/s 0.8 p. f. A.C supply a totally enclosed air / liquid cooled multi cylinder diesel engine developing suitable BHP at 1500 rpm with 10% overload for 1 hour in 12 hours with standard accessories, self-excited, self-regulated, screen protected alternator with static excitation system running at 1500 RPM as per IS 4722-2001 with voltage regulation +/- 5 %, with performance class G2 and maximum fuel consumption of 2.4 Ltr/hr @75% loading .Both the engine and alternator direct coupled on a common fabricated steel base plate with anti-vibrating pad with control panel comprising of standard meters, switchgears, indicators connected with suitable wires/cables. The complete set enclosed in Acoustic enclosure made of 18 SWG CRCA Sheet, sound absorbing material, Rockwool covered from inside with ¾ mm holes perforated sheet to restrict sound level up to 75 dB at 1.0 m. The engine with first filling of oil, diesel not less than 40 Ltr etc. on provided M20 Grade CC Foundation as per specification no. GEN-DG</p>	Each	286356
11-1-3	<p>Supplying, erecting, testing and commissioning of diesel generating set with alternator of 10 kVA output continuous rating, 3 Phase, 415 V, 50c/s 0.8 p. f. A.C supply a totally enclosed air cooled / liquid cooled multi-cylinder diesel engine developing suitable BHP at 1500 rpm with 10% overload for 1 hour in 12 hours, along with standard accessories, self-excited, self-regulated, screen protected alternator with static excitation system running at 1500 RPM as per IS 4722-2001 with voltage regulation +/- 5 %, with performance class G2 and maximum fuel consumption of 2.4 Ltr/hr @75% loading. Both the engine and alternator direct coupled on a common fabricated steel base frame and mounted on anti-vibrating pads with standard control panel comprising of meters, switchgears, indicators connected with suitable wires/cables, the complete set enclosed in composite Acoustic enclosure as fully assembled integral unit made of 16 SWG CRCA Sheet, sound absorbing material to restrict sound level up to 75 dB at 1.0 m, provided with first filling of oil, diesel not less than 40 Ltr etc. on provided M20 Grade CC Foundation as per specification No. GEN-DG</p>	Each	286724

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
11-1-4	Supplying, erecting, testing and commissioning of diesel generating set with alternator of 15 kVA output continuous rating, 3 Phase, 415 V, 50c/s 0.8 p. f. A.C a totally enclosed air cooled / liquid cooled multi-cylinder diesel engine developing suitable BHP at 1500 rpm with 10% overload for 1 hour in 12 hours, along with standard accessories, self-excited, self-regulated, screen protected alternator with static excitation system running at 1500 RPM as per IS 4722-2001 with voltage regulation +/- 5 %, with performance class G2 and maximum fuel consumption of 3.0 Ltr/hr @75% loading . Both the engine and alternator direct coupled on a common fabricated steel base frame and mounted on anti-vibrating pads with standard control panel comprising meters, switchgears, indicators connected with suitable wires/cables, the complete set enclosed in composite Acoustic enclosure as fully assembled integral unit made of 16 SWG CRCA Sheet, sound absorbing material to restrict sound level up to 75 dB at 1.0 m, provided with first filling of oil, diesel not less than 40 Ltr etc. on provided M20 Grade CC Foundation as per specification no. GEN-DG	Each	359131
11-1-5	Supplying, erecting, testing and commissioning of diesel generating set with alternator of 20 kVA output continuous rating, 3 Phase, 415 V, 50c/s 0.8 p. f. A.C supply, a totally enclosed air cooled / liquid cooled multi-cylinder diesel engine developing suitable BHP at 1500 rpm with 10% overload for 1 hour in 12 hours, along with standard accessories, self-excited, self-regulated, screen protected alternator with static excitation system running at 1500 RPM as per IS 4722-2001 with voltage regulation +/- 5 %, with performance class G2 and maximum fuel consumption of 3.8 Ltr/hr @75% loading . Both the engine and alternator direct coupled on a common fabricated steel base frame and mounted on anti-vibrating pads with standard control panel comprising meters, switchgears, indicators connected with suitable wires/cables, the complete set enclosed in composite Acoustic enclosure as fully assembled integral unit made of 16 SWG CRCA Sheet, sound absorbing material to restrict sound level up to 75 dB at 1.0 m, provided with first filling of oil, diesel not less than 50 Ltr etc. on provided M20 Grade CC Foundation as per specification no. GEN-DG	Each	397542
11-1-6	Supplying, erecting, testing and commissioning of diesel generating set with alternator of 25 kVA output continuous rating, 3 Phase, 415 V, 50c/s 0.8 p. f. A.C supply, a totally enclosed air cooled / liquid cooled multi-cylinder diesel engine developing suitable BHP at 1500 rpm with 10% overload for 1 hour in 12 hours, along with standard accessories, self-excited, self-regulated, screen protected alternator with static excitation system running at 1500 RPM as per IS 4722-2001 with voltage regulation +/- 5 %, with performance class G2 and maximum fuel consumption 5.0 Ltr/hr @75% loading . Both the engine and alternator direct coupled on a common fabricated steel base frame and mounted on anti-vibrating pads with standard control panel comprising meters, switchgears, indicators connected with suitable wires/cables, the complete set enclosed in composite Acoustic enclosure as fully assembled integral unit made of 16 SWG CRCA Sheet, sound absorbing material to restrict sound level up to 75 dB at 1.0 m, provided with first filling of oil, diesel not less than 65 Ltr etc. on provided M20 Grade CC Foundation as per specification no. GEN-DG	Each	444730

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
11-1-7	Supplying, erecting, testing and commissioning of diesel generating set with alternator of 30 kVA output continuous rating, 3 Phase, 415 V, 50c/s 0.8 p. f. A.C supply, a totally enclosed air cooled / liquid cooled multi-cylinder diesel engine developing suitable BHP at 1500 rpm with 10% overload for 1 hour in 12 hours, along with standard accessories, self-excited, self-regulated, screen protected alternator with static excitation system running at 1500 RPM as per IS 4722-2001 with voltage regulation +/- 5 %, with performance class G2 and maximum fuel consumption 5.9 Ltr/hr @75% loading . Both the engine and alternator direct coupled on a common fabricated steel base frame and mounted on anti-vibrating pads with standard control panel comprising meters, switchgears, indicators connected with suitable wires/cables, the complete set enclosed in composite Acoustic enclosure as fully assembled integral unit made of 16 SWG CRCA Sheet, sound absorbing material to restrict sound level up to 75 dB at 1.0 m, provided with first filling of oil, diesel not less than 65 Ltr etc. on provided M20 Grade CC Foundation as per specification no. GEN-DG	Each	466658
11-1-8	Supplying, erecting, testing and commissioning of diesel generating set with alternator of 40 kVA output continuous rating, 3 Phase, 415 V, 50c/s 0.8 p. f. A.C supply, a totally enclosed air cooled / liquid cooled multi-cylinder diesel engine developing suitable BHP at 1500 rpm with 10% overload for 1 hour in 12 hours, along with standard accessories, self-excited self-regulated, screen protected alternator with static excitation system running at 1500 RPM as per IS 4722-2001 with voltage regulation +/- 5 %, with performance class G2 and maximum fuel consumption 7.47 Ltr/hr @75% loading . Both the engine and alternator direct coupled on a common fabricated steel base frame and mounted on anti-vibrating pads with standard control panel comprising meters, switchgears, indicators connected with suitable wires/cables, the complete set enclosed in composite Acoustic enclosure as fully assembled integral unit made of 16 SWG CRCA Sheet, sound absorbing material to restrict sound level up to 75 dB at 1.0 m, provided with first filling of oil, diesel not less than 75 Ltr etc. on provided M20 Grade CC Foundation as per specification no. GEN-DG	Each	550783
11-1-9	Supplying, erecting, testing and commissioning of diesel generating set with alternator of 50 kVA output continuous rating, 3 Phase, 415 V, 50c/s 0.8 p. f. A.C supply, a totally enclosed air cooled / liquid cooled multi-cylinder diesel engine developing suitable BHP at 1500 rpm with 10% overload for 1 hour in 12 hours, along with standard accessories, self-excited, self-regulated, screen protected alternator with static excitation system running at 1500 RPM as per IS 4722-2001 with voltage regulation +/- 5 %, with performance class G2 and maximum fuel consumption 9.98 Ltr/hr @75% loading . Both the engine and alternator direct coupled on a common fabricated steel base frame and mounted on anti-vibrating pads with standard control panel comprising meters, switchgears, indicators connected with suitable wires/cables, the complete set enclosed in composite Acoustic enclosure as fully assembled integral unit made of 16 SWG CRCA Sheet, sound absorbing material to restrict sound level up to 75 dB at 1.0 m, provided with first filling of oil, diesel not less than 150 Ltr etc. on provided M20 Grade CC Foundation as per specification no. GEN-DG	Each	617544

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
11-1-10	Supplying, erecting, testing and commissioning of diesel generating set with alternator of 62.5 kVA output continuous rating, 3 Phase, 415 V, 50c/s 0.8 p. f. A.C supply, a totally enclosed air cooled / liquid cooled multi-cylinder diesel engine developing suitable BHP at 1500 rpm with 10% overload for 1 hour in 12 hours, along with standard accessories, self-excited, self-regulated, screen protected alternator with static excitation system running at 1500 RPM as per IS 4722-2001 with voltage regulation +/- 5 %, with performance class G2 and maximum fuel consumption 11.3 Ltr/hr @75% loading . Both the engine and alternator direct coupled on a common fabricated steel base frame and mounted on anti-vibrating pads with standard control panel comprising meters, switchgears, indicators connected with suitable wires/cables, the complete set enclosed in composite Acoustic enclosure as fully assembled integral unit made of 16 SWG CRCA Sheet, sound absorbing material to restrict sound level up to 75 dB at 1.0 m, provided with first filling of oil, diesel not less than 150 Ltr etc. on provided M20 Grade CC Foundation as per specification no. GEN-DG	Each	661755
11-1-11	Supplying, erecting, testing and commissioning of diesel generating set with alternator of 82.5 kVA output continuous rating, 3 Phase, 415 V, 50c/s 0.8 p. f. A.C supply, a totally enclosed air cooled / liquid cooled multi-cylinder diesel engine developing suitable BHP at 1500 rpm with 10% overload for 1 hour in 12 hours, along with standard accessories, self-excited, self-regulated, screen protected alternator with static excitation system running at 1500 RPM as per IS 4722-2001 with voltage regulation +/- 5 %, with performance class G2 and maximum fuel consumption 14.0 Ltr/hr @75% loading . Both the engine and alternator direct coupled on a common fabricated steel base frame and mounted on anti-vibrating pads with standard control panel comprising meters, switchgears, indicators connected with suitable wires/cables, the complete set enclosed in composite Acoustic enclosure as fully assembled integral unit made of 16 SWG CRCA Sheet, sound absorbing material to restrict sound level up to 75 dB at 1.0 m, provided with first filling of oil, diesel not less than 145 Ltr etc. on provided M20 Grade CC Foundation as per specification no. GEN-DG	Each	797607
11-1-12	Supplying, erecting, testing and commissioning of diesel generating set with alternator of 100 kVA output continuous rating, 3 Phase, 415 V, 50c/s 0.8 p. f. A.C supply, a totally enclosed air cooled / liquid cooled multi-cylinder diesel engine developing suitable BHP at 1500 rpm with 10% overload for 1 hour in 12 hours, along with standard accessories, self-excited, self-regulated, screen protected alternator with static excitation system running at 1500 RPM as per IS 4722-2001 with voltage regulation +/- 5 %, with performance class G2 and maximum fuel consumption 17.4 Ltr/hr @75% loading . Both the engine and alternator direct coupled on a common fabricated steel base frame and mounted on anti-vibrating pads with standard control panel comprising meters, switchgears, indicators connected with suitable wires/cables, the complete set enclosed in composite Acoustic enclosure as fully assembled integral unit made of 16 SWG CRCA Sheet, sound absorbing material to restrict sound level up to 75 dB at 1.0 m, provided with first filling of oil, diesel not less than 230 Ltr etc. on provided M20 Grade CC Foundation as per specification no. GEN-DG	Each	921688

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
11-1-13	Supplying, erecting, testing and commissioning of diesel generating set with alternator of 125 kVA output continuous rating, 3 Phase, 415 V, 50c/s 0.8 p. f. A.C supply, a totally enclosed air cooled / liquid cooled multi-cylinder diesel engine developing suitable BHP at 1500 rpm with 10% overload for 1 hour in 12 hours, along with standard accessories, self-excited, self-regulated, screen protected alternator with static excitation system running at 1500 RPM as per IS 4722-2001 with voltage regulation +/- 5 %, with performance class G2 and maximum fuel consumption 21.4 Ltr/hr @75% loading . Both the engine and alternator direct coupled on a common fabricated steel base frame and mounted on anti-vibrating pads with standard control panel comprising meters, switchgears, indicators connected with suitable wires/cables, the complete set enclosed in composite Acoustic enclosure as fully assembled integral unit made of 16 SWG CRCA Sheet, sound absorbing material to restrict sound level up to 75 dB at 1.0 m, provided with first filling of oil, diesel not less than 230 Ltr etc. on provided M20 Grade CC Foundation as per specification no. GEN-DG	Each	960636
11-1-14	Supplying, erecting, testing and commissioning of diesel generating set with alternator of 140 kVA output continuous rating, 3 Phase, 415 V, 50c/s 0.8 p. f. A.C supply, a totally enclosed air cooled / liquid cooled multi-cylinder diesel engine developing suitable BHP at 1500 rpm with 10% overload for 1 hour in 12 hours, along with standard accessories, self-excited, self-regulated, screen protected alternator with static excitation system running at 1500 RPM as per IS 4722-2001 with voltage regulation +/- 5 %, with performance class G2 and maximum fuel consumption 22.85 Ltr/hr @75% loading . Both the engine and alternator direct coupled on a common fabricated steel base frame and mounted on anti-vibrating pads with standard control panel comprising meters, switchgears, indicators connected with suitable wires/cables, the complete set enclosed in composite Acoustic enclosure as fully assembled integral unit made of 16 SWG CRCA Sheet, sound absorbing material to restrict sound level up to 75 dB at 1.0 m, provided with first filling of oil, diesel not less than 290 Ltr etc. on provided M20 Grade CC Foundation as per specification no. GEN-DG	Each	1179980
11-1-15	Supplying, erecting, testing and commissioning of diesel generating set with alternator of 160 kVA output continuous rating, 3 Phase, 415 V, 50c/s 0.8 p. f. A.C supply, a totally enclosed air cooled / liquid cooled multi-cylinder diesel engine developing suitable BHP at 1500 rpm with 10% overload for 1 hour in 12 hours, along with standard accessories, self-excited, self-regulated, screen protected alternator with static excitation system running at 1500 RPM as per IS 4722-2001 with voltage regulation +/- 5 %, with performance class G2 and maximum fuel consumption 27.8 Ltr/hr @75% loading . Both the engine and alternator direct coupled on a common fabricated steel base frame and mounted on anti-vibrating pads with standard control panel comprising meters, switchgears, indicators connected with suitable wires/cables, the complete set enclosed in composite Acoustic enclosure as fully assembled integral unit made of 16 SWG CRCA Sheet, sound absorbing material to restrict sound level up to 75 dB at 1.0 m, provided with first filling of oil, diesel not less than 290 Ltr etc. on provided M20 Grade CC Foundation as per specification no. GEN-DG	Each	1256636

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
11-1-16	Supplying, erecting, testing and commissioning of diesel generating set with alternator of 180 kVA output continuous rating, 3 Phase, 415 V, 50c/s 0.8 p. f. A.C supply, a totally enclosed air cooled / liquid cooled multi-cylinder diesel engine developing suitable BHP at 1500 rpm with 10% overload for 1 hour in 12 hours, along with standard accessories, self-excited, self-regulated, screen protected alternator with static excitation system running at 1500 RPM as per IS 4722-2001 with voltage regulation +/- 5 %, with performance class G2 and maximum fuel consumption 30.90 Ltr/hr @75% loading. Both the engine and alternator direct coupled on a common fabricated steel base frame and mounted on anti-vibrating pads with standard control panel comprising meters, switchgears, indicators connected with suitable wires/cables, the complete set enclosed in composite Acoustic enclosure as fully assembled integral unit made of 16 SWG CRCA Sheet, sound absorbing material to restrict sound level up to 75 dB at 1.0 m, provided with first filling of oil, diesel not less than 300 Ltr etc. on provided M20 Grade CC Foundation as per specification no. GEN-DG	Each	1325546
11-1-17	Supplying, erecting, testing and commissioning of diesel generating set with alternator of 200 kVA output continuous rating, 3 Phase, 415 V, 50c/s 0.8 p. f. A.C supply, a totally enclosed air cooled / liquid cooled multi-cylinder diesel engine developing suitable BHP at 1500 rpm with 10% overload for 1 hour in 12 hours, along with standard accessories, self-excited, self-regulated, screen protected alternator with static excitation system running at 1500 RPM as per IS 4722-2001 with voltage regulation +/- 5 %, with performance class G2 and maximum fuel consumption 34.40 Ltr/hr @75% loading. Both the engine and alternator direct coupled on a common fabricated steel base frame and mounted on anti-vibrating pads with standard control panel comprising meters, switchgears, indicators connected with suitable wires/cables, the complete set enclosed in composite Acoustic enclosure as fully assembled integral unit made of 16 SWG CRCA Sheet, sound absorbing material to restrict sound level up to 75 dB(A) at 1.0 m, provided with first filling of oil, diesel not less than 300 Ltr etc. on provided M20 Grade CC Foundation as per specification no. GEN-DG	Each	1513863
11-1-18	Supplying, erecting, testing and commissioning of diesel generating set with alternator of 250 kVA output continuous rating, 3 Phase, 415 V, 50c/s 0.8 p. f. A.C supply, a totally enclosed air cooled / liquid cooled multi-cylinder diesel engine developing suitable BHP at 1500 rpm with 10% overload for 1 hour in 12 hours, along with standard accessories, self-excited, self-regulated, screen protected alternator with static excitation system running at 1500 RPM as per IS 4722-2001 with voltage regulation +/- 5 %, with performance class G2 and maximum fuel consumption 42.30 Ltr/hr @75% loading. Both the engine and alternator direct coupled on a common fabricated steel base frame and mounted on anti-vibrating pads with standard control panel comprising meters, switchgears, indicators connected with suitable wires/cables, the complete set enclosed in composite Acoustic enclosure as fully assembled integral unit made of 16 SWG CRCA Sheet, sound absorbing material to restrict sound level up to 75 dB at 1.0 m, provided with first filling of oil, diesel not less than 425 Ltr etc. on provided M20 Grade CC Foundation and obtaining necessary approval from Electrical Inspector as per specification no. GEN-DG	Each	1847424

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
11-1-19	Supplying, erecting, testing and commissioning of diesel generating set with alternator of 320 kVA output continuous rating, 3 Phase, 415 V, 50c/s 0.8 p. f. A.C supply, a totally enclosed air cooled / liquid cooled multi-cylinder diesel engine developing suitable BHP at 1500 rpm with 10% overload for 1 hour in 12 hours, along with standard accessories, self-excited, self-regulated, screen protected alternator with static excitation system running at 1500 RPM as per IS 4722-2001 with voltage regulation +/- 5 %, with performance class G2 and maximum fuel consumption 54.89 Ltr/hr @75% loading. Both the engine and alternator direct coupled on a common fabricated steel base frame and mounted on anti-vibrating pads with standard control panel comprising meters, switchgears, indicators connected with suitable wires/cables, the complete set enclosed in composite Acoustic enclosure as fully assembled integral unit made of 16 SWG CRCA Sheet, sound absorbing material to restrict sound level up to 75 dB at 1.0 m, provided with first filling of oil, diesel not less than 480 Ltr etc. on provided M20 Grade CC Foundation and obtaining necessary approval from Electrical Inspector as per specification no. GEN-DG	Each	2469023
11-1-20	Supplying, erecting, testing and commissioning of diesel generating set with alternator of 380/400 kVA output continuous rating, 3 Phase, 415 V, 50c/s 0.8 p. f. A.C supply, a totally enclosed air cooled / liquid cooled multi-cylinder diesel engine developing suitable BHP at 1500 rpm with 10% overload for 1 hour in 12 hours, along with standard accessories, self-excited, self-regulated, screen protected alternator with static excitation system running at 1500 RPM as per IS 4722-2001 with voltage regulation +/- 5 %, with performance class G2 and maximum fuel consumption 65.5 Ltr/hr @75% loading. Both the engine and alternator direct coupled on a common fabricated steel base frame and mounted on anti-vibrating pads with standard control panel comprising meters, switchgears, indicators connected with suitable wires/cables, the complete set enclosed in composite Acoustic enclosure as fully assembled integral unit made of 16 SWG CRCA Sheet, sound absorbing material to restrict sound level up to 75 dB at 1.0 m, provided with first filling of oil, diesel not less than 450 Ltr etc. on provided M20 Grade CC Foundation and obtaining necessary approval from Electrical Inspector as per specification no. GEN-DG	Each	2994442
11-1-21	Supplying, erecting, testing and commissioning of diesel generating set with alternator of 500 kVA output continuous rating, 3 Phase, 415 V, 50c/s 0.8 p. f. A.C supply, a totally enclosed air cooled / liquid cooled multi-cylinder diesel engine developing suitable BHP at 1500 rpm with 10% overload for 1 hour in 12 hours, along with standard accessories, self-excited, self-regulated, screen protected alternator with static excitation system running at 1500 RPM as per IS 4722-2001 with voltage regulation +/- 5 %, with performance class G2 and maximum fuel consumption 81.90 Ltr/hr @75% loading. Both the engine and alternator direct coupled on a common fabricated steel base frame and mounted on anti-vibrating pads with standard control panel comprising meters, switchgears, indicators connected with suitable wires/cables, the complete set enclosed in composite Acoustic enclosure as fully assembled integral unit made of 16 SWG CRCA Sheet, sound absorbing material to restrict sound level up to 75 dB at 1.0 m, provided with first filling of oil, diesel not less than 690 Ltr etc. on provided M20 Grade CC Foundation and obtaining necessary approval from Electrical Inspector as per specification no. GEN-DG	Each	3469250

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
11-1-22	Supplying, erecting, testing and commissioning of diesel generating set with alternator of 750 kVA output continuous rating, 3 Phase, 415 V, 50c/s 0.8 p. f. A.C supply, a totally enclosed air cooled / liquid cooled multi-cylinder diesel engine developing suitable BHP at 1500 rpm with 10% overload for 1 hour in 12 hours, along with standard accessories, self-excited, self-regulated, screen protected alternator with static excitation system running at 1500 RPM as per IS 4722-2001 with voltage regulation +/- 5 %, with performance class G2 and maximum fuel consumption 126.4 Ltr/hr @75% loading. Both the engine and alternator direct coupled on a common fabricated steel base frame and mounted on anti-vibrating pads with standard control panel comprising meters, switchgears, indicators connected with suitable wires/cables, the complete set enclosed in composite acoustic enclosure as fully assembled integral unit made of 16 SWG CRCA sheet, sound absorbing material to restrict sound level up to 75 dB at 1.0 m, provided with first filling of oil, diesel not less than 990 Ltr etc. on provided M20 Grade CC Foundation and obtaining necessary approval from Electrical Inspector as per specification no. GEN-DG	Each	5421443

- Note**
- 1) **DG Set rating for altitudes more than 150 m above mean sea level shall be de-rated at 3.5 % for every 300 m above 150 m mean sea level.**
 - 2) **For all the Engines, the emission standards/norms shall meet applicable pollution control board norms as amended by Government.**

11.2 Auto Mains Failure Panels (AMF Panels) (GEN-AMF)

11-2-1	Supplying, erecting, testing and commissioning of microprocessor based AMF panel suitable for diesel generating set of up to 10 kVA capacity Single/Three phase, 230/415 Volts, 50Hz A.C. with all standard features, safeties etc as per specification no. GEN-AMF.	Each	29485
11-2-2	Supplying, erecting, testing and commissioning of microprocessor based AMF panel suitable for diesel generating set of above 10 kVA up to 15 kVA capacity Three phase, 415 Volts, 50Hz A.C. with all standard features, safeties etc as per specification no. GEN-AMF.	Each	39377
11-2-3	Supplying, erecting, testing and commissioning of microprocessor based AMF panel suitable for diesel generating set of above 15 kVA up to 20 kVA capacity Three phase, 415 Volts, 50Hz A.C. with all standard features, safeties etc as per specification no. GEN-AMF.	Each	41276
11-2-4	Supplying, erecting, testing and commissioning of microprocessor based AMF panel suitable for diesel generating set of above 20 kVA up to 25 kVA capacity Three phase, 415 Volts, 50Hz A.C. with all standard features, safeties etc as per specification no. GEN-AMF.	Each	49137
11-2-5	Supplying, erecting, testing and commissioning of microprocessor based AMF panel suitable for diesel generating set of above 25 kVA up to 35 kVA capacity Three phase, 415 Volts, 50Hz A.C. with all standard features, safeties etc as per specification no. GEN-AMF.	Each	60480
11-2-6	Supplying, erecting, testing and commissioning of microprocessor based AMF panel suitable for diesel generating set of above 35 kVA up to 40 kVA capacity Three phase, 415 Volts, 50Hz A.C. with all standard features, safeties etc as per specification no. GEN-AMF.	Each	71691
11-2-7	Supplying, erecting, testing and commissioning of microprocessor based AMF panel suitable for diesel generating set of above 40 kVA up to 50 kVA capacity Three phase, 415 Volts, 50Hz A.C. with all standard features, safeties etc as per specification no. GEN-AMF.	Each	86726

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
11-2-8	Supplying, erecting, testing and commissioning of microprocessor based AMF panel suitable for diesel generating set of above 50 kVA up to 62.5 kVA capacity Three phase, 415 Volts, 50Hz A.C. with all standard features, safeties etc as per specification no. GEN-AMF.	Each	91079
11-2-9	Supplying, erecting, testing and commissioning of microprocessor based AMF panel suitable for diesel generating set of above 62.5 kVA up to 82.5 kVA capacity Three phase, 415 Volts, 50Hz A.C. with all standard features, safeties etc as per specification no. GEN-AMF.	Each	114556
11-2-10	Supplying, erecting, testing and commissioning of microprocessor based AMF panel suitable for diesel generating set of above 82.5 kVA up to 100 kVA capacity Three phase, 415 Volts, 50Hz A.C. with all standard features, safeties etc as per specification no. GEN-AMF.	Each	127053
11-2-11	Supplying, erecting, testing and commissioning of microprocessor based AMF panel suitable for diesel generating set of above 100 kVA up to 125 kVA capacity Three phase, 415 Volts, 50Hz A.C. with all standard features, safeties etc as per specification no. GEN-AMF.	Each	130394
11-2-12	Supplying, erecting, testing and commissioning of microprocessor based AMF panel suitable for diesel generating set of above 125 kVA up to 140 kVA capacity Three phase, 415 Volts, 50Hz A.C. with all standard features, safeties etc as per specification no. GEN-AMF.	Each	142309
11-2-13	Supplying, erecting, testing and commissioning of microprocessor based AMF panel suitable for diesel generating set of above 140 kVA up to 180 kVA capacity Three phase, 415 Volts, 50Hz A.C. with all standard features, safeties etc as per specification no. GEN-AMF.	Each	165270
11-2-14	Supplying, erecting, testing and commissioning of microprocessor based AMF panel suitable for diesel generating set of above 180 kVA up to 200 kVA capacity Three phase, 415 Volts, 50Hz A.C. with all standard features, safeties etc as per specification no. GEN-AMF.	Each	185054
11-2-15	Supplying, erecting, testing and commissioning of microprocessor based AMF panel suitable for diesel generating set of above 200 kVA up to 250 kVA capacity Three phase, 415 Volts, 50Hz A.C. with all standard features, safeties etc as per specification no. GEN-AMF.	Each	227101
11-2-16	Supplying, erecting, testing and commissioning of microprocessor based AMF panel suitable for diesel generating set of above 250 kVA up to 320 kVA capacity Three phase, 415 Volts, 50Hz A.C. with all standard features, safeties etc as per specification no. GEN-AMF.	Each	314129
11-2-17	Supplying, erecting, testing and commissioning of Microprocessor based AMF panel suitable for Diesel Generating Set of above 320 kVA up to 400 kVA capacity Three phase, 415 Volts, 50Hz A.C. with all standard features, safeties etc as per specification no. GEN-AMF.	Each	358306
11-2-18	Supplying, erecting, testing and commissioning of microprocessor based AMF panel suitable for diesel generating set of above 400 kVA up to 500 kVA capacity Three phase, 415 Volts, 50Hz A.C. with all standard features, safeties etc as per specification no. GEN-AMF.	Each	440290
11-2-19	Supplying, erecting, testing and commissioning of microprocessor based AMF panel suitable for diesel generating set of above 500 kVA up to 750 kVA capacity Three phase, 415 Volts, 50Hz A.C. with all standard features, safeties etc as per specification no. GEN-AMF.	Each	620657

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
11-2-20	Supplying, erecting, testing and commissioning of Microprocessor based Generator Control Unit (Synchronization panel) panel suitable for diesel generating set of 320 kVA capacity Three phase, 415 Volts, 50Hz A.C. with all standard features and safeties etc as per specification no. GEN-SYNC.	Each	697323
11-2-21	Supplying, erecting, testing and commissioning of Microprocessor based Generator Control Unit (Synchronization panel) panel suitable for diesel generating set of above 320 kVA up to 380/400 kVA capacity Three phase, 415 Volts, 50Hz A.C. with all standard features and safeties etc as per specification no. GEN-SYNC.	Each	783739
11-2-22	Supplying, erecting, testing and commissioning of Microprocessor based Generator Control Unit (Synchronization panel) panel suitable for diesel generating set of above 400 kVA up to 500 kVA capacity Three phase, 415 Volts, 50Hz A.C. with all standard features and safeties etc as per specification no. GEN-SYNC.	Each	812544
11-2-23	Supplying, erecting, testing and commissioning of Microprocessor based Generator Control Unit (Synchronization panel) panel suitable for diesel generating set of above 500 kVA up to 750 kVA capacity Three phase, 415 Volts, 50Hz A.C. with all standard features and safeties etc as per specification no. GEN-SYNC.	Each	1158209
Note	1) In case of new DG set, if AMF/SYNC panel is to be used in lieu of standard panel, reduce rate of Item No 11-2-1 to 11-2-23 by 10% of rate of new AMF panel/SYNC panel.		

11.3 Servicing of DG Set

11-3-1	Carrying out Servicing of DG set up to 50 kVA with/without AMF Panel of any make to ensure smooth running of DG set for 30 mins on load. Checking for abnormal sound and leakages, Carry out visual inspection of all moving parts, oil levels, oil filters, fuel filters, air filters and clean them properly, rectify the minor leakages if any. Inspect alternator, stator and rotor for normal speed & proper frequency, Examine battery charging with monitoring system and recording voltages, checking battery cells gravity and topping up with Distilled water, Checking V belts with necessary adjustment, Checking and retightening of nut bolts including coupling bolts of engine and alternator, Checking & cleaning of radiator and leakage testing Checking of radiator & fuel supply hose pipes, Checking of AVR, excitation diodes, its connections confirming proper output voltage. Checking & resetting of valve tappets, Cleaning of DG set internally using blower, cleaning radiator, Attending breakdowns as and when required during One month period or during VIP visit within 2 hours of intimation and Submit the servicing report to engineer in charge.(Non Comprehensive) as per specification No. GEN-SER-AMC	Job	2398
--------	---	-----	------

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
11-3-2	Carrying out Servicing of DG set from 62.5 kVA to 200 kVA with/without AMF Panel of any make to ensure smooth running of DG set for 30 mins Checking for abnormal sound and leakages, Carry out visual inspection of all moving parts, oil levels, oil filters, fuel filters, air filters and clean them properly, rectify the minor leakages if any. Inspect alternator, stator and rotor for normal speed & proper frequency, Examine battery charging with monitoring system and recording voltages, checking battery cells gravity and topping up with Distilled water, Checking V belts with necessary adjustment, Checking and retightening of nut bolts including coupling bolts of engine and alternator, Checking & cleaning of radiator and leakage testing Checking of radiator & fuel supply hose pipes, Checking of AVR, excitation diodes, its connections confirming proper output voltage. Checking & resetting of valve tappets, Cleaning of DG set internally using blower, cleaning radiator, Attending breakdowns as and when required during One month period or during VIP visit within 2 hours of intimation and Submit the servicing report to engineer in charge.(Non Comprehensive) as per specification No. GEN-SER-AMC	Job	3113
11-3-3	Carrying out Servicing of DG set from 250 kVA to 500 kVA with/without AMF Panel of any make to ensure smooth running of DG set for 30 mins. Checking for abnormal sound and leakages, Carry out visual inspection of all moving parts, oil levels, oil filters, fuel filters, air filters and clean them properly, rectify the minor leakages if any. Inspect alternator, stator and rotor for normal speed & proper frequency, Examine battery charging with monitoring system and recording voltages, checking battery cells gravity and topping up with Distilled water, Checking V belts with necessary adjustment, Checking and retightening of nut bolts including coupling bolts of engine and alternator, Checking & cleaning of radiator and leakage testing Checking of radiator & fuel supply hose pipes, Checking of AVR, excitation diodes, its connections confirming proper output voltage. Checking & resetting of valve tappets, Cleaning of DG set internally using blower, cleaning radiator, Attending breakdowns as and when required during One month period or during VIP visit within 2 hours of intimation and Submit the servicing report to engineer in charge.(Non Comprehensive) as per specification No. GEN-SER-AMC	Job	4411
11-3-4	Carrying out Servicing of DG set from 500 kVA to 750 kVA with/without AMF Panel of any make to ensure smooth running of DG set for 30 mins. Checking for abnormal sound and leakages, Carry out visual inspection of all moving parts, oil levels, oil filters, fuel filters, air filters and clean them properly, rectify the minor leakages if any. Inspect alternator, stator and rotor for normal speed & proper frequency, Examine battery charging with monitoring system and recording voltages, checking battery cells gravity and topping up with Distilled water, Checking V belts with necessary adjustment, Checking and retightening of nut bolts including coupling bolts of engine and alternator, Checking & cleaning of radiator and leakage testing Checking of radiator & fuel supply hose pipes, Checking of AVR, excitation diodes, its connections confirming proper output voltage. Checking & resetting of valve tappets, Cleaning of DG set internally using blower, cleaning radiator, Attending breakdowns as and when required during One month period or during VIP visit within 2 hours of intimation and Submit the servicing report to engineer in charge.(Non Comprehensive) as per specification No. GEN-SER-AMC	Job	5102

Note Item No 11-3-1 to 11-3-4 shall be used for periodical one time servicing of Diesel Generating Set. These items shall not be used for annual maintenance contract

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>11.4 Dismantling</u>			
11-4-1	Dismantling unserviceable DG set up to 50 kVA capacity along with Switchgears & panel, etc. and remaking the site good as original.	Job	1643
11-4-2	Dismantling unserviceable DG set above 50 kVA capacity along with Switchgears & panel, etc. and remaking the site good as original.	per kVA	33

Note **Above rate for dismantling does not include cost of transportation**

Chapter: 12
Water Pumps (WP)

12.1 Centrifugal pumps	(WP-CGP)
12.2 Submersible pumps for Borewells	(WP-SMP)
12.3 Submersible pumps for Openwells	(WP-OSP)
12.4 Accessories	
12.5 Dewatering Pump	(DWP-SMP)
12.6 Pressure Pump	(WP-PP)
12.7 Dismantling	

CHAPTER 12: WATER PUMPS(WP)

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>12.1 Centrifugal pumps</u>			
12-1-1	Supplying & erecting Minimum three & above star rated Centrifugal water pump (Monoblock), 230V, Single phase 50 cycles A.C. supply of 0.375 kW/0.5 HP with discharge 36/9 Litres per Minute (LPM) for head of 6/21m & 25 mm suction/ 25 mm delivery pipe on provided C.C. foundation as per specification No. WP-CGP	Each	6345
12-1-2 (New)	Supplying & erecting Minimum three & above star rated Centrifugal water pump (Monoblock), 230V, Single phase 50 cycles A.C. supply of 0.375 kW/0.5 HP with discharge 285/67 Litres per Minute (LPM) for head of 6/13.8 m & 40 mm suction/ 40 mm delivery pipe on provided C.C. foundation as per specification No. WP-CGP	Each	7928
12-1-3	Supplying & erecting Minimum three & above star rated Centrifugal water pump (Monoblock), 230V, Single phase 50 cycles A.C. supply of 1.125 kW/1.5HP with discharge 198/50 Litres per Minute (LPM)) for head of 15/37.5 m & 40 mm suction/ 32 mm delivery pipe on provided C.C. foundation as per specification No. WP-CGP	Each	12151
12-1-4	Supplying & erecting Minimum three & above star rated Centrifugal water pump (Monoblock), 230V, Single phase 50 cycles A.C. supply of 1.5 kW/2 HP with discharge 600/140 Litres per Minute (LPM) for head of 8/22 m & 50 mm suction/ 50 mm delivery pipe on provided C.C. foundation as per specification No. WP-CGP	Each	14810
12-1-5	Supplying & erecting Minimum three & above star rated Centrifugal water pump (Monoblock), 415V, three phase 50 cycles A.C. supply of 1.5 KW/2 HP with discharge 600/140 Litres per Minute (LPM) for head of 8/22 m and 50 mm suction/ 40 mm delivery pipe on provided C.C. foundation as per specification No. WP-CGP	Each	16725
12-1-6	Supplying & erecting Minimum three & above star rated Centrifugal water pump (Monoblock), 415V, three phase 50 cycles A.C. supply of 2.25 KW/ 3 HP with discharge 720/165 Litres per Minute (LPM) for head of 12/26 m and 65 mm suction/ 50 mm delivery pipe on provided C.C. foundation as per specification No. WP-CGP	Each	21503
12-1-7	Supplying & erecting Minimum three & above star rated Centrifugal water pump (Monoblock), 415V, three phase 50 cycles A.C. supply of 2.25 KW/3 HP with discharge 600/110 Litres per Minute (LPM) for head of 13/43 m and 65 mm suction/ 50 mm delivery pipe on provided C.C. foundation as per specification No. WP-CGP	Each	21749
12-1-8	Supplying & erecting minimum three & above star rated Centrifugal water pump (Monoblock), 415 V, three phase 50 cycles A.C. supply of 3.75 KW/5 HP with discharge 420/120 Litres per Minute (LPM) for head of 18/51 m and 65 mm suction/ 50 mm delivery pipe on provided C.C. foundation as per specification No. WP-CGP	Each	26934
12-1-9	Supplying & erecting minimum three & above star rated Centrifugal water pump (Monoblock), 415 V, three phase 50 cycles A.C. supply of 3.75 KW/5 HP with discharge 715/200 Litres per Minute (LPM) for head of 17/39 m and 65 mm suction/ 50 mm delivery pipe on provided C.C. foundation as per specification No. WP-CGP	Each	26851

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
12-1-10	Supplying & erecting minimum three & above star rated Centrifugal water pump (Monoblock), 415 V, three phase 50 cycles A.C. supply of 5.625 KW/7.5 HP with discharge of 780/170 Litres per Minute (LPM) for head of 33/54 m and 80mm suction/ 65mm delivery pipe of size, on provided C.C. foundation as per specification No. WP-CGP	Each	36150
12-1-11	Supplying & erecting minimum three & above star rated Centrifugal water pump (Monoblock), 415 V, three phase 50 cycles A.C. supply of 7.5 KW/10 HP with discharge 1150/600 Litres per Minute (LPM) for head of 24/69 m and 65 mm suction/ 50 mm delivery pipe of size, on provided C.C. foundation as per specification No. WP-CGP	Each	44367
12-1-12	Supplying & erecting minimum three & above star rated Centrifugal water pump (Monoblock), 415 V, three phase 50 cycles A.C. supply of 9.375 KW/ 12.5 HP with discharge 1320/670 Litres per Minute (LPM) for head of 21/52 m and 80 mm suction/ 65 mm delivery pipe of size, on provided C.C. foundation as per specification No. WP-CGP	Each	52466
12-1-13	Supplying & erecting minimum three & above star rated Centrifugal water pump (Monoblock), 415 V, three phase 50 cycles A.C. supply of 11.25 KW/ 15 HP with discharge 1480/540 Litres per Minute (LPM) for head of 24/74 m and 80 mm suction/ 65 mm delivery pipe , on provided C.C. foundation as per specification No. WP-CGP	Each	57513
12-1-14	Supplying & erecting minimum three & above star rated Centrifugal water pump (Monoblock), 415 V, three phase 50 cycles A.C. supply of 15 KW/20 HP with discharge 2000/600 Litres per Minute (LPM) for head of 27/80 m and 75mm suction/ 65mm delivery pipe of size, on provided C.C. foundation as per specification No. WP-CGP	Each	77523
12-1-15	Supplying & erecting minimum three & above star rated Centrifugal water pump (Monoblock), 415 V, three phase 50 cycles A.C. supply of 18.75 KW/25 HP with discharge 1500/800 Litres per Minute (LPM) for head of 48/60 m and 100mm suction/ 80mm delivery pipe of size, on provided C.C. foundation as per specification No. WP-CGP	Each	94192
12-1-16	Supplying & erecting minimum three & above star rated Centrifugal water pump (Monoblock), 415 V, three phase 50 cycles A.C. supply of 22.5 KW/30 HP with discharge 1700/400 Litres per Minute (LPM) for head of 48/69 m and 100mm suction/ 80mm delivery pipe of size, on provided C.C. foundation as per specification No. WP-CGP	Each	108959

12.2 Submersible pumps for Borewell (Wp-SMP)

12-2-1	Supplying and erecting minimum Three & above star rated submersible pump set of 2.25 KW/3 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 120 to 390 LPM discharge at 55 to 11 m head & discharge & delivery Pipe of Size-50mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	31939
12-2-2	Supplying and erecting minimum Three & above star rated submersible pump set of 2.25 KW/3 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 120 to 475 LPM discharge at 36 to 10 m head & discharge & delivery Pipe of Size-50 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	32102

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
12-2-3	Supplying and erecting minimum Three & above star rated submersible pump set of 3.75 KW/5 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 60 to 290 LPM discharge at 112 to 12 m head & discharge & delivery Pipe of Size-50mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	41046
12-2-4	Supplying and erecting minimum Three & above star rated submersible pump set of 2.25 KW/3 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 100 to 450 LPM discharge at 53 to 5 m head & discharge & delivery Pipe Size-50mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	32544
12-2-5	Supplying and erecting minimum Three & above star rated submersible pump set of 3 KW/4 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 130 to 390 LPM discharge at 64 to 18 m head & discharge & delivery Pipe of Size-50mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	35314
12-2-6	Supplying and erecting minimum Three & above star rated submersible pump set of 3.75 KW/5 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 210 to 860 LPM discharge at 38 to 13 m head & discharge & delivery Pipe of Size-65mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	35319
12-2-7	Supplying and erecting minimum Three & above star rated submersible pump set of 3 KW/4 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 200 to 750 LPM discharge at 29 to 7 m head & discharge & delivery Pipe of Size-75 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	36627
12-2-8	Supplying and erecting minimum Three & above star rated submersible pump set of 5.625 KW/7.5 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 100 to 400 LPM discharge at 132 to 27 m head & discharge & delivery pipe of Size-50 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	44743
12-2-9	Supplying and erecting minimum Three & above star rated submersible pump set of 3.75KW/5 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 120 to 390 LPM discharge at 88 to 26 m head & discharge & delivery pipe of Size-50 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	36916
12-2-10	Supplying and erecting minimum Three & above star rated submersible pump set of 5.625 KW/7.5 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 110 to 510 LPM discharge at 107 to 30 m head & discharge & delivery pipe of Size-50 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	43939
12-2-11	Supplying and erecting minimum Three & above star rated submersible pump set of 3 KW/4 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 130 to 390 LPM discharge at 64 to 18 m head & discharge & delivery pipe of Size-50 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	35962
12-2-12	Supplying and erecting minimum Three & above star rated submersible pump set of 4.5 KW/6 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 200 to 860 LPM discharge at 47 to 10 m head & discharge & delivery pipe of Size-65 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	39498

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
12-2-13	Supplying and erecting minimum Three & above star rated submersible pump set of 3 KW/4 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 350 to 750 LPM discharge at 34 to 8 m head & discharge & delivery pipe of Size-65 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	35969
12-2-14	Supplying and erecting minimum Three & above star rated submersible pump set of 3.75 KW/5 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 440 to 900 LPM discharge at 37 to 10 m head & discharge & delivery pipe of Size-75 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	39151
12-2-15	Supplying and erecting minimum Three & above star rated submersible pump set of 3.75 KW/5 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 120 to 390 LPM discharge at 67 to 21 m head & discharge & delivery pipe of Size-50 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	40268
12-2-16	Supplying and erecting minimum Three & above star rated submersible pump set of 4.5 KW/6 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 90 to 400 LPM discharge at 115 to 16 m head & discharge & delivery pipe of Size-50 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	42531
12-2-17	Supplying and erecting minimum Three & above star rated submersible pump set of 3.75 KW/5 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 120 to 475 LPM discharge at 60 to 17 m head & discharge & delivery pipe of Size-50 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	34793
12-2-18	Supplying and erecting minimum Three & above star rated submersible pump set of 5.625 KW/7.5 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 410 to 970 LPM discharge at 48 to 8 m head & discharge & delivery pipe of Size-75 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	43702
12-2-19	Supplying and erecting minimum Three & above star rated submersible pump set of 4.5 KW/6 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 60 to 180 LPM discharge at 177 to 88 m head & discharge & delivery pipe of Size-50 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	52614
12-2-20	Supplying and erecting minimum Three & above star rated submersible pump set of 5.625 KW/7.5 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 200 to 860 LPM discharge at 68 to 6 m head & discharge & delivery pipe of Size-65 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	50618
12-2-21	Supplying and erecting minimum Three & above star rated submersible pump set of 3.75 KW/5 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 40 to 190 LPM discharge at 120 to 32 m head & discharge & delivery pipe of Size-65 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	49659
12-2-22	Supplying and erecting minimum Three & above star rated submersible pump set of 5.625 KW/7.5 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 60 to 330 LPM discharge at 209 to 14 m head & discharge & delivery pipe of Size-50 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	57374

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
12-2-23	Supplying and erecting minimum Three & above star rated submersible pump set of 5.625 KW/7.5 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 60 to 300 LPM discharge at 257 to 15 m head & discharge & delivery pipe of Size-50 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	64433
12-2-24	Supplying and erecting minimum Three & above star rated submersible pump set of 5.625 KW/7.5 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 50 to 330 LPM discharge at 169 to 18 m head & discharge & delivery pipe of Size-50 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	53174
12-2-25	Supplying and erecting minimum Three & above star rated submersible pump set of 7.5 KW/10 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 200 to 800 LPM discharge at 65 to 8 m head & discharge & delivery pipe of Size-75 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	52856
12-2-26	Supplying and erecting minimum Three & above star rated submersible pump set of 7.5 KW/10 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 200 to 800 LPM discharge at 79 to 9 m head & discharge & delivery pipe of Size-80 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	48347
12-2-27	Supplying and erecting minimum Three & above star rated submersible pump set of 7.5 KW/10 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 110 to 510 LPM discharge at 154 to 35 m head & discharge & delivery pipe of Size-80 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	58296
12-2-28	Supplying and erecting minimum Three & above star rated submersible pump set of 4.5 KW/6 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 50 to 330 LPM discharge at 171 to 16 m head & discharge & delivery pipe of Size-50 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	50001
12-2-29	Supplying and erecting minimum Three & above star rated submersible pump set of 4.5 KW/6 HP with 415 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 50 to 330 LPM discharge at 171 to 16 m head & discharge & delivery pipe of Size-50 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	66444
12-2-30	Supplying and erecting minimum Three & above star rated submersible pump set of 2.25 KW/3 HP with 230 V, 50 c/s AC supply suitable for 150 mm dia. borewell suitable for 10 to 730 LPM discharge at 43 to 6 m head & discharge & delivery pipe of Size-75 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	37159
12-2-31	Supplying and erecting minimum Three & above star rated submersible pump set of 1.5 KW/2 HP with 230 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 30 to 300 LPM discharge at 50 to 20 m head & discharge & delivery pipe of Size-50 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	23262
12-2-32	Supplying and erecting minimum Three & above star rated submersible pump set of 1.5 KW/2 HP with 230 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 30 to 150 LPM discharge at 61 to 31 m head & discharge & delivery pipe of Size-50 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	24093

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
12-2-33	Supplying and erecting minimum Three & above star rated submersible pump set of 0.75 KW/1 HP with 230 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 10 to 60 LPM discharge at 88 to 33 m head & discharge & delivery pipe of Size-32 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	19463
12-2-34	Supplying and erecting minimum Three & above star rated submersible pump set of 1.5 KW/2 HP with 230 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 155 to 425 LPM discharge at 28 to 11 m head & (max. efficiency at 24 m head & 130 lpm) discharge & delivery pipe of Size-65 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	23452
12-2-35	Supplying and erecting minimum Three & above star rated submersible pump set of 2.25 KW/3 HP with 230 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 70 to 170 LPM discharge at 74 to 38 m head & discharge & delivery pipe of Size-50 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	24705
12-2-36	Supplying and erecting minimum Three & above star rated submersible pump set of 1.5 KW/2 HP with 230 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 30 to 140 LPM discharge at 61 to 23 m head & discharge & delivery pipe of Size-50 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	24022
12-2-37	Supplying and erecting minimum Three & above star rated submersible pump set of 2.25 KW/3 HP with 230 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 150 to 380 LPM discharge at 33 to 7 m head & discharge & delivery pipe of Size-50 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	22978
12-2-38	Supplying and erecting minimum Three & above star rated submersible pump set of 1.125 KW/1.5 HP with 230 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 10 to 100 LPM discharge at 137 to 40 m head & discharge & delivery pipe of Size-32 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	21255
12-2-39	Supplying and erecting minimum Three & above star rated submersible pump set of 1.5 KW/2 HP with 230 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 10 to 95 LPM discharge at 167 to 36 m head & discharge & delivery pipe of Size-32 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	25704
12-2-40	Supplying and erecting minimum Three & above star rated submersible pump set of 1.125 KW/1.5 HP with 230 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 10 to 95 LPM discharge at 94 to 25 m head & discharge & delivery pipe of Size-40 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	20417
12-2-41	Supplying and erecting minimum Three & above star rated submersible pump set of 1.5 KW/2 HP with 230 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 10 to 100 LPM discharge at 120 to 43 m head & discharge & delivery pipe of Size-32 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	23848
12-2-42	Supplying and erecting minimum Three & above star rated submersible pump set of 1.5 kw/2 HP with 230 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 10 to 100 LPM discharge at 144 to 46 m head & discharge & delivery pipe of Size-32 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	26880

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
12-2-43	Supplying and erecting minimum Three & above star rated submersible pump set of 2.25 KW/3 HP with 230 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 120 to 370 LPM discharge at 35 to 17 m head & discharge & delivery pipe of Size-65 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	30021
12-2-44	Supplying and erecting minimum Three & above star rated submersible pump set of 1.5 KW/2 HP with 230 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 10 to 60 LPM discharge at 166 to 55 m head & discharge & delivery pipe of Size-40 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	31211
12-2-45	Supplying and erecting minimum Three & above star rated submersible pump set of 0.75 KW/1 HP with 230 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 10 to 40 LPM discharge at 95 to 42 m head & discharge & delivery pipe of Size-32 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	19857
12-2-46	Supplying and erecting minimum Three & above star rated submersible pump set of 1.125 KW/1.5 HP with 230 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 10 to 100 LPM discharge at 110 to 15 m head & discharge & delivery pipe of Size-40 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	21011
12-2-47	Supplying and erecting minimum Three & above star rated submersible pump set of 1.5 KW/2 HP with 230 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 30 to 140 LPM discharge at 73 to 28 m head & discharge & delivery pipe of Size-50 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	26404
12-2-48	Supplying and erecting minimum Three & above star rated submersible pump set of 1.5 KW/2 HP with 230 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 30 to 140 LPM discharge at 85 to 32 m head & discharge & delivery pipe of Size-40 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	27975
12-2-49	Supplying and erecting minimum Three & above star rated submersible pump set of 1.125 KW/1.5 HP with 230 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 10 to 40 LPM discharge at 121 to 64 m head & discharge & delivery pipe of Size-32 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	23919
12-2-50	Supplying and erecting minimum Three & above star rated submersible pump set of 1.125 KW/1.5 HP with 230 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 10 to 50 LPM discharge at 150 to 40 m head & discharge & delivery pipe of Size-32 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	28327
12-2-51	Supplying and erecting minimum Three & above star rated submersible pump set of 2.25 KW/3 HP with 415 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 60 to 170 LPM discharge at 97 to 30 m head & discharge & delivery pipe of Size-40 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	25850
12-2-52	Supplying and erecting minimum Three & above star rated submersible pump set of 1.5 KW/2 HP with 230 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 10 to 70 LPM discharge at 170 to 37 m head & discharge & delivery pipe of Size-40 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	31398

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
12-2-53	Supplying and erecting minimum Three & above star rated submersible pump set of 2.25 KW/3 HP with 415 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 10 to 240 LPM discharge at 74 to 25 m head & discharge & delivery pipe of Size-50 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	29405
12-2-54	Supplying and erecting minimum Three & above star rated submersible pump set of 1.5 KW/2 HP with 230 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 20 to 100 LPM discharge at 101 to 410 m head & discharge & delivery pipe of Size-40 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	26216
12-2-55	Supplying and erecting minimum Three & above star rated submersible pump set of 2.25 KW/3 HP with 415 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 35 to 120 LPM discharge at 144 to 35 m head & discharge & delivery pipe of Size-40 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	33837
12-2-56	Supplying and erecting minimum Three & above star rated submersible pump set of 2.25 KW/3HP with 415 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 50 to 180 LPM discharge at 98 to 39 m head & discharge & delivery pipe of Size-50 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	31101
12-2-57	Supplying and erecting minimum Three & above star rated submersible pump set of 3.75 KW/5 HP with 415 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 50 to 130 LPM discharge at 162 to 77 m head & discharge & delivery pipe of Size-40 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	36431
12-2-58	Supplying and erecting minimum Three & above star rated submersible pump set of 3 KW/4 HP with 415 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 10 to 60 LPM discharge at 182 to 42 m head & discharge & delivery pipe of Size-32 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	41531
12-2-59	Supplying and erecting minimum Three & above star rated submersible pump set of 3 KW/4 HP with 415 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 10 to 60 LPM discharge at 296 to 44 m head & discharge & delivery pipe of Size-32 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	36715
12-2-60	Supplying and erecting minimum Three & above star rated submersible pump set of 3.75 KW/5 HP with 415 V, 50 c/s AC supply suitable for 100 mm dia. borewell suitable for 50 to 230 LPM discharge at 131 to 10 m head & discharge & delivery pipe of Size-65 mm diameter with a necessary H type clamps as per specification No. WP-SMP	Each	40931

12.3 Submersible pumps for Openwells

12-3-1	Supplying and erecting minimum Three & above star rated submersible pump set suitable for erection on open well of 2.25 KW/3 HP with 415 V 50 c/s. A.C. supply, having delivery head from 27 to 9 m and discharge from 300 to 660 litres. per minute & pipe of Suction 65mm /Delivery 50 mm diameter erected with necessary H type clamps as per specification No. WP-OSP	Each	24793
--------	---	------	-------

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
12-3-2	Supplying and erecting minimum Three & above star rated submersible pump set suitable for erection on open well of 3.75 KW/5 HP with 415 V 50 c/s. A.C. supply, having delivery head from 43 to 11m and discharge from 120 to 840 litres. per minute & pipe of Suction 65mm / Delivery 50 mm diameter erected with necessary H type clamps as per specification No. WP-OSP	Each	27221
12-3-3	Supplying and erecting minimum Three & above star rated submersible pump set suitable for erection on open well of 5.625 KW/7.5 HP with 415 V 50 c/s. A.C. supply, having delivery head from 36 to 14m and discharge from 225 to 1680 litres. per minute& pipe of Suction 75 mm/Delivery 65 mm diameter erected with necessary H type clamps as per specification No. WP-OSP	Each	35224
12-3-4	Supplying and erecting minimum Three & above star rated submersible pump set suitable for erection on open well of 5.625 KW/7.5 HP with 415 V 50 c/s. A.C. supply, having delivery head from 57 to 22 m and discharge from 120 to 900 litres. . per minute & pipe of Suction 75 mm/Delivery 65 mm diameter erected with necessary H type clamps as per specification No. WP-OSP	Each	37747
12-3-5	Supplying and erecting minimum Three & above star rated 1 phase, 230 V, 50 Hz, submersible pump set of 0.75 KW/1HP for erection on open well, pump having delivery head from 30 to 15 m and discharge from 30 to 270 litres. per minute & pipe of Suction 32 mm/Delivery 25 mm diameter erected with necessary H type clamps as per specification No. WP-OSP	Each	18655
12-3-6	Supplying and erecting minimum Three & above star rated 1 phase, 230 V, 50 Hz, submersible pump set of 1.5 KW/2HP suitable for erection on open well, pump having delivery head from 29 to 7 m and discharge from 30 to 600 litres. . per minute & pipe of Suction 50 mm/Delivery 50 mm diameter erected with necessary H type clamps as per specification No. WP-OSP	Each	19296
12-3-7 (New)	Supplying and erecting minimum Three & above star rated 3 phase, 415 V, 50 Hz, submersible pump set of 7.5 KW/10HP suitable for erection on open well, pump having delivery head from 72 to 28 m and discharge from 120 to 840 litres. per minute & pipe of Suction 65 mm/Delivery 50 mm diameter erected with necessary H type clamps as per specification No. WP-OSP	Each	52111

12.4 Accessories

12-4-1	Supplying & erecting D.O.L Starter suitable for 250 V, Single phase 50 cycles with overload element with necessary materials and connected to supply up to 3 H.P.	Each	1166
12-4-2	Supplying & erecting D.O.L Starter suitable for 415 V, 3 phase 50 cycles with no volt coil and overload element with necessary materials and connected to supply up to 7.5 H.P.	Each	1865
12-4-3	Supplying & erecting D.O.L Starter suitable for 415 V, 3 phase 50 cycles with no volt coil and overload element with necessary materials and connected to supply for 10 H.P.	Each	2963
12-4-4	Supplying & erecting Fully Automatic Star/delta starter suitable for 12.5 H.P to 15 H.P. for 3 phase squirrel cage motor totally enclosed with overload and no volt relay complete erected on provided angle iron frame.	Each	7804

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
12-4-5	Supplying & erecting Fully Automatic Star/delta starter suitable for above 15 H.P. up to 25 H.P. for 3 phase squirrel cage motor totally enclosed with overload and no volt relay complete erected on provided angle iron frame.	Each	13202
12-4-6	Supplying & erecting Fully Automatic Star/delta starter suitable for above 25 H.P. up to 35 H.P. for 3 phase squirrel cage motor totally enclosed with overload and no volt relay complete erected on provided angle iron frame.	Each	24120
12-4-7	Supplying and erecting pump protection relay comprising current sensing phase failure and UV+OV relay with dry run and overload protection suitable for 3 phase pumps.	Each	2959
12-4-8	Supplying & erecting flat flexible 3 core 2.5 sq.mm PVC sheathed submersible type copper cable suitably clamped at fixed intervals with column pipe assembly complete.	m	139
12-4-9	Supplying & erecting flat flexible 3 core 4 sq.mm PVC sheathed submersible type copper cable suitably clamped at fixed intervals with column pipe assembly complete.	m	192
12-4-10	Supplying & erecting flat flexible 3 core 6 sq.mm PVC sheathed submersible type copper cable suitably clamped at fixed intervals with column pipe assembly complete.	m	268
12-4-11	Supplying & erecting flat flexible 3 core 1.5 sq.mm PVC sheathed submersible type copper cable suitably clamped at fixed intervals with column pipe assembly complete.	m	99
12-4-12 (New)	Supplying & erecting flat flexible 3 core 10 sq.mm PVC sheathed submersible type copper cable suitably clamped at fixed intervals with column pipe assembly complete.	m	429
12-4-13 (New)	Supplying & erecting flat flexible 3 core 16 sq.mm PVC sheathed submersible type copper cable suitably clamped at fixed intervals with column pipe assembly complete.	m	652
12-4-14	Supplying & erecting Water level controller 230/415 V, A.C. , Two way under ground tank operation only.	Each	1303
12-4-15	Supplying & erecting Water level controller 230/415 V, A.C. , Four way under ground & Over head tank operation only.	Each	1356
12-4-16	Supplying & erecting PVC coated 5 mm dia. Brass sensor/ electrode duly wired with nuts & bolts complete (Set of 3 Nos)	Each	296
12-4-17	Supplying & erecting automatic control panel for 3 Phase , 415 volt, A.C, Submersible/centrifugal pump set up to 7.5 HP consisting of DOL starter having relay range 9-14 AMP,S.P.P., Combined ammeter/ voltmeter, phase indicating lamp enclosed in CRCA powder coated Vibration proof enclosure with IP 54 protection. Control Panel should offer single phasing, phase reversal, phase imbalance etc .	Each	6063
12-4-18	Supplying & erecting automatic control panel for 3 Ph, 415 volt, A.C. Submersible/centrifugal pump set up to 7.5 HP - 10 H.P. consisting of DOL starter having relay range 13-21 AMP,S.P.P., Combined ammeter/voltmeter, phase indicating lamp enclosed in CRCA powder coated Vibration proof enclosure with IP 54 protection. Control Panel should offer single phasing, phase reversal, phase imbalance etc.	Each	6897

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
12-4-19	Supplying & erecting automatic control panel for 3 Ph, 415 volt, A.C. Submersible/centrifugal pump set up to 7.5 HP - 10 H.P. consisting of DOL starter having relay range 28-42 AMP,S.P.P., Combined ammeter/voltmeter, phase indicating lamp enclosed in CRCA powder coated Vibration proof enclosure with IP 54 protection. Control Panel should offer single phasing, phase reversal, phase imbalance etc.	Each	7461
12-4-20	Supplying & erecting automatic control panel for 1 Ph, 230 volt, A.C. Submersible/centrifugal pump set up to 3 HP consisting of DOL starter Of suitable relay range S.P.P., Combined ammeter/ voltmeter, phase indicating lamp enclosed in CRCA powder coated Vibration proof enclosure with IP 54 protection.	Each	5018
12-4-21	Supplying & erecting automatic control panel for 3 Ph, 415 volt, A.C. Submersible/centrifugal pump set up to 20 HP consisting of Star Delta starter having relay range 13-21 Amp, S.P.P., Combined ammeter/ voltmeter, phase indicating lamp enclosed in CRCA powder coated Vibration proof enclosure with IP 54 protection. Control Panel should offer single phasing, phase reversal, phase imbalance etc.	Each	15144
12-4-22	Supplying & erecting automatic control panel for 3 Ph, 415 volt, A.C. Submersible/centrifugal pump set up to 20 HP consisting of Star Delta starter having relay range 28-42 Amp, S.P.P., Combined ammeter/ voltmeter, phase indicating lamp enclosed in CRCA powder coated Vibration proof enclosure with IP 54 protection. Control Panel should offer single phasing, phase reversal, phase imbalance etc .	Each	18375
12-4-23	Supplying & erecting automatic control panel for 3 Ph, 415 volt, A.C. Submersible/centrifugal pump set up to 30 HP consisting of Star Delta starter having relay range 30-50 Amp, S.P.P., Combined ammeter/ voltmeter, phase indicating lamp enclosed in CRCA powder coated Vibration proof enclosure with IP 54 protection. Control Panel should offer single phasing, phase reversal, phase imbalance etc.	Each	28795
12-4-24	Supplying & erecting Soft Starters for 3 phase 415 volt, A.C. water pump up to 15 H.P. consisting of RS-485 Communication port, Compact size & range, internal by-pass contactor, 400% max. allowed overload of nominal current, with Compatibility with teleservice software "Remote Drive" on internet, having protection for motor overload, phase sequence, excess start time, phase loss, power circuit fault, supply frequency, communication failure etc. complete.	Each	33692
12-4-25	Supplying & erecting Soft Starters for 3 phase 415 volt, A.C. water pump 25 H.P. consisting of RS-485 Communication port, Compact size & range, internal by-pass contactor, 400% max. allowed overload of nominal current, with Compatibility with teleservice software "Remote Drive" on internet, having protection for motor overload, phase sequence, excess start time, phase loss, power circuit fault, supply frequency, communication failure etc. complete.	Each	45416
12-4-26	Supplying & erecting automatic control panel for 3 Ph, 415 volt, /centrifugal pump set up to 10 HP consisting of Star Delta starter having relay range 9-14 Amp, S.P.P., Combined ammeter/ voltmeter, phase indicating lamp enclosed in CRCA powder coated Vibration proof enclosure with IP 54 protection. Control Panel should offer single phasing, phase reversal, phase imbalance etc.	Each	11852

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
12-4-27	Supplying & erecting automatic control panel for 3 Ph, 415 volt, /centrifugal pump set up to 10 - 15 HP consisting of Star Delta starter having relay range 13-22 Amp, S.P.P., Combined ammeter/ voltmeter, phase indicating lamp enclosed in CRCA powder coated Vibration proof enclosure with IP 54 protection. Control Panel should offer single phasing, phase reversal, phase imbalance etc.	Each	12005
12-4-28	Supplying & erecting Float sensor switch for water level controller working on 250V & rated current 8A, with 2 mtr. wire & High quality of wire & plastic body.	Each	452
12-4-29	Supplying & erecting directly operated Single phasing preventer complete erected and connected to supply to operate in case of single phasing with guarantee for minimum one year.	Each	830

12.5 Dewatering Pump

12-5-1	Supplying & erecting Dewatering Monoblock pump set 415V, 3 phase, 50C/s, A.C. supply of 2.25KW/ 3 H.P. , of 12 to 26 m head with 560 to 70 LPM discharge, 10.5mm Solid Handling Capacity, non clogging minimised abrasive wear, large impeller clearance & maintenance free pump set with water proof cable duly sealed with epoxy material built in protection to prevent the motor from burn out due to abnormal operation. specially designed high efficiency motor with F class insulation & the pump mechanically sealed in the oil chamber, etc. complete as per specification no. DWP- SMP	Each	41926
12-5-2	Supplying & erecting Dewatering Monoblock pump set 415V, 3 phase, 50C/s, A.C. supply of 3.73KW/ 5 H.P of 9 to 18 m head with 1125 to 500 LPM discharge, 15.5mm Solid Handling Capacity, non-clogging minimised abrasive wear, large impeller clearance & maintenance free pump set with waterproof cable duly sealed with epoxy material built in protection to prevent the motor from burn out due to abnormal operatio+B77n, specially designed high efficiency motor with F class insulation & the pump mechanically sealed in the oil chamber, etc. complete as per specification no. DWP- SMP	Each	57659
12-5-3	Supplying & erecting Dewatering Monoblock pump set 415V, 3 phase, 50C/s, A.C. supply of 5.5KW/ 7.5 H.P. , of 21 to 36 m head with 910 to 190 LPM discharge, 14.5mm Solid Handling Capacity, non-clogging minimised abrasive wear, large impeller clearance & maintenance free pump set with water proof cable duly sealed with epoxy material built in protection to prevent the motor from burn out due to abnormal operation. specially designed high efficiency motor with F class insulation & the pump mechanically sealed in the oil chamber, etc. complete as per specification no. DWP- SMP	Each	67671

12.6 Pressure Pump

12-6-1	Supplying & erecting Pressure Booster Pump, single phase, 50C/s, A.C. supply of 0.375 KW/ 0.5 H.P. , With discharge of 120 to 12 LPM for 10 to 40 Mtr Head & 25 mm suction/ 25 mm delivery pipe, for Domestic Pressure boosting applications.	Each	23007
12-6-2	Supplying & erecting Pressure Booster Pump, single phase, 50C/s, A.C. supply of 0.75 KW/ 1 H.P. , With discharge of 480 to 13 LPM for 10 to 50 Mtr Head & 25 mm suction/ 25 mm delivery pipe, for Domestic Pressure boosting applications.	Each	24797

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
12-6-3	Supplying & erecting Pressure Booster Pump, single phase, 50C/s, A.C. supply of 1.125 KW/1.5 H.P. , With discharge of 480 to 31 LPM for 10 to 50 Mtr Head & 25 mm suction/ 25 mm delivery pipe, for Domestic Pressure boosting applications.	Each	27437
<i>12.7 Dismantling Material</i>			
12-7-1	Dismantling the existing Monoblock / open well submersible water pump set centrifugal type without pipeline complete and making the site clear.	HP	93
12-7-2	Dismantling the existing ejecto type water pump set without pipeline complete and making the site clear.	HP	93
12-7-3	Dismantling the existing ejecto pump with PVC pipeline.	Each	1079
12-7-4	Dismantling the existing ejecto pump with GI pipeline up to 10 m depth.	Each	2837
12-7-5	Dismantling the existing submersible pump with PVC pipeline.	Each	1079
12-7-6	Dismantling the existing submersible pump with GI pipeline up to 10m depth. (For additional depth of each 3 m or part thereof add Rs.50/- per 3 m, in the rates)	Each	2837
Note (New)	Select a suitable water pump for underground / overhead water tank so that the tank can fill within 2 Hrs.		

Chapter: 13

Fire Fighting & Fire Alarm System (FF)

13.1 Main Fire Pumps (Single Stage Centrifugal)	(FF-MFP/SSC)
13.2 Jockey Pumps (Centrifugal)	(FF-MFP/JP)
13.3 Booster Pump	(FF-MFP/BP)
13.4 Main Fire Pump Diesel Engine Driven (Centrifugal)	(FF-MFP/DP)
13.5 Fire Pump Control Panel	(FF-FCP)
13.6 Pipes	(FF-PP)
13.7 Valves	(FF-FV)
13.8 Fire Fighting Accessories	(FF-FFA)
13.9 Conventional Fire Alarm System	(FF-FAS)
13.10 Intellingent Addressable Fire Alarm System	(FF-AFAS)
13.11 P A System	(FF-PAS)
13.12 Sprinklers	(FF-SPR)
13.13 Fire Sealant System	(FF-FRM)
13.14 Fire Safety Audit	
13.15 Fire Extinguisher	

Chapter 13 : FIRE FIGHTING & FIRE ALARM SYSTEM

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)

13.1 Main Fire Pumps (Single Stage Centrifugal) (FF-MFP/SSC)

13-1-1	<p>Supplying, installation, testing and commissioning of main fire pump (MFP / EP) suitable for water discharge of 1400 to 1600 LPM at 60 to 50 m head driven by electric motor 415 volts, 3 phase 50 Hz, AC supply of 22kW or of suitable kW capacity for manual/automatic operation and consisting of following :</p> <p>(a) Horizontal type, single stage, centrifugal/split casing pump of cast iron body & bronze impeller with stainless steel shaft (SS410 grade), mechanical seal conforming to IS 1520.</p> <p>(b) Squirrel cage induction motor, TEFC, synchronous speed 3000 RPM, suitable for operation with IP 55 protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-325.</p> <p>(c) M.S. fabricated common base plate, coupling, coupling guard, foundation bolts etc. as required.</p> <p>(d) Erected on provided suitable size cement concrete foundation duly plastered with anti vibration pads with perfect aligning, proper levelling complete pump set with accessories duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003) complete, as per specification no. FF-MFP/SSC/EP</p>	Each	122099
13-1-2 (New)	<p>Supplying, installation, testing and commissioning of main fire pump (MFP / EP) suitable for water discharge of 1600 to 1800 LPM at 70 to 55 m head driven by electric motor 415 volts, 3 phase 50 Hz, AC supply of 30kW or of suitable kW capacity for manual/automatic operation and consisting of following :</p> <p>(a) Horizontal type, single stage, centrifugal/split casing pump of cast iron body & bronze impeller with stainless steel shaft (SS410 grade), mechanical seal conforming to IS 1520.</p> <p>(b) Squirrel cage induction motor, TEFC, synchronous speed 3000 RPM, suitable for operation with IP 55 protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-325.</p> <p>(c) M.S. fabricated common base plate, coupling, coupling guard, foundation bolts etc. as required.</p> <p>(d) Erected on provided suitable size cement concrete foundation duly plastered with anti vibration pads with perfect aligning, proper levelling complete pump set with accessories duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003) complete, as per specification no. FF-MFP/SSC/EP</p>	Each	170800

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
13-1-3	<p>Supplying, installation, testing and commissioning of main fire pump (MFP / EP) suitable for water discharge of 1800 to 2280 LPM at 80 to 60 m head driven by electric motor 415 volts, 3 phase 50 Hz, AC supply of 37kW or of suitable kW capacity for manual/automatic operation and consisting of following :</p> <p>(a) Horizontal type, single stage, centrifugal/split casing pump of cast iron body & bronze impeller with stainless steel shaft(SS410 grade), mechanical seal conforming to IS 1520.</p> <p>(b) Squirrel cage induction motor, TEFC, synchronous speed 3000 RPM, suitable for operation with IP 55 protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-325.</p> <p>(c) M.S. fabricated Common base plate, coupling, coupling guard, foundation bolts etc. as required.</p> <p>(d) Erected on provided suitable size cement concrete foundation duly plastered with anti vibration pads with perfect aligning, proper levelling complete pump set with accessories duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003) complete, as per specification no. FF-MFP/SSC/EP</p>	Each	207756
13-1-4 (New)	<p>Supplying, installation, testing and commissioning of main fire pump (MFP / EP) suitable for water discharge of 2280 to 2850LPM at 80 to 60 m head driven by electric motor 415 volts, 3 phase 50 Hz, AC supply of 45kW or of suitable kW capacity for manual/automatic operation and consisting of following :</p> <p>(a) Horizontal type, single stage, centrifugal/split casing pump of cast iron body & bronze impeller with stainless steel shaft(SS410 grade), mechanical seal conforming to IS 1520.</p> <p>(b) Squirrel cage induction motor, TEFC, synchronous speed 3000 RPM, suitable for operation with IP 55 protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-325.</p> <p>(c) M.S. fabricated common base plate, coupling, coupling guard, foundation bolts etc. as required.</p> <p>(d) Erected on provided suitable size cement concrete foundation duly plastered with anti vibration pads with perfect aligning, proper levelling complete pump set with accessories duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003) complete, as per specification no. FF-MFP/SSC/EP</p>	Each	241282

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
13-1-5	<p>Supplying, installation, testing and commissioning of main fire pump (MFP / EP) suitable for water discharge of 2280 to 2850 LPM at 90 to 70 m head driven by electric motor 415 volts, 3 phase 50 Hz, AC supply of 55kW or of suitable kW capacity for manual/automatic operation and consisting of following :</p> <p>(a) Horizontal type, single stage, centrifugal/split casing pump of cast iron body & bronze impeller with stainless steel shaft (SS410 grade), mechanical seal conforming to IS 1520.</p> <p>(b) Squirrel cage induction motor, TEFC, synchronous speed 3000 RPM, suitable for operation on with IP 55 protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-325.</p> <p>(c) M.S. fabricated common base plate, coupling, coupling guard, foundation bolts etc. as required.</p> <p>(d) Erected on provided suitable size cement concrete foundation duly plastered with anti vibration pads with perfect aligning, proper levelling complete pump set with accessories duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003) complete, as per specification no. FF-MFP/SSC/EP</p>	Each	302762
13-1-6 (New)	<p>Supplying, installation, testing and commissioning of main fire pump(MFP / EP) suitable for water discharge of 2280 to 2850 LPM at 120 to 90 m head driven by electric motor 415 volts, 3 phase 50 Hz, AC supply of 75kW or of suitable kW capacity for manual/automatic operation and consisting of following :</p> <p>(a) Horizontal type, single stage, centrifugal/split casing pump of cast iron body & bronze impeller with stainless steel shaft(SS410 grade), mechanical seal conforming to IS 1520.</p> <p>(b) Squirrel cage induction motor, TEFC, synchronous speed 3000 RPM, suitable for operation with IP 55 protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-325.</p> <p>(c) M.S. fabricated common base plate, coupling, coupling guard, foundation bolts etc. as required.</p> <p>(d) Erected on provided suitable size cement concrete foundation duly plastered with anti vibration pads with perfect aligning, proper levelling complete pump set with accessories duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003) complete, as per specification no. FF-MFP/SSC/EP</p>	Each	409749
13-1-7 (New)	<p>Supplying, installation, testing and commissioning of main fire pump (MFP / EP) suitable for water discharge of 2280 to 2850 LPM at 140 to 120 m head driven by electric motor 415 volts, 3 phase 50 Hz, AC supply of 93kW or of suitable kW capacity for manual/automatic operation and consisting of following :</p> <p>(a) Horizontal type, single/multi stage, centrifugal/split casing pump of cast iron body & bronze impeller with stainless steel shaft(SS410 grade), mechanical seal conforming to IS 1520.</p> <p>(b) Squirrel cage induction motor, TEFC, synchronous speed 3000 RPM, suitable for operation with IP 55 protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-325.</p> <p>(c) M.S. fabricated common base plate, coupling, coupling guard, foundation bolts etc. as required.</p> <p>(d) Erected on provided suitable size cement concrete foundation duly plastered with anti vibration pads with perfect aligning, proper levelling complete pump set with accessories duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003) complete, as per specification no. FF-MFP/SSC/MS/EP</p>	Each	470982

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
13-1-8 (New)	<p>Supplying, installation, testing and commissioning of main fire pump (MFP/EP) suitable for water discharge of 2850 LPM at 145 m head driven by electric motor 415 volts, 3 phase 50 Hz, AC supply of 112 kW or of suitable kW capacity for manual/automatic operation and consisting of following :</p> <p>(a) Horizontal type, single/multi stage, centrifugal/split casing pump of cast iron body & bronze impeller with stainless steel shaft(SS410 grade), mechanical seal conforming to IS 1520.</p> <p>(b) Squirrel cage induction motor, TEFC, synchronous speed 3000 RPM, suitable for operation with IP 55 protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-325.</p> <p>(c) M.S. fabricated common base plate, coupling, coupling guard, foundation bolts etc. as required.</p> <p>(d) Erected on provided suitable size cement concrete foundation duly plastered with anti vibration pads with perfect aligning, proper levelling complete pump set with accessories duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003) complete, as per specification no. FF-MFP/SSC/MS/EP</p>	Each	581905

13.2 Jockey Pumps (Centrifugal) (FF-MFP/JP)

13-2-1 (New)	<p>Supplying, installation, testing and commissioning of jockey fire pump (JP) suitable for water discharge of 180 to 240 LPM at 70 to 50 m head driven by electric motor 415 volts, 3 phase 50 Hz, AC supply of 5.5 kW or of suitable kW capacity for manual/automatic operation and consisting of following :</p> <p>(a) Horizontal/vertical type, multi stage, centrifugal casing pump of cast iron body & bronze impeller with stainless steel shaft (SS410 grade), mechanical seal conforming to IS 1520.</p> <p>(b) Squirrel cage induction motor, TEFC, synchronous speed 3000 RPM, suitable for operation with IP 55 protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-325.</p> <p>(c) M.S. fabricated common base plate, coupling, coupling guard, foundation bolts etc. as required.</p> <p>(d) Erected on provided suitable size cement concrete foundation duly plastered with anti vibration pads with perfect aligning, proper levelling complete pump set with accessories duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003)complete, as per specification no. FF-MFP/JP</p>	Each	62482
-----------------	--	------	-------

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
13-2-2 (New)	<p>Supplying, installation, testing and commissioning of jockey fire pump (JP) suitable for water discharge of 180 to 240 LPM at 90 to 70 m head driven by electric motor 415 volts, 3 phase 50 Hz, AC supply of 9.3 kW or of suitable kW capacity for manual/automatic operation and consisting of following :</p> <p>(a) Horizontal/vertical type, multi stage, centrifugal casing pump of cast iron body & bronze impeller with stainless steel shaft(SS410 grade), mechanical seal conforming to IS 1520.</p> <p>(b) Squirrel cage induction motor, TEFC, synchronous speed 3000 RPM, suitable for operation with IP 55 protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-325.</p> <p>(c) M.S. fabricated common base plate, coupling, coupling guard, foundation bolts etc. as required.</p> <p>(d) Erected on provided suitable size cement concrete foundation duly plastered with anti vibration pads with perfect aligning, proper levelling complete pump set with accessories duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003)complete, as per specification no. FF-MFP/JP</p>	Each	93048
13-2-3	<p>Supplying, installation, testing and commissioning of jockey fire pump (JP) suitable for water discharge of 180 to 240 LPM at 110 to 90 m head driven by electric motor 415 volts, 3 phase 50 Hz, AC supply of 11 kW or of suitable kW capacity for manual/automatic operation and consisting of following :</p> <p>(a) Horizontal/vertical type, multi stage, centrifugal casing pump of cast iron body & bronze impeller with stainless steel shaft (SS410 grade), mechanical seal conforming to IS 1520.</p> <p>(b) Squirrel cage induction motor, TEFC, synchronous speed 3000 RPM, suitable for operation with IP 55 protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-325.</p> <p>(c) M.S. fabricated common base plate, coupling, coupling guard, foundation bolts etc. as required.</p> <p>(d) Erected on provided suitable size cement concrete foundation duly plastered with anti vibration pads with perfect aligning, proper levelling complete pump set with accessories duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003) complete, as per specification no. FF-MFP/JP</p>	Each	105613
13-2-4	<p>Supplying, installation, testing and commissioning of jockey fire pump (JP) suitable for water discharge of 180 to 240 LPM at 140 to 110 m head driven by electric motor 415 volts, 3 phase 50 Hz, AC supply of 15 kW or of suitable kW capacity for manual/automatic operation and consisting of following :</p> <p>(a) Horizontal/vertical type, multi stage, centrifugal casing pump of cast iron body & bronze impeller with stainless steel shaft(SS410 grade), mechanical seal conforming to IS 1520.</p> <p>(b) Suitable kW Squirrel cage induction motor, TEFC, synchronous speed 3000 RPM, suitable for operation on 415 volts, 3 phase 50 Hz, AC supply with IP 55 protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-325.</p> <p>(c) M.S. fabricated common base plate, coupling, coupling guard, foundation bolts etc. as required.</p> <p>(d) Erected on provided suitable size cement concrete foundation duly plastered with anti vibration pads with perfect aligning, proper levelling complete pump set with accessories duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003)complete, as per specification no. FF-MFP/JP</p>	Each	141201

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>13.3 Booster Pump (FF-MFP/BP)</u>			
13-3-1	<p>Supplying, installation, testing and commissioning of booster fire pump [BP] suitable for water discharge of 450 LPM at 35 m head driven by electric motor 415 volts, 3 phase 50 Hz, AC supply of 5.5 kW or of suitable kW capacity for manual/automatic operation and consisting of following :</p> <p>(a) Horizontal/vertical type, single/multi stage, centrifugal casing pump of cast iron body & bronze/CI impeller with stainless steel shaft (SS410 grade), mechanical seal conforming to IS 1520.</p> <p>(b) Squirrel cage induction motor, TEFC, synchronous speed 3000 RPM, suitable for operation with IP 55 protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-325.</p> <p>(c) M.S. fabricated common base plate, coupling, coupling guard, foundation bolts etc. as required.</p> <p>(d) Erected on provided suitable size cement concrete foundation duly plastered with anti vibration pads with perfect aligning, proper levelling complete pump set with accessories duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003) complete, as per specification no. FF-MFP/BP</p>	Each	43556
13-3-2	<p>Supplying, installation, testing and commissioning of booster fire pump [BP] suitable for water discharge of 900 LPM at 35 m head driven by electric motor 415 volts, 3 phase 50 Hz, AC supply of 7.5 kW or of suitable kW capacity for manual/automatic operation and consisting of following :</p> <p>(a) Horizontal/vertical type, single/multi stage, centrifugal casing pump of cast iron body & bronze/CI impeller with stainless steel shaft (SS410 grade), mechanical seal conforming to IS 1520.</p> <p>(b) Squirrel cage induction motor, TEFC, synchronous speed 3000 RPM, suitable for operation on with IP 55 protection for enclosure, horizontal foot mounted type with Class-'F' insulation, conforming to IS-325.</p> <p>(c) M.S. fabricated common base plate, coupling, coupling guard, foundation bolts etc. as required.</p> <p>(d) Erected on provided suitable size cement concrete foundation duly plastered with anti vibration pads with perfect aligning, proper levelling complete pump set with accessories duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003) complete, as per specification no. FF-MFP/BP</p>	Each	69720

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)

13.4 Main Fire Pump

Diesel Engine Driven (Centrifugal) (FF-MFP/DP)

13-4-1 (New)	<p>Supplying, installation, testing and commissioning of main fire pump (MFP/DP) suitable for water discharge of 1600 to 1800 LPM at 70 to 50 m head driven by 45 HP or suitable HP capacity diesel engine at required working speed suitable for manual/automatic operation and consisting of following :</p> <p>(a) Horizontal type, single stage, centrifugal casing pump of cast iron body & bronze impeller with stainless steel shaft (SS410 grade), mechanical seal conforming to IS 1520.</p> <p>(b) Water cooled with radiator, diesel engine conforming to relevant IS standard complete with auto starting mechanism, 12/24 volts DC electric starting equipment with battery of required AH capacity with necessary charger suitable to work on 230v, 50Hz AC supply, diesel tank of minimum 150ltr capacity with first filling of diesel up to 100% level with necessary piping with valves up to engine, exhaust pipe extended up to 10 m outside pump house duly insulated with 50 mm thick glass wool with 1.0 mm thick aluminium sheet cladding, residential silencer, instruments and protection as per standard specification, stop solenoid for auto stop in the event of fault with audio indications etc. as required.</p> <p>(c) M.S. fabricated common base plate, coupling, coupling guard, foundation bolts etc. as required.</p> <p>(d) Erected on provided suitable size cement concrete foundation duly plastered with anti vibration pads with perfect aligning, proper levelling complete pump set with engine assembly and accessories duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003) complete, as per specification no. FF-MFP/SSC/DP</p>	Each	526469
13-4-2 (New)	<p>Supplying, installation, testing and commissioning of main fire pump (MFP/DP) suitable for water discharge of 2280 to 2850 LPM at 90 to 60 m head driven by 76 HP or suitable HP capacity diesel engine at required working speed suitable for manual/automatic operation and consisting of following :</p> <p>(a) Horizontal type, single stage, centrifugal casing pump of cast iron body & bronze impeller with stainless steel shaft(SS410 grade), mechanical seal conforming to IS 1520.</p> <p>(b) Water cooled with radiator, diesel engine conforming to relevant IS standard complete with auto starting mechanism, 12/24 volts DC electric starting equipment with battery of required AH capacity with necessary charger suitable to work on 230v, 50Hz AC supply, diesel tank of minimum 150ltr capacity with first filling of diesel up to 100% level with necessary piping with valves up to engine , exhaust pipe extended up to 10 m outside pump house duly insulated with 50 mm thick glass wool with 1.0 mm thick aluminium sheet cladding, residential silencer, instruments and protection as per standard specification, stop solenoid for auto stop in the event of fault with audio indications etc. as required.</p> <p>(c) M.S. fabricated common base plate, coupling, coupling guard, foundation bolts etc. as required.</p> <p>(d) Erected on provided suitable size cement concrete foundation duly plastered with anti vibration pads with perfect aligning, proper levelling complete pump set with engine assembly and accessories duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003) complete, as per specification no. FF-MFP/SSC/DP</p>	Each	599189

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
13-4-3 (New)	<p>Supplying, installation, testing and commissioning of main fire pump (MFP/DP) suitable for water discharge of 2280 to 2850 LPM at 120 to 90 m head driven by 110 HP or suitable HP capacity diesel engine at required working speed suitable for automatic operation and consisting of following :</p> <p>(a) Horizontal type, single stage, centrifugal casing pump of cast iron body & bronze impeller with stainless steel shaft(SS410 grade), mechanical seal conforming to IS 1520.</p> <p>(b) Water cooled with radiator, diesel engine conforming to relevant IS standard complete with auto starting mechanism, 12/24 volts DC electric starting equipment with battery of required AH capacity with necessary charger suitable to work on 230v, 50Hz AC supply, diesel tank of minimum 150ltr capacity with first filling of diesel up to 100% level with necessary piping with valves up to engine , exhaust pipe extended up to 10 m outside pump house duly insulated with 50 mm thick glass wool with 1.0 mm thick aluminium sheet cladding, residential silencer, instruments and protection as per standard specification, stop solenoid for auto stop in the event of fault with audio indications etc. as required.</p> <p>(c) M.S. fabricated common base plate, coupling, coupling guard, foundation bolts etc. as required.</p> <p>(d) Erected on provided suitable size cement concrete foundation duly plastered with anti vibration pads with perfect aligning, proper levelling complete pump set with engine assembly and accessories duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003) complete, as per specification no. FF-MFP/SSC/DP</p>	Each	634207

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>13.5- Fire Pump Control Panel (FF-FCP)</u>			
13-5-1 (New)	<p>Supplying, erecting, testing & commissioning of fire pump control panel (FCP) of cubical construction, floor mounted type, fabricated from minimum 2 mm thick CRCA sheet, compartmentalised with hinged lockable doors, with enclosure protection class IP54, duly powder coated or painted with accessories duly painted with two coats of synthetic enamel paint of fire red colour over a coat of primer (ISC code 536 as per IS 2932 of 2003), cable alley, interconnection with suitable size solid copper busbar strip of adequate size for all power connections having switchgears and accessories, mountings and internal wiring with adequate size copper conductor cable, earth terminals, numbering etc. complete in all respect, suitable for satisfactory operation of main fire pump and jockey (pressurisation) pumps (1working+1standby) with necessary accessories, wiring & cabling along with allied accessories with following incoming and outgoing, suitable for automatic & manual operation on 415V, 3 phase, 50Hz ac supply as per specifications</p> <p>the capacity of electric motor driven pump are as follows</p> <p>a. Main fire pump(MFP) having capacity of 22kW 1no (1 working)</p> <p>b. Jockey pump(JP) capacity of suitable capacity 2 nos(1 working +1 standby, alternate run per start in auto mode)</p> <p>comprises of the following features & switchgears:</p> <ol style="list-style-type: none"> 1. Main incomer FP SFU having rotary handle with HRC fuses of suitable rating. 2. Electrolytic grade copper strips for busbar of suitable sizes for main incomer and branches to motor SFU's, starters & outgoing terminals with necessary accessories like stainless steel nut bolts with spring washers for connections, mounted on required no of epoxy or porcelain support insulators of suitable ratings etc. 3. Individual pump TPN SFU having rotary handle with HRC fuses of suitable rating. 4. Digital voltmeter & ammeter & RYB indicating lamps & push buttons & SPP, O/L & phase reversal protection with emergency stop switch. 5. TPN SPD 100kA Type 1 +2 tested. 6. Required pressure transducer with pressure indication on panel with cabling required for monitoring & automatic operation of fire pumps. 7. System controller to control operation of main electric fire pump, jockey (pressurization) pumps in sequence with interlocking for operation of pumps as per specification with automatic/manual operation with selector switch & alternate run of standby Pumps consisting of relays, timers. sensors, annunciation window for fault indication, complete as per specification. 8.Suitable capacity electric motor starters for all individual pumps with necessary push buttons & indications. 9. Siren of required capacity to be activated when main pump starts & allied accessories as per requirements of local CFO or as directed by engineer in charge. 10. Danger board as per IS. 11. Spare HRC fuses minimum 2nos of each individual rating with required bakelite fuse holder for main & jockey fire pumps MFP=(1working), JP = (1working+1standby, alternate run per start in auto mode) complete panel, as per specification no. FF-MFP/ECP 	Each	182320

Add on

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
A	For addition of capacity of main electric motor driven fire pump MFP (1 working) for hydrant system is more than 22kW , add as follows in the basic cost of Item no 13-5-1 towards increased capacity switchgears and motor starters for main & jockey pumps along with necessary accessories for main & jockey fire pumps MFP=(1working), JP = (1working + 1standby, alternate run per start in auto mode)		
1	For main electric motor driven fire hydrant system pump of 30kW capacity & relevant capacity jockey pump add Rs....	Each	14277
2	For main electric motor driven fire hydrant system pump of 37kW capacity & relevant capacity jockey pump add Rs....	Each	26217
3	For main electric motor driven fire hydrant system pump of 45kW capacity & relevant capacity jockey pump add Rs....	Each	47686
4	For main electric motor driven fire hydrant system pump of 55kW capacity & relevant capacity jockey pump add Rs...	Each	69004
5	For main electric motor driven fire hydrant system pump of 75kW capacity & relevant capacity jockey pump add Rs....	Each	99983
6	For main electric motor driven fire hydrant system pump of 93kW capacity & relevant capacity jockey pump add Rs....	Each	103793
7	For main electric motor driven fire hydrant system pump of 112kW capacity & relevant capacity jockey pump add Rs....	Each	117999
B	For addition of fire sprinkler system to basic fire hydrant system control panel(FCP) which includes one main electric motor driven fire pump MFP (1working) having __kW capacity & relevant capacity jockey pumps , add as follows in the basic cost of Item no 13-5-1 towards increased capacity switchgears busbar and additional motor starters for main & jockey pumps along with necessary accessories with software & hardware for main & jockey fire pumps additional Sprinkler system MFP=(1working)@22kW, JP = (1working+1standby, alternate run per start in auto mode) @relevant capacity		
1	For main electric motor driven fire sprinkler system pump of 22kW capacity (1Working) & relevant capacity jockey pumps (1working+1standby, alternate run per start in auto mode, add Rs....	Each	111907
2	For main electric motor driven fire sprinkler system pump of 30kW capacity (1Working) & relevant capacity jockey pumps (1working+1standby, alternate run per start in auto mode, add Rs....	Each	137968
3	For main electric motor driven fire sprinkler system pump of 37kW capacity (1Working) & relevant capacity jockey pumps (1working+1standby, alternate run per start in auto mode, add Rs....	Each	161675
4	For main electric motor driven fire sprinkler system pump of 45kW capacity (1Working) & relevant capacity jockey pumps (1working+1standby, alternate run per start in auto mode, add Rs....	Each	200564
5	For main electric motor driven fire sprinkler system pump of 55kW capacity (1Working) & relevant capacity jockey pumps (1working+1standby, alternate run per start in auto mode, add Rs....	Each	239209
6	For main electric motor driven fire sprinkler system pump of 75kW capacity (1Working) & relevant capacity jockey pumps (1working+1standby, alternate run per start in auto mode, add Rs....	Each	304846

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
7	For main electric motor driven fire sprinkler system pump of 93kW capacity (1Working) & relevant capacity jockey pumps (1working+1standby, alternate run per start in auto mode, add Rs....	Each	321068
8	For main electric motor driven fire sprinkler system pump of 112kW capacity (1Working) & relevant capacity jockey pumps (1working+1standby, alternate run per start in auto mode, add Rs....	Each	345620
C	For standby main electric motor driven fire hydrant/sprinkler system pump (MFP- 1 standby), add as follows in the basic cost of Item no 13-5-1 towards required switchgears and motor starter along with necessary accessories and updation of control logic with interlocking for operation of pumps MFP=(1working+1standby, alternate run per start in auto mode) JP = (1working+1standby, alternate run per start in auto mode) for main & jockey fire pumps		
1	For standby main electric driven fire hydrant/sprinkler system pump of 22kW capacity Rs.....	Each	26866
2	For standby main electric driven fire hydrant/sprinkler system pump of 30kW capacity, add Rs.....	Each	29970
3	For standby main electric driven fire hydrant/sprinkler system pump of 37kW capacity, add Rs.....	Each	33616
4	For standby main electric driven fire hydrant/sprinkler system pump of 45kW capacity, add Rs.....	Each	37184
5	For standby main electric driven fire hydrant/sprinkler system pump of 55kW capacity, add Rs.....	Each	43546
6	For standby main electric driven fire hydrant/sprinkler system pump of 75kW capacity, add Rs.....	Each	54517
7	For standby main electric driven fire hydrant/sprinkler system pump of 93kW capacity, add Rs.....	Each	55331
8	For standby main electric driven fire hydrant/sprinkler system pump of 112kW capacity, add Rs.....	Each	58518
D	For addition of standby main diesel engine driven fire pump (1 standby), add as follows in the basic cost of Item no 13-5-1 towards required 12/24 v battery charger and diesel engine starter along with necessary accessories, indicators etc. with necessary interlocking and updation of control logic with interlocking for operation of pumps MFP for main (1working+1standby mode) & jockey fire pumps (1working+1standby, alternate run per start in auto mode) , add Rs..... The control for diesel engine comprises of automatic/manual selector switch & 3 attempts starting device, timers and relays as required, push buttons, start/stop in manual mode indicating lamp for high/ low Lub. oil pressure, high water temp and engine on indication battery charger suitable for 12V/24 V DC with boost and trickle selector switch, 0-30 V DC voltmeter, and 0-20 A DC ammeter with all standard relays and accessories required for automatic operation of diesel engine with interlocking for operation of main fire pumps.	Each	68381
E	For addition of booster pump for fire hydrant/sprinkler, add as follows in the basic cost of item no 13-5-1 towards necessary accessories, indicators etc. with necessary interlocking and updation of control logic, add Rs.....		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
1	for 5.5/ 7.5 kW centrifugal type booster pump 1no(1working) , add Rs.....	Each	17994
2	for 11kW centrifugal type booster pump 1no(1working) , add Rs.....	Each	18694

13.6 Pipes (FF-PP)

13-6-1	Supplying and erecting G.I. pipe 'C' class ERW 20 mm dia with necessary fittings complete as per specification no. FF-PP	m	244
13-6-2	Supplying and erecting G.I. pipe 'C' class ERW 25 mm dia with necessary fittings complete as per specification no. FF-PP	m	348
13-6-3	Supplying and erecting G.I. pipe 'C' class ERW 50 mm dia with necessary fittings complete as per specification no. FF-PP	m	705
13-6-4	Supplying and erecting G.I. pipe 'C' class ERW 65 mm dia with necessary fittings complete as per specification no. FF-PP	m	893
13-6-5	Supplying and erecting G.I. pipe 'C' class ERW 75/80 mm dia with necessary fittings complete as per specification no. FF-PP	m	1116
13-6-6	Supplying and erecting G.I. pipe 'C' class ERW 100 mm dia with necessary fittings complete as per specification no. FF-PP	m	1588
13-6-7	Supplying and erecting G.I. pipe 'C' class ERW 150 mm dia with necessary fittings complete as per specification no. FF-PP	m	2409
13-6-8	Supplying and erecting G.I. pipe 'C' class ERW 200 mm dia with necessary fittings complete as per specification no. FF-PP	m	3572
13-6-9	Providing coating of bitumen paint & 4mm thick wrapping for underground 100 mm ring main of fire fighting system.	m	249
13-6-10	Providing coating of bitumen paint & 4mm thick wrapping for underground 150 mm ring main of fire fighting system.	m	345
13-6-11	Providing coating of bitumen paint & 4mm thick wrapping for underground 200 mm ring main of fire fighting system.	m	423

Note Refer chapter no.16 (Civil Works) for excavation charges.

13.7 Valves (FF-FV)

13-7-1	Supplying and erecting 80 mm dia cast iron foot valve ball type/flap type with strainer for negative suction complete as per specification no. FF-VL/FV	Each	5184
13-7-2	Supplying and erecting 100 mm dia cast iron foot valve ball type/flap type with strainer for negative suction complete as per specification no. FF-VL/FV	Each	6667
13-7-3	Supplying and erecting 150 mm dia cast iron foot valve ball type/flap type with strainer for negative suction complete as per specification no. FF-VL/FV	Each	18663
13-7-4	Supplying and erecting 200 mm dia cast iron foot valve ball type/flap type with strainer for negative suction complete as per specification no. FF-VL/FV	Each	31110

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<i>End Line Strainer (positive suction) (ELS)</i>			
13-7-5	Supplying and erecting 75/80 mm dia Cast Iron end line strainer of Y-type flanged end pattern, PN16 pressure rating, SS screen, end connection with Flanged / Screwed / Socket Weld / Butt Weld End etc with standard OAR (open area Ratio) for positive suction complete as per specification no. FF-VL/ELS	Each	4373
13-7-6	Supplying and erecting 100 mm dia Cast Iron end line strainer of Y-type flanged end pattern, PN16 pressure rating, SS screen, end connection with Flanged / Screwed / Socket Weld / Butt Weld End etc with standard OAR (open area Ratio) for positive suction complete as per specification no. FF-VL/ELS	Each	6349
13-7-7	Supplying and erecting 150 mm dia Cast Iron end line strainer of Y-type flanged end pattern, PN16 pressure rating, SS screen, end connection with Flanged / Screwed / Socket Weld / Butt Weld End etc with standard OAR (open area Ratio) for positive suction complete as per specification no. FF-VL/ELS	Each	11102
13-7-8	Supplying and erecting 200 mm dia Cast Iron end line strainer of Y-type flanged end pattern, PN16 pressure rating, screen of SS end connection with Flanged / Screwed / Socket Weld / Butt Weld End etc with standard OAR (open area Ratio) for positive suction complete as per specification no. FF-VL/ELS	Each	21035
13-7-9 (New)	Supplying and erecting 75/80 mm dia Cast Iron end line strainer of T-Pot type flanged end pattern, PN16 pressure rating, SS screen, end connection with flanged, for positive suction complete as per specification no. FF-VL/ELS	Each	4208
13-7-10 (New)	Supplying and erecting 100 mm dia Cast Iron end line strainer of T-Pot type flanged end pattern, PN16 pressure rating, screen of SS and end connection with flanged, for positive suction complete as per specification no. FF-VL/ELS	Each	5700
13-7-11 (New)	Supplying and erecting 150 mm dia Cast Iron end line strainer of T-Pot type flanged end pattern, PN16 pressure rating, screen of SS and end connection with flanged,for positive suction complete as per specification no. FF-VL/ELS	Each	10680
13-7-12 (New)	Supplying and erecting 200 mm dia Cast Iron end line strainer of T-Pot type flanged end pattern, PN16 pressure rating, screen of SS and end connection with flanged, for positive suction complete as per specification no. FF-VL/ELS	Each	19267
<i>Sluice Valve</i>			
13-7-13	Supplying and erecting 75/80 mm dia. cast iron double flange sluice valve complete with PN16 pressure rating, as per specification no. FF-VL/SV	Each	5944
13-7-14	Supplying and erecting 100 mm dia. cast iron double flange sluice valve complete with PN16 pressure rating, as per specification no. FF-VL/SV	Each	8753
13-7-15	Supplying and erecting 150 mm dia. cast iron double flange sluice valve complete with PN16 pressure rating, as per specification no. FF-VL/SV	Each	13646
13-7-16	Supplying and erecting 200 mm dia. cast iron double flange sluice valve complete with PN16 pressure rating, as per specification no. FF-VL/SV	Each	23265

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>Butterfly Valves (BFV)</u>			
13-7-17	Supplying and erecting 50 mm dia. cast iron double flange butterfly valve of size complete with PN16 pressure rating, as per specification no. FF-VL/BFV	Each	2393
13-7-18	Supplying and erecting 65 mm dia. cast iron double flange butterfly valve of size complete with PN16 pressure rating, as per specification no. FF-VL/BFV	Each	2585
13-7-19	Supplying and erecting 75/80 mm dia. cast iron double flange butterfly valve of size complete with PN16 pressure rating, as per specification no. FF-VL/BFV	Each	3183
13-7-20	Supplying and erecting 100 mm dia. cast iron double flange butterfly valve of size complete with PN16 pressure rating, as per specification no. FF-VL/BFV	Each	4121
13-7-21	Supplying and erecting 150 mm dia. cast iron double flange butterfly valve of size complete with PN16 pressure rating, as per specification no. FF-VL/BFV	Each	6327
13-7-22	Supplying and erecting 200 mm dia. cast iron double flange butterfly valve of size complete with PN16 pressure rating, as per specification no. FF-VL/BFV	Each	9812
<u>Non Return Valve (NRV)</u>			
13-7-23	Supplying and erecting 75/80 mm dia cast iron double flange NRV complete with PN16 pressure rating, as per specification no. FF-VL/NRV	Each	6142
13-7-24	Supplying and erecting 100 mm dia cast iron double flange NRV complete with PN16 pressure rating, as per specification no. FF-VL/NRV	Each	8240
13-7-25	Supplying and erecting 150 mm dia cast iron double flange NRV complete with PN16 pressure rating, as per specification no. FF-VL/NRV	Each	13491
13-7-26	Supplying and erecting 200 mm dia cast iron double flange NRV complete with PN16 pressure rating, as per specification no. FF-VL/NRV	Each	21297
13-7-27	Supplying and erecting 75/80 mm dia cast iron double flange ball type NRV complete with PN16 pressure rating, as per specification no. FF-VL/NRV	Each	8413
13-7-28	Supplying and erecting 100 mm dia cast iron double flange ball type NRV complete with PN16 pressure rating, as per specification no. FF-VL/NRV	Each	11322
13-7-29	Supplying and erecting 150 mm dia cast iron double flange ball type NRV complete with PN16 pressure rating, as per specification no. FF-VL/NRV	Each	27274
13-7-30	Supplying and erecting 200 mm dia cast iron double flange ball type NRV complete with PN16 pressure rating, as per specification no. FF-VL/NRV	Each	44978
<u>Gate / Wheel Valves (GV)</u>			
13-7-31	Supplying and erecting 20 mm dia gun metal gate valve complete with PN16 pressure rating, as per specification no. FF-VL/GV	Each	913
13-7-32	Supplying and erecting 25 mm dia gun metal gate valve complete with PN16 pressure rating, as per specification no. FF-VL/GV	Each	1202
13-7-33	Supplying and erecting 50 mm dia gun metal gate valve complete with PN16 pressure rating, as per specification no. FF-VL/GV	Each	1289

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>Hydrant Valves (HV)</u>			
13-7-34	Supplying and erecting gun metal single outlet hydrant valve fitted with necessary accessories complete as per specification no. FF-VL/HV	Each	7646
13-7-35	Supplying and erecting stainless steel single outlet hydrant valve fitted with necessary accessories complete as per specification no. FF-VL/HV	Each	5799
13-7-36	Supplying gun metal double outlet hydrant valve fitted with necessary accessories complete as per specification no. FF-VL/HV	Each	16723
13-7-37	Supplying and erecting stainless steel double outlet hydrant valve fitted with necessary accessories complete as per specification no. FF-VL/HV	Each	11962
<u>13.8 Fire Fighting Accessories (FF-FFA)</u>			
<u>Priming Tank</u>			
13-8-1	Supplying and installing one piece moulded HDPE / fibre water tank for negative suction only, having capacity 1000 litres fitted with necessary accessories complete as per specification no. FF-FFA/PT	Each	9804
<u>Hose Reel with Drum (HR)</u>			
13-8-2	Supplying and installing wall mounting swinging hose reel drum fitted with 19 mm dia. 30m long high pressure polypropylene (Polyhose) along with necessary accessories complete as per specification no. FF-FFA/HV	Each	6921
<u>Hose Pipes</u>			
13-8-3	Supplying and erecting 63mm dia, controlled percolation (C.P.) hose pipe, 15m in length , fitted with necessary accessories complete as per specification no. FF-FFA/CPH	Each	3954
13-8-4	Supplying and erecting 63mm dia, reinforced rubber lined (R.R.L.) hose pipe, 15m in length , fitted with necessary accessories complete as per specification no. FF-FFA/RRL	Each	5229
13-8-5	Supplying and erecting 19 mm dia high pressure poly propylene hose pipe complete as per specification no. FF-FFA/HOP	m	161
13-8-6	Supplying and erecting 19 mm dia high pressure rubber hose pipe complete as per specification no. FF-FFA/RHP	m	102
<u>Nozzles (NZ)</u>			
13-8-7	Supplying and erecting gun metal branch pipe of 63 mm dia fitted with 20 mm dia detachable hexagonal nozzle complete as per specification no. FF-FFA/NZ	Each	1926
13-8-8	Supplying and erecting stainless steel branch pipe 63 mm dia fitted with 20 mm dia detachable hexagonal nozzle complete as per specifications no. FF-FFA/NZ	Each	1963
13-8-9	Supplying and erecting 19 mm dia gun metal chrome plated nozzle complete as per specification no. FF-FFA/NZ	Each	961
<u>Fire Brigade Connection (FBC)</u>			
13-8-10	Supplying and erecting 150 mm dia fire brigade header suitable for supplying water in fire tank complete as per specification no. FF-FA/FBC	Each	9479

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>Siamese Connection (SMC)</u>			
13-8-11	Supplying and erecting fire brigade header (Siamese connection) of 150 mm dia, for supplying water in fire tank complete as per specification no. FF-FA/FMC	Each	11588
<u>Air Cushion Tank (Air Vessel) (ACT)</u>			
13-8-12	Supplying and erecting 300 mm dia 1.5m in height air vessel / tank fabricated from min 5mm thick M.S. sheet complete as per specification no. FF-FFA/ACT	Each	12472
<u>Air Release Valve (ARV)</u>			
13-8-13	Supplying and erecting 20/25mm dia gun metal air release cock, with necessary G.I. coupling to be fitted on top of air vessel or on wet riser complete as per specification no. FF-FFA/ARV	Each	840
<u>Pressure Gauge (PG)</u>			
13-8-14	Supplying and erecting 100 mm dia. pressure gauge , 0-300 PSI or 0-14 kg per cm square fitted with 12/15 mm dia. pad cock valve, erected with provided G.I. pipe, elbow etc. complete as per specification no. FF-FFA/PG	Each	772
<u>Pressure Switch(PS)</u>			
13-8-15	Supplying and erecting 12/15 mm dia pressure switch with provided isolation valve, G.I. nipple, elbow, etc complete as per specification no. FF-FFA/PS	Each	1763
<u>Orifice Plate(OP)</u>			
13-8-16	Supplying and erecting brass orifice plate having 6 mm. thickness, 140 mm outer dia with required diameter of inner hole at every single outlet hydrant valve as per specification no. FF-FFA/OP	Each	1009
13-8-17	Supplying and erecting brass orifice plate having 6 mm. thickness, 160 mm outer dia with required diameter of inner hole at every double outlet hydrant valve as per specification no. FF-FFA/OP	Each	1022
<u>MS / CRCA Boxes (BOX)</u>			
13-8-18	Supplying and erecting M.S./CRCA cabinet for housing single hydrant valve of size (400 x 400 x 400)mm or hose pipe box of size (600 x 600 x 200)mm made from min. 1.5 mm thick CRCA sheet with angle iron work of min. of size (25 x 25 x 4) mm having front doors with viewing glass of size (200x150) mm and locking arrangement with necessary fixing material such as rubber bidding etc. duly painted in post box red colour(Code 538 of IS 5)	Each	5337
13-8-19	Supplying and erecting M.S./CRCA cabinet for housing Fire Brigade / SIEMESE connections (size 1250 x 400 x 300 mm.) made from 16 SWG sheet and angle iron 25 mm. x 25 mm. x 4 mm. having front doors with viewing glass (8" x 6") and locking arrangement with necessary fixing material such as rubber bidding etc. duly painted in post box red colour(Code 538 of IS 5)	Each	8249
13-8-20	Supplying and erecting M.S./CRCA cabinet for housing Floor Hydrant valve, hose pipe, hose reel and branch pipe (size 1000 x 736 x 736 mm.) made from 16 SWG sheet and angle iron 25 x 25 x 4 mm. having front doors with viewing glass (8"x6") and locking arrangement with necessary fixing material such as rubber bidding etc. duly painted in post box red colour(Code 538 of IS 5)	Each	15886

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>13.9 Conventional Fire Alarm System (FF-FAS)</u>			
13-9-1	Supplying, erecting testing and commissioning heat detector with combination "ROR and Fixed Temp." complete as per specification no. FF-FAS/HD	Each	1675
13-9-2 (New)	Supplying, erecting testing and commissioning multi sensor heat detector with smoke and heat combination (RoR + fix temperature) with base on back box, necessary connections complete as per specification no. FF-FAS/HD	Each	2255
13-9-3	Supplying, erecting testing and commissioning optical type smoke detector on suitable back box with necessary connections complete as per specification no. FF-FAS/SD	Each	1730
13-9-4	Supplying, erecting testing and commissioning beam smoke detector four wire single ended reflected type with 8 " receiver having digital display for easy alignment, adjustable sensitivity & heater kit for transmitter/receiver and reflector with necessary connections on suitable back box. The protection range of beam detector is 5 to 70 m.	Each	34207
13-9-5	Supplying, erecting testing and commissioning beam smoke detector four wire single ended reflected type with 8 " receiver having digital display for easy alignment, adjustable sensitivity & heater kit for transmitter/receiver and reflector with necessary connections on suitable back box. The protection range of beam detector is 70 to 100 m.	Each	58300
Note	For large areas and passages beam detectors should be preferably used		
13-9-6	Supplying, erecting testing and commissioning manual call point (Pill box) with break glass, push button (resettable type) in metal enclosure complete as per specification no. FF-FAAS/MCP	Each	583
13-9-7 (New)	Supplying, erecting, testing and commissioning manual call point (Pill box) with break glass push button and flip abort switch or agent release switch in metal enclosure complete as per specification no. FF-FAAS/MCP	Each	1670
13-9-8	Supplying, erecting, testing and commissioning hooters having high (100dB @ 1m) and low (94dB @ 1m) volume setting , group addressing facility allowing multiple sounders to be activated with CRCA enclosure complete as per specification no. FF-FAAS/HTR	Each	629
13-9-9	Supplying, installing, testing and commissioning remote response indicators suitable to operate on 5 - 28 V dc supply having FR Polymer ABS Housing complete as per specification no. FF-FAAS/RRI	Each	207
13-9-10	Supplying, installing, testing and commissioning FR, XLPE armoured cable 2 core 1.5 sq.mm. copper conductor complete erected on wall/ ceiling complete as per specification no. CB-LT/CU	m	111
13-9-11	Supplying, installing, testing and commissioning FR, XLPE armoured cable 4 core 1.5 sq.mm. copper conductor complete erected on wall/ ceiling complete as per specification no. CB-LT/CU	m	135
13-9-12	Supplying, installing, testing and commissioning FR, XLPE armoured cable 8 core 1.5 sq.mm. copper conductor complete erected on wall/ ceiling complete as per specification no. CB-LT/CU	m	238
13-9-13	Supplying, installing, testing and commissioning FR, XLPE armoured cable 12 core 1.5 sq.mm. copper conductor complete erected on wall/ ceiling complete as per specification no. CB-LT/CU	m	322

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
13-9-14	Supplying, installing, testing and commissioning of 2 Zones Microprocessor based conventional fire alarm control panel (FACP) with standard accessories , 16x2 Character LCD Display, provision for zone wise contact and beep sound alarm, suitable to operate on 120-220 V AC, 0 - 49 Deg C, 93 ± 2 Percentage RH (non- condensing) at 32 ± 2 Deg C complete as per specification no. FF-FAAS/FACP	Each	17839
13-9-15	Supplying, installing, testing and commissioning 2 Zone, local signal control panel (LCP) with standard accessories complete as per specification no. FF-FAAS/LCP	Each	5959
Note	1) For item no.13-9-10 to 13-9-13 increase rate by 2% for FRLS 2) For Item no.13-9-14 increase rate by 25% for additional zone as per requirement. 3) For item no.13-9-15 increase rate by 10% for additional zone as per requirement.		
<u>13.10 Intelligent Addressable Fire Alarm System (FF-AFAS)</u>			
13-10-1 (New)	Supplying, installing, testing and commissioning of micro processor based intelligent addressable main fire alarm panel , central processing unit with the 1 loop capacity and capable of supporting upto 250 devices and detectors per loop, with on-board LCD display with min 16 lines of text, operating at 230 V 50 HZ - AC with inbuilt Battery Backup of a minimum 24 hours in normal condition and 30 min in alarm condition, suitable provision for network connectivity, interfacing with third party equipment via a MODBUS/ OPC/ L-ON interface etc. conforming to IS 15908:2021, IS 2189: 2008, EN 54 & VDS / FM/ UL 864 (10th edition) with 3 years replacement warranty FF-AFAS/CP.	Each	156398
13-10-2 (New)	Supplying, installing, testing and commissioning of micro processor based intelligent addressable main fire alarm panel , central processing unit with the 2 loop capacity and capable of supporting upto 250 devices and detectors per loop, with on-board LCD display with min 16 lines of text, operating at 230 V 50 HZ - AC with inbuilt Battery Backup of a minimum 24 hours in normal condition and 30 min in alarm condition, suitable provision for network connectivity, interfacing with third party equipment via a MODBUS/ OPC/ L-ON interface etc. conforming to IS 15908:2021, IS 2189: 2008, EN 54 & VDS / FM/ UL 864 (10th edition) with 3 years replacement warranty FF-AFAS/CP.	Each	171990
13-10-3 (New)	Supplying, installation, testing and commissioning of micro processor based intelligent addressable main fire alarm panel , central processing unit with the 4 loop capacity and capable of supporting upto 250 devices and detectors per loop, with on-board LCD display with min 16 lines of text, operating at 230 V 50 HZ - AC with inbuilt Battery Backup of a minimum 24 hours in normal condition and 30 min in alarm condition, suitable provision for network connectivity, interfacing with third party equipment via a MODBUS/ OPC/ L-ON interface etc. conforming to IS 15908:2021, ,IS 2189: 2008, EN 54 & VDS / FM/ UL 864 (10th edition) with 3 years replacement warranty FF-AFAS/CP.	Each	278140

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
13-10-4 (New)	Supplying, installing, testing and commissioning of micro processor based intelligent addressable main fire alarm panel , central processing unit with the 8 loop capacity and capable of supporting upto 250 devices and detectors per loop, with on-board LCD display with min 16 lines of text, operating at 230 V 50 HZ - AC with inbuilt Battery Backup of a minimum 24 hours in normal condition and 30 min in alarm condition, suitable provision for network connectivity, interfacing with third party equipment via a MODBUS/ OPC/ L-ON interface etc. conforming to IS 15908:2021, IS 2189: 2008, EN 54 & VDS / FM/ UL 864 (10th edition) with 3 years replacement warranty FF-AFAS/CP	Each	393326
13-10-5 (New)	Supplying, installing, testing and commissioning of repeater panel with suitable battery backup of a minimum of 24 hours in normal condition and 30 min in alarm condition, 80 backlit alphanumeric LCD display with inbuilt buzzer to indicate fault/fire alarm, manual control keys for silence/mute and to reset the FACP from the repeater station. Panel size shall not more than 175 x 275 x 65 mm conforming to EN 54 or UL approved with 3 years equipment replacement warranty FF-AFAS/RP	Each	74501
13-10-6 (New)	Supplying, installing, testing and commissioning of addressable optical smoke detector , single/twin LED's with 360 degree view, suitable for low voltage 15 to 32 V DC two wires supply, in-built locking mechanism to check the removal and pilferage of the detector, in built isolation mode, start up current 300µA and alarm condition current shall be maximum 6.5 mA, operating temperature 0°C to 50°C, humidity 0-95% RH, IP 41, conforming to IS 2189: 2008, 11360_1985_Reff2020 EN 54 or UL Approved with 3 years equipment replacement warranty FF-AFAS/SD .	Each	2371
13-10-7 (New)	Supplying, installing, testing and commissioning of intelligent addressable thermal/heat detector with rate of rise cum fixed temperature thermistor complete with base as required, suitable for temperature variations from -20°C to 38°C for fixed-heat and rate-of-rise type detectors and 0°C to 66°C for high heat type detectors, in built isolation mode, suitable for offices/ceiling cable trenches/less ventilation area's etc. with 3 years equipment replacement warranty IS : 2175 - 1988 reaffirmed 2000, IS 15908:2021 standards FF-AFAS/SD.	Each	2705
13-10-8 (New)	Supplying, installing, testing and commissioning of intelligent addressable thermal/ heat detector with rate of rise cum fixed temperature thermistor complete with base as required, suitable for temperature variations from - 20°C to 38 °C for fixed-heat and rate-of-rise type detectors whereas 0°C to 90°C for high heat type detectors, in built isolation mode, suitable for industrial/ kitchen/ boiler room etc. with 3 years equipment replacement warranty, IS : 2175-1988 reaffirmed 2000, IS 15908:2021 standards FF-AFAS/SD.	Each	2816
13-10-9 (New)	Supplying, installing, testing and commissioning of addressable manual call points (break glass type/pull station type), made of addressable break glass plastic square in shape surface/flush mounted with "Break Glass" message embedded on the glass, complete erected with mounting base and required accessories conforming to EN 54 or UL listed with 3 years equipment replacement warranty FF-AFAS/MCP.	Each	3575
13-10-10 (New)	Supplying, installing, testing and commissioning of addressable fire control/relay module complete as required, with 3 years equipment replacement warranty conforming to IS 5051Part 2 (Sec 1 to 3) : 1982 reed relays, EN 54 or UL Listed FF-AFAS/CRM	Each	3775

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
13-10-11 (New)	Supplying, installing, testing and commissioning of addressable fire monitor module complete as required. EN 54 or UL Listed with 3 years equipment replacement warranty conforming to IS 5051Part 2 (Sec 1 to 3) : 1982 Reed relays FF-AFAS/MM	Each	3720
13-10-12 (New)	Supplying, installing, testing and commissioning of addressable fire isolator module complete as required. EN 54 /FM or UL Listed with 3 years equipment replacement warranty conforming to IS 5051Part 2 (Sec 1 to 3) : 1982 Reed relays FF-AFAS/ISM	Each	3051
13-10-13 (New)	Supplying, installing, testing and commissioning of addressable horn cum strobe sound/ hooter , output frequency 500 to 1000 Hz with dB as per Chart given in IS 15908:2021, with flashing at 1 Hz over the strobe's entire operating voltage range EN 54, conforming to IS 2189: 2008, IS 15908:2021 standards with 3 years equipment replacement warranty FF-AFAS/SSH.	Each	7828
13-10-14 (New)	Supplying, installing, testing and commissioning of digital linear heat detection cable addressable through monitor module with temperature ratings such as 60°-70°C, conforming to IS 2189: 2008, EN 54 or UL listed FF-AFAS/LHDC.	m	395

13.11 P A System (FF-PAS)

13-11-1	Supplying, erecting, testing and commissioning 120 W amplifier suitable to operate on 230 Volts A.C. / 12 Volts D.C. supply complete as per specification no. FF-PA/AFR	Each	18620
13-11-2	Supplying, erecting, testing and commissioning 15 to 30 Watts sound column or ceiling mounted complete as per specification no. FF-PA/SOC	Each	2881
13-11-3	Supplying, erecting, testing and commissioning stand mounted/handheld type wired microphone having 2 mV/Pa sensitivity, impedance level limit 300 ohms and 50 - 16000 Hz suitable to operate in -10 deg C to +55 deg C with min. 7 metre shielded cable and 3 Pin Professional XLR Connector, stereo jack complete as per specification no. FF-PA/MIC	Each	5374
13-11-4	Supplying, erecting, testing and commissioning rust free microphone floor stand of chrome plating/powder coating or S.S. material , 500 mm to 1500 mm height and sturdy mechanism ensuring trouble free movement complete.	Each	1883
13-11-5	Supplying, erecting, testing and commissioning rust free microphone table stand of chrome plating/powder coating or S.S. material, up to 500 mm height and suitable base for sturdy mechanism ensuring trouble free movement complete.	Each	1160
13-11-6	Supplying, erecting, testing and commissioning of 2 core shielded cable complete as per specification no. FF-PA/MCC	m	147
13-11-7	Supplying, erecting, testing and commissioning of 0.5 sq. mm speaker wire complete.	m	25
13-11-8	Supplying, erecting, testing and commissioning of 0.75 sq. mm speaker wire complete.	m	36
13-11-9	Supplying, erecting, testing and commissioning of 1.0 sq. mm speaker wire complete.	m	43
13-11-10	Supplying, erecting, testing and commissioning of 1.5 sq. mm speaker wire complete.	m	60

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>13.12 Sprinklers (FF-SPR)</u>			
13-12-1	Supplying, erecting, testing and commissioning of quartzoid bulb sprinkler , 15 mm (1/2") dia. NBCM Body chrome finished, 68° C fixed temperature rating with deflector disc of conventional construction complete as per specification no. FF-SPR.	Each	427
13-12-2	Supplying, erecting, testing and commissioning vane type water flow detector 75/80 mm dia. with 1) Visual switch activation 2) Rugged switch assembly 3) Heavy duty aluminium pipe saddles 4)Durable metal enclosure 5) Steel U bolts for secure mounting 6) Two SPDT (Single pole double track) synchronised switches 7) serviceable without draining pipes.	Each	7362
13-12-3	Supplying, erecting, testing and commissioning vane type water flow detector 100 mm dia. with 1) Visual switch activation 2) Rugged switch assembly 3) Heavy duty aluminium pipe saddles 4)Durable metal enclosure 5) Steel U bolts for secure mounting 6) Two SPDT (Single pole double track) synchronised switches 7) serviceable without draining pipes.	Each	8408
<u>13.13 Fire Sealant System (FF-FRM)</u>			
13-13-1	Supplying and erecting fire resistant mortar (20 kg) with fire resistance class S90 as per National Electrical Code (NEC) SP30-2011 suitable to seal the openings of all kinds of cables, pipes and cable support system in steel, aluminium and plastic profiles (except hollow core conductors). The residual openings shall be closed with filler, as per specification no FF-FRM .	Job	9566
Note	For estimating purpose consider 1 bag of 20kg to cover 300mm x 400mm area 150mm thick or 0.018 m³		
<u>13.14 Fire Safety Audit</u>			
13-14-1	Providing/conducting complete fire audit including submission of fire audit report for the whole premises.	sqmtr	8
<u>13.15 Fire Extinguisher</u>			
13-15-1	Supplying & erecting Carbon Dioxide (CO2) fire extinguisher of 4.5 kg. capacity cartridge type conform to IS 2878 /15683 complete erected with necessary clamp made from 50 x 6 mm. M. S. flat with nut & bolts routed in wall complete.	Each	9902
13-15-2	Refilling of fire extinguisher of CO2 type by dismantling from site to workshop for refilling which includes removing of existing powder and cleaning the cylinder, delivery pipe , nozzle internally and refilling new powder complete with reinstalling properly at site with necessary certificate.	kg	197

Chapter: 14

Temporary Illumination (TE - IL)

14.1 Temporary Illumination

(TE-IL)

14.2 Hiring of Generators

(TE-DG)

Chapter 14 : TEMPORARY ILLUMINATION (TE - IL)

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>14.1 Temporary Illumination</u>			
14-1-1	Providing temporary illumination consisting of LED tube light 4' x 20w or Fluorescent tube light 4' x 36/40w, 230v, 50 Hz having colour temp up to 6500k complete erected with mains and required switchgears with continuous earth wire erected and dismantled without using scaffolding up to three days.	Each	50
14-1-2	Providing temporary illumination consisting of LED tube light 4' x 20w or Fluorescent tube light 4' x 36/40w, 230v, 50 Hz having colour temp up to 6500k complete erected with mains and required switchgears with continuous earth wire erected and dismantled with using scaffolding up to three days.	Each	67
14-1-3	Providing temporary illumination consisting of flood light fitting 1000/500W , 230v, 50Hz complete halogen fitting with lamp, holders, mains and required switchgears with continuous earth wire erected and dismantled without using scaffolding up to three days.	Each	254
14-1-4	Providing temporary illumination consisting of flood light 1000/500W, 230v, 50Hz complete halogen fitting with lamp, holders, mains and required switchgears with continuous earth wire erected and dismantled with scaffolding up to three days.	Each	289
14-1-5	Providing temporary illumination consisting of LED flood light fitting 100w, having colour temp up to 6500k, IP65, housing of pressure die cast aluminium alloy and heat sink extruded aluminium complete erected with mains, switchgears with continuous earth wire erected and dismantled without using scaffolding up to three days	Each	954
14-1-6	Providing temporary illumination consisting of LED flood light fitting 100w, having colour temp up to 6500k, IP65, housing of pressure die cast aluminium alloy and heat sink extruded aluminium complete erected with mains, switchgears with continuous earth wire erected and dismantled with using scaffolding up to three days	Each	969
14-1-7	Providing temporary illumination consisting of flood light fitting 200 W complete LED fitting having colour temp up to 6500k, IP65, housing of pressure die cast aluminium alloy and heat sink extruded aluminium complete required switchgear erected and dismantled without using scaffolding up to three days.	Each	1351
14-1-8	Providing temporary illumination consisting of flood light fitting 200 W complete LED fitting having colour temp up to 6500k, IP65, housing of pressure die cast aluminium alloy and heat sink extruded aluminium complete required switchgear erected and dismantled with using scaffolding up to three days.	Each	1374
14-1-9	Providing temporary illumination consisting of flood light fitting 300 W complete LED fitting having colour temp up to 6500k, IP65, housing of pressure die cast aluminium alloy and heat sink extruded aluminium complete required switchgear erected and dismantled without using scaffolding up to three days.	Each	1949

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
14-1-10	Providing temporary illumination consisting of flood light fitting 300 W complete LED fitting having colour temp up to 6500k, IP65, housing of pressure die cast aluminium alloy and heat sink extruded aluminium complete required switchgear erected and dismantled with using scaffolding up to three days.	Each	1964
14-1-11	Providing temporary illumination consisting of white/colour series lights with 8mm LED miniature lamps of 2 to 3.4V [1000nos] with cap with required switchgears erected and dismantled with rotor effect as approved without scaffolding up to three days.	Per Thousand	1084
14-1-12	Providing temporary illumination consisting of white/colour series lights with 8mm LED miniature lamps of 2 to 3.4V [1000nos] with cap with required switchgears erected and dismantled with rotor effect as approved with scaffolding up to three days.	Per Thousand	1246
14-1-13	Providing and fixing temporary electronic rotating machine to give running effect to strips lights and miniature lights up to a load of 5000 W 230v, 50Hz, complete with mains and required switchgears with continuous earth wire and dismantling up to three days.	Each	509
14-1-14	Providing temporary illumination consisting of round LED/ neon flex LED/ flexible strip LED having 2 to 5 W capacity per meter and consisting suitable power adaptor with mains, required switchgears erected and dismantled without using scaffolding and maintaining the same up to 3 days	m	15
14-1-15	Providing temporary illumination consisting of round LED/ neon flex LED/ flexible strip LED having 2 to 5 W capacity per meter and consisting suitable power adaptor with mains, required switchgears erected and dismantled with using scaffolding [up to 20ft height] and maintaining the same up to 3 days	m	18
14-1-16	Providing temporary illumination consisting of water proof LED Par Light, 54 pieces x 3W, 230v, 50Hz, with RGBW controller complete erected with mains, switchgears with continuous earth wire erected and dismantled without using scaffolding up to three days	Each	1047
14-1-17	Providing temporary illumination consisting of water proof LED Par Light, 54 pieces x 3W, 230v, 50Hz, with RGBW controller complete erected with mains, switchgears with continuous earth wire erected and dismantled with using scaffolding up to three days	Each	2543
14-1-18	Providing temporary illumination consisting of water proof HMI Par Light, 4000 w, 230v, 50Hz, colour temp 6500k housing of pressure die cast aluminium alloy [multi colour] complete erected with mains, switchgears with continuous earth wire erected and dismantled without using scaffolding up to three days	Each	5834
14-1-19	Providing temporary illumination consisting of water proof HMI Par Light, 4000 w, 230v, 50Hz, colour temp 6500k housing of pressure die cast aluminium alloy[multi colour] complete erected with mains, switchgears with continuous earth wire erected and dismantled with using scaffolding up to three days	Each	6066
14-1-20	Providing temporary illumination consisting of LED rope Light having 4 to 6 W capacity per meter [multi colour] and consisting suitable power adaptor with mains, switchgears erected and dismantled without using scaffolding and maintaining the same up to 3 days	m	18

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
14-1-21	Providing temporary illumination consisting of LED rope light having 4 to 6 W capacity per meter [multi colour] and consisting suitable power adaptor with mains, switchgears erected and dismantled with using scaffolding and maintaining the same up to 3 days	m	20
14-1-22	Providing temporary 8-10 Watt rechargeable LED emergency lamp connected with necessary mains, required switchgears and continuous earthing maintaining the same during the function and including dismantling for three days.	Each	167
14-1-23	Providing temporary oscillating type pedestal air circulators 600/900 mm or air cooler connected with necessary mains, required switchgears with continuous earthing maintaining the same during the function and including dismantling up to three days.	Each	378
14-1-24	Providing temporary oscillating type pedestal fan 16" (400 mm) or ceiling fan [1200/1400mm], 230v,50Hz connected with necessary mains, required switchgears with continuous earthing maintaining the same during the function and including dismantling up to three days.	Each	191
14-1-25 (New)	Providing temporary oscillating type pedestal mist fan 16" to 26" having 10-25 ltrs water tank 230v 50Hz connected with necessary mains, required switchgears with continuous earthing maintaining the same during the function and including dismantling up to three days.	Each	437
14-1-26	Providing temporary heavy duty exhaust fan 18" or 24" 230v, 50Hz connected with necessary mains, required switchgears with continuous earthing maintaining the same during the function and including dismantling for three days.	Each	435
14-1-27	Providing temporary evaporative air cooler (desert cooler) with 230V, 50 cycles, with 12"-18" exhaust, minimum 40 to 80 litre water capacity tank connected with necessary mains, required switchgears with continuous earthing maintaining the same during the function and including dismantling up to three days.	Each	443
14-1-28	Providing and maintaining temporary 1.5 to 2 Ton capacity split type air conditioning unit complete with refrigerant R32 with temporary stand and fabrication work and required material to achieve cooling temperature connected along with necessary mains, required switchgears and continuous earthing maintaining the same during the function and including dismantling for three days.	Each	6542
14-1-29	Providing and maintaining temporary 1.5 to 2 Ton capacity window type air conditioning unit complete with refrigerant R32 with temporary stand and fabrication work and required material to achieve cooling temperature connected along with necessary mains, switchgear and continuous earthing maintaining the same during the function and including dismantling for three days.	Each	4404
14-1-30	Providing and maintaining temporary 2.5 to 3.5 Ton capacity tower type air conditioning unit complete with refrigerant R32 with temporary stand and fabrication work and required material to achieve cooling temperature connected along with necessary mains, required switchgears and continuous earthing maintaining the same during the function and including dismantling for three days.	Each	15062
14-1-31	Providing and maintaining temporary 4.5 Ton capacity tower type air conditioning unit complete with refrigerant R32 with temporary stand and fabrication work and required material to achieve cooling temperature connected along with necessary mains, required switchgears and continuous earthing, maintaining the same during the function and including dismantling for three days.	Each	17594

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
14-1-32	Providing temporary 284 to 310 litres capacity double door refrigerator complete with M.S. stand if necessary connected with mains, switchgear and continuous earthing maintaining the same during the function and including dismantling for three days.	Each	841
14-1-33	Providing temporary 120/150 litre capacity water cooler with water filter (candle type or UV tube) with M.S. stand complete with minor plumbing work if necessary connected with mains, required switchgears and continuous earthing maintaining the same during the function and including dismantling for three days.	Each	1779
14-1-34	Providing and maintaining temporary 1 KVA on line UPS pure sine wave single phase 230V,50 Hz with required batteries suitable for 30 minutes battery backup to provided computer with necessary interconnecting cabling, wiring etc for three days.	Each	2584
14-1-35	Providing and maintaining temporary 700 VA digital pure sine wave Inverter with required batteries based on IGBT technology suitable single phase 230V,50 Hz for 120 minutes battery backup to electrical installation with necessary interconnecting cabling, wiring etc for one day.	Each	592
14-1-36	Providing and maintaining temporary 1400 VA to 1600 VA digital pure sine wave Inverter with required batteries based on IGBT technology single phase 230V,50 Hz suitable for 120 minutes battery backup to electrical installation with necessary interconnecting cabling, wiring etc for one day.	Each	1040
14-1-37	Providing and maintaining temporary 2500 VA digital pure sine wave Inverter with required batteries based on IGBT technology single phase 230V,50 Hz suitable for 120 minutes battery backup to electrical installation with necessary interconnecting cabling, wiring etc for one day.	Each	1920
14-1-38	Providing temporary plug point with 3 pin 6A/16A with necessary mains, required switchgears and continuous earth connection up to three days.	Each	36
14-1-39	Providing temporary plug point with 3 phase industrial socket having CRCA sheet metal enclosure with 30A, 3 pin plug and earth socket and 30A, 3 pin, plug top with 30A, triple pole MCB, mains, switchgears with continuous earth wire up to three days	Each	142
14-1-40	Providing temporary XLPE/PVC armoured cable 4 core 50 sq mm Aluminium conductor with continuous 12 SWG G.I. Earth wire complete erected with gland and lugs and switchgears and required cable protector wherever necessary up to three days	m	26
14-1-41	Providing temporary XLPE/PVC armoured cable 4 core 95 sq mm Aluminium conductor with continuous 10 SWG G.I. Earth wire complete erected with gland and lugs and switchgears and required cable protector wherever necessary up to three days	m	35
14-1-42	Providing temporary XLPE/PVC armoured cable 3.5 core 150 sq mm aluminium conductor with continuous 8 SWG G.I. earth wire complete erected with gland and lugs and switchgears and required cable protector wherever necessary up to three days	m	52
14-1-43	Providing temporary XLPE/PVC armoured cable 3.5 core 240 sq mm aluminium conductor with continuous 8 SWG G.I. Earth wire complete erected with gland and lugs and switchgears and required cable protector wherever necessary up to three days	m	69

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
14-1-44	Providing temporary XLPE/PVC armoured cable 3.5 core 300 sq mm aluminium conductor with continuous 8 SWG G.I. Earth wire complete erected with gland and lugs and switchgears and required cable protector wherever necessary up to three days	m	82
14-1-45	Providing temporary XLPE/PVC armoured cable 3.5 core 400 sq mm aluminium conductor with continuous 8 SWG G.I. Earth wire complete erected with gland and lugs and switchgears and required cable protector wherever necessary up to three days	m	97
14-1-46	Providing and maintaining temporary LCD/LED T.V. (43" to 55" size) with HDMI port, USB port, AV port, and positioning at site with required cabling as per direction of authority, duly connecting and testing for three days.	Each	1195
14-1-47	Providing temporary digital projector having Full HD 1080p resolution with White and Colour Brightness at range of 3000-4000lm,HDMI port, USB port, AV port, computer port with spring loaded white screen connected with necessary mains, required switchgears and maintaining the same during the function including dismantling.	Each	5759
14-1-48	Providing, maintaining and operating temporary public address system on hire consisting 02 Nos. solid state heavy wattage amplifier 250 watts (one for working and another for stand by emergency) working on AC / generator and 24 volt car battery supply, 06 Nos. of matching of 100 volt line (200 watts) box type speakers/sound column, 02 Nos super sensitive microphone with suitable size of microphone holding stand. The system shall be in a fully automatic change over operation in case of failure of supply for one day.	Job	8831
14-1-49 (New)	Providing, maintaining and operating temporary PA audio mixing consoles - stereo with built-in MP3 player, 48V phantom supply on all channels professional mixer with 24 digital effects, 2 Group outputs. Mixer shall have 12 MIC and 10 line balanced mono inputs with enhanced headroom & each input channel has a gain control, 4 band active EQ controls, AUX1, AUX2, AUX3/EFX, AUX4/FX and PAN control with channel mute switch, with easy and accurate monitoring of left & right output levels through individual 12 segment LED array, 11 preset EQ settings & headphone output with level control for output monitoring. The system shall be in a fully automatic change over operation in case of failure of supply for one day.	Job	2047
14-1-50 (New)	Providing, maintaining and operating temporary dual PA UHF wireless microphone on hire consisting 01 Nos. receiver having S/N ratio 100dB, frequency response 50-15000Hz, controls like ON/OFF Switch, Volume control and 02 Nos. of handheld wireless transmitter with new AA batteries having ON/OFF Switch, channel frequency display, carrier frequency range 630-664MHz for one day.	Job	551
14-1-51	Providing and maintaining temporary additional box type speaker of 100 Volt line (100 watts) for one day.	Each	386
14-1-52	Providing and maintaining temporary cordless (Hand type or lapel type) super sensitive UHF microphone (1 no stand by) for one day.	Each	2870
14-1-53	Providing temporary line matching transformer (40-XT) for speakers having distance more than 60 Mtrs from Amplifiers and maintaining the same up to 1 day.	Each	214
14-1-54	Providing, maintaining and operating temporary fingertip switcher of 8 ways to operate the public address system between dais and participants in the hall with necessary cabling, wiring etc for one day.	Each	1997

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
14-1-55	Providing, commissioning and maintaining temporary CCTV system with 8 channel NVR , IP video/audio input - 1 no, IP based 4.0 MP , Full HD, IR IP dome camera - 2 nos, IP based 4.0 MP , Full HD, IR IP PTZ camera - 2 nos, 4TB Hard Disk - 2 no, 42" Full H D professional display - 1 no, 8 port PoE Switch - 1 no, Power supply unit to camera - 1 no, On Line UPS - 1 no with necessary mains, switchgears on hire basis for one day	Job	12474
14-1-56	Providing, commissioning and maintaining additional IP based 4.0 MP, full HD,IP67 , IR IP dome camera in existing CCTV system with necessary mains, switchgears on hire basis for one day.	Each	932
14-1-57	Providing, commissioning and maintaining additional IP based 4.0 MP, Full HD, IP67, IR IP PTZ camera in existing CCTV system with necessary mains, switchgears on hire basis for one day.	Each	2788
14-1-58	Providing and maintaining temporary all in one desktop PC with following configuration Intel Core i3, 8 GB DDR4 RAM, 1TB HDD, DVDR W optical drive 22-24" LED screen, web camera, Wi-Fi, Bluetooth, keyboard and mouse, media card reader, HDMI port, USB type-A port [2nos]with windows 10[64bit] etc for three days.	Each	1318
14-1-59	Providing and maintaining temporary Laptop with following configuration Intel TM s 11th generation core i3 , 8GB DDR4 RAM, 256GB SSD , DVDR W optical drive, 15" LED screen, speakers, web camera, Wi-Fi, Bluetooth, media card reader, HDMI port, USB type-A port [2nos]with windows 10[64bit] & laptop charger etc for three days.	Each	1337
14-1-60	Providing and maintaining temporary Laser Printer , resolution (in dpi) mono 600, paper size A4, print speed in PPM (A4 size) 25, Port : 1 USB, memory (in MB): NA network card 10/100:YES, Duplexing: YES etc on hire basis for three days.	Each	389
14-1-61	Providing and maintaining distribution transformer 11kV / 22 kV on HV side & 415 V on LV side from 63 to 200 kVA Capacity Indoor/outdoor type as per IS 1180 for ten days on hired basis.	Each	19000
14-1-62	Providing and maintaining distribution transformer 11kV / 22 kV on HV side & 415 V on LV side from 250 to 500 kVA Capacity Indoor/outdoor type as per IS 1180 for ten days on hired basis.	Each	28500
14-1-63	Providing and maintaining distribution transformer 11/ 22 kV on HV side 415 V on LV side having 630 kVA capacity Indoor/outdoor type as per IS 1180 on hired basis subsequent to first ten days after commissioning.	Each	40218
14-1-64	Erecting 11kV / 22 kV on HV side & 415 V on LV side up to 630 kVA capacity hired/provided transformer on existing plinth / DP structure, making connections on HV & LV side, carrying out necessary tests before and after charging up to full load to satisfaction.	Each	9381

Note 1) For item no. 14-1-1 to 14-1-34 and 14-1-38 to 14-1-46 and 14-1-58 to 14-1-60 the rates are for the period of 3 days function which includes preparatory period with testing and connecting, commissioning and maintaining in healthy condition with transportation.

2) For each additional day after 3 days but not exceeding 15 days, add 25% per day.

3) For additional (i.e. after for 3+15) days, add 5% per day but total rental charges shall be limited to 80% of full rate of completed item.

4) For item no. 14-1-47 the rates of projector for 1 function or for max. period of 1 day whichever is more, including transportation, connections with projector, operator till completion of function.

5) Cartridge refilling is not added in the cost of Item no.14-1-60. Rs300/- shall be added for each cartridge refilling.

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<p>6) Rate for Item no 14-1-35 to 14-1-37, 14-1-47 to 14-1-57, is for one day only . For next five days the rate shall be reduced by 10% of the first day . From 7th to 15th Days rate shall be reduced by 50% of first day. From 16th to 30th day rates shall be reduced by 75 % of first day</p> <p>7) Height of scaffolding is consider up to 20ft .</p>		
<i>14.2 Hiring of Generators (TE-DG)</i>			
14-2-1	Hiring charges for supplying and maintaining 230V, 50 cycles AC generating set 1 to 2 kVA capacity with necessary fuel, mains, switchgears and accessories complete with continuous running on load/no load as per requirements complete with self certification.	Per Day	2669
14-2-2	Hiring charges for supplying and maintaining 230/415 V, 50 cycles AC generating set 3 to 10 kVA capacity with necessary fuel, mains, switchgears and accessories complete with continuous running on load/no load as per requirements complete with self certification.	Per Day	5519
14-2-3	Hiring charges for supplying and maintaining temporary 415V, 50 cycles AC generating set 11 to 20 kVA capacity with necessary fuel, mains, switchgears and accessories complete with continuous running on load/no load as per requirements complete with self certification.	Per Day	8507
14-2-4	Hiring charges for supplying and maintaining temporary 415V, 50 cycles AC generating set 25 to 40 kVA capacity with voltage regulation +/- 5 %, and complete set enclosed in composite acoustic enclosure to restrict sound level up to 75 dB at 1.0 m with necessary fuel, mains, switchgears and accessories complete with continuous running on load/no load as per requirements complete with self certification.	Per Day	10115
14-2-5	Hiring charges for supplying and maintaining temporary 415V, 50 cycles AC generating set 50/62.5 kVA capacity with voltage regulation +/- 5 %, and complete set enclosed in composite acoustic enclosure to restrict sound level up to 75 dB at 1.0 m with necessary fuel, mains, switchgears and accessories complete with continuous running on load/no load as per requirements complete with self certification.	Per Day	12950
14-2-6	Hiring charges for supplying and maintaining temporary 415V, 50 cycles AC generating set 75 to 100 kVA capacity with voltage regulation +/- 5 %, and complete set enclosed in composite acoustic enclosure to restrict sound level up to 75 dB at 1.0 m with necessary fuel, mains, switchgears and accessories complete with continuous running on load/no load as per requirements complete with self certification.	Per Day	16803
14-2-7	Hiring charges for supplying and maintaining temporary 415V, 50 cycles AC generating set 125 kVA capacity with voltage regulation +/- 5 %, and complete set enclosed in composite acoustic enclosure to restrict sound level up to 75 dB at 1.0 m , with necessary fuel, mains, switchgears and accessories complete with continuous running on load/no load as per requirements complete with self certification.	Per Day	22507
14-2-8	Hiring charges for supplying and maintaining temporary 415V, 50 cycles AC generating set 250 kVA capacity with voltage regulation +/- 5 %, and complete set enclosed in composite acoustic enclosure to restrict sound level up to 75 dB at 1.0 m , with necessary fuel, mains, switchgears and accessories complete with continuous running on load/no load as per requirements complete with self certification.	Per Day	43758

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
14-2-9	Hiring charges for supplying and maintaining temporary 415V, 50 cycles AC generating set 320 kVA capacity with voltage regulation +/- 5 %, and complete set enclosed in composite Acoustic enclosure to restrict sound level up to 75 dB at 1.0 m, with necessary fuel, mains, switchgears and accessories complete with continuous running on load/no load as per requirements with necessary certificate from Electrical Inspector.	Per Day	54019
14-2-10	Hiring charges for supplying and maintaining temporary 415V, 50 cycles AC generating set 500 kVA capacity with voltage regulation +/- 5 %, and complete set enclosed in composite Acoustic enclosure to restrict sound level up to 75 dB at 1.0 m with necessary fuel, mains, switchgears and accessories complete with continuous running on load/no load as per requirements with necessary certificate from Electrical Inspector.	Per Day	73417
14-2-11 (New)	Hiring charges for supplying and maintaining temporary 415V, 50 cycles AC generating set 750 kVA capacity with voltage regulation +/- 5 %, and complete set enclosed in composite acoustic enclosure to restrict sound level up to 75 dB at 1.0 m with necessary fuel, mains, switchgears and accessories complete with continuous running on load/no load as per requirements with necessary certificate from Electrical Inspector.	Per Day	113042
14-2-12 (New)	Hiring charges for supplying and maintaining temporary 415V, 50 cycles AC generating set 1000 kVA capacity with voltage regulation +/- 5 %, and complete set enclosed in composite acoustic enclosure to restrict sound level up to 75 dB at 1.0 m with necessary fuel, mains, switchgears and accessories complete with continuous running on load/no load as per requirements with necessary certificate from Electrical Inspector.	Per Day	117494
Note	<p>1) Above rates are applicable for first day. For subsequent five days, the above rate shall be reduced by 10%</p> <p>2) The above rates are inclusive of transportation.</p> <p>3) The above note does not include preparatory and testing period, and no additional amount shall be paid for that.</p> <p>4) The above rates are with on load working of DG set up to 5 hours per day. For additional working hours exceeding average 5 hours per day cost of diesel shall be considered as per actual.</p> <p>5) Lump sum provision for the additional fuel (if DG set is to be used for more than five hours) shall be made as a separate item in the estimate of temporary D G Set. (Fuel payment shall be made on the basis of actual consumption and invoice produced by the contractor.</p>		

Chapter: 15
Siren (SRN)

15.1 Siren

15.2 Accessories for Siren

15.3 Dismantling

SRN-SRN

Chapter 15 : SIREN (SRN)

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)

15.1 Siren

15-1-1	Supplying, installation, testing and commissioning of 220/250 Volts, single phase, 50 Hz Siren of 3.25 km range (Diametrical), horizontal double mounting type of 0.5 HP 6000 RPM on C. C. foundation complete as per specification no. SRN-AS/SM	Each	14867
15-1-2	Supplying, installation, testing and commissioning of 415 Volts, 3 phase, 50 Hz Siren of 8 km range (Diametrical), horizontal double mounting type of 5 H.P. 2800 RPM on C.C. foundation complete as per specification no. SRN-AS/SM	Each	78798
15-1-3 (New)	Re-erecting repaired/replaced 0.5 HP, 230/250 V, single phase, 50 Hz siren motor duly lifting at site and connected with assembly of existing siren with proper alignment, testing and giving test trial as per the required standard.	Each	374
15-1-4 (New)	Re-erecting repaired/replaced 5 HP, 415 V, 3 phase, 50 Hz siren motor duly lifting at site and connecting with assembly of existing siren with proper alignment, testing and giving test trial as per the required standard.	Each	698

Note Items of sub chapter 15.1 are conforming to IS 1941 (Part I) 1976.(Re-affirmed in 2002) - Functional requirements for electric motor sirens (second revision)

15.2 Accessories for Siren

15-2-1	Scrapping the existing paint of outer surface of weather shade for siren, cleaning the surface and applying two coats of anticorrosive epoxy air dry paint of approved colour mixed in special type thinner complete as per specification no. SRN-AS/PTG	Each	1266
15-2-2	Scrapping existing paint of Siren motor, blower and iron foundation completely and painting the same by one coat of red oxide and two coats epoxy paint of superior quality of required colour.	Each	837
15-2-3	Providing C.C. foundation (1:2:4) with plastering of size 60 x 60 x 20 cm for Siren motor with nutbolts of required size with 1.2 cm thick hard rubber sheet packing provided in between the foundation and motor base to minimise the jerks and vibration to the slab complete.	Each	1563
15-2-4	Supplying and fixing required quality metal elastic anti vibration rubber mounting pad to siren.	Each	747
15-2-5	Replacing the existing unserviceable worn-out bearing for heavy duty siren motor.	Each	910

15.3 Dismantling

15-3-1	Transportation of siren motor from site to workshop and back to the site. (For Municipal Corporation Area Only)	Per Km	61
15-3-2	Dismantling the existing Siren motor from the existing location, lowering from terrace to ground, loading and unloading.	Each	747

Chapter: 16
Civil Work (CW)

16.1 Excavation	(CW-EXN)
16.2 Masonry Work	
16.3 C.C. Foundation	
16.4 Painting	(CW-PTG)
16.5 Plumbing	(CW-PLB)
16.6 Plumbing Accessories	

Chapter 16 : CIVIL WORKS

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)

16.1 Excavation (CW-EXN)

16-1-1	Making trench in soft soil having 0.75 m depth and minimum 0.3 m width for laying provided cables up to voltage level of 1.1kV complete As per specification No. CW-EXN-CTR	m	161
16-1-2	Making trench in Hard murum/Tar road having 0.75 m depth and minimum 0.3mtr width as per IS for laying provided cables up to voltage level 1.1Kv cable complete as per specification No. CW-EXN-CTR	m	199
16-1-3 (New)	Making trench in soft soil having 0.9m depth and minimum 0.3 m width as per IS for laying provided cables of voltage range 3.3 kV to 11 kV complete as per specification No. CW-EXN-CTR	m	223
16-1-4 (New)	Making trench in hard murum/Tar road having 0.9 m depth and minimum 0.3mtr width for laying provided cables of voltage range 3.3 kV to 11 kV complete as per specification No. CW-EXN-CTR	m	274
16-1-5	Excavating hard Rock or bituminous road by chiselling for preparing pit for pole / stay/earth plate / for laying cable/ pipe & clearing the site by removing debris & making the site as required complete.	m ³	1081
16-1-6	Excavating hard murum / stone metal road by chiselling for preparing pit for poles stay or earth plates or for laying cables, pipes & clearing the site by removing debris & making the site as required complete.	m ³	270
16-1-7	Excavating soft murum / soft soil road by chiselling for preparing pit for poles stay or earth plates or for laying cables, pipes & clearing the site by removing debris & making the site good complete.	m ³	232

Note 1) For laying additional cable in same trench add Rs. 45/- per metre for additional bricks between and above the extra cable.

2) For laying additional cable in same trench above 25 sq.mm, bricks shall be laid width wise above the cable. rate shall be increased by Rs. 48/- per metre.

16.2 Masonry Work

16-2-1	Providing and making second class Burnt Brick masonry with conventional /I.S. type bricks in cement mortar 1:6 in foundation sand plinth of inner walls /in plinth external walls including bailing out water manually, striking joints on unexposed faces, raking out joints on exposed faces and watering etc. Complete.	m ³	5502
16-2-2	Supplying & arranging burnt cured bricks properly for various purposes (size 9"x4.25"x3") at work for 100 bricks complete.	Job	640
16-2-3	Supplying and spreading stone metal 25 mm size for 100 mm depth above the ground level complete.	m ²	102
16-2-4	Providing and fixing reinforced cement concrete cover of size 60 cm x 45 cm with frame over inspection chamber etc. complete of medium duty (100 Kilogram).	Each	2763

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>16.3 C.C. Foundation</u>			
16-3-1	Making transformer plinth (1.5 x 1.5 x 1.5) m in size with necessary excavation in ground with 150 mm. thick M- 10 PCC at the bottom and top and 250 mm. thick, burnt brick wall constructed at periphery and remaining hollow portion shall be filled with 40mm hard broken aggregate. External surface duly plastered by 12 mm thick including watering etc complete.	Each	14302
Note	The above rates are for 1.2 meter height plinth above ground level. If excess height is required to maintain ground clearance as per Central Electricity Authority (Measures Relating to Safety and Electric Supply) regulations, 2010 regulations, add Rs. 820/- for every 100 mm.		
16-3-2	Making cement concrete foundation including excavation (45 x 45 x 120) cm deep in 1:3:6 cement concrete, 20 to 25 mm stone metal, (45 x 45 x 45) cm / 45 cm dia. x 45 cm height plinth duly plastered, with necessary curing and finishing complete. (for 6 m pole)	Each	1301
16-3-3	Making cement concrete foundation including excavation (60 x 60 x 150) cm deep in 1:3:6 cement concrete 20 x 25 mm stone metal, (45 x 45 x 45) cm /45 cm dia. x 45 cm height plinth duly plastered, with necessary curing and finishing complete. (above 6 m to 9 m poles)	Each	2033
16-3-4	Making cement concrete foundation including excavation (60 x 60) cm x deep 1/6 of pole length in 1:3:6 cement concrete 20 x 25 mm stone metal, 45 cm x 45 cm x 45 cm /45 cm dia. x 45 cm. height plinth duly plastered, with necessary curing and finishing complete. (for above 9 m poles)	Each	2177
16-3-5	Making cement concrete foundation in 1:2:4 cement concrete with foundation bolts and nuts complete. (cost of wooden box is included) (for pumps).	m ³	5011
16-3-6	Making cement concrete foundation including excavation (60 x 60 x 150) cm deep in 1:3:6 cement concrete, (20 to 25) mm stone metal with necessary curing and finishing complete. (for stay).	Each	1509
16-3-7	Making cement concrete foundation in 1:3:6 cement concrete, (20 to 25) mm. stone metal duly plastered with necessary curing for complete. (pole muffing or any other purpose).	m ³	3435
16-3-8	Making M- 20 grade reinforced cement concrete foundation by considering the safe soil bearing capacity as 10 T/sq.m at 1.5 m depth including supply of steel, concrete, excavation, fixing provided nut bolts with the help of template, duly plastered as per design complete (for 3 to 5m octagonal / conical GI pole).	Each	3060
16-3-9	Making M- 20 grade reinforced cement concrete foundation by considering the safe soil bearing capacity at site as 10 T/sq.m at 1.5 m depth including supply of steel, concrete, excavation and fixing provided nut bolts with the help of template, duly plastered as per design complete (for 6m to 8m high octagonal /conical GI pole).	Each	3684
16-3-10	Making M- 20 grade reinforced cement concrete foundation by considering the safe soil bearing capacity at site as 10 T/sq.m at 1.5 m depth including supply of steel, concrete, excavation and fixing provided nut bolts with the help of template, duly plastered as per design complete (for 9m & 10m high octagonal /conical GI pole).	Each	4904

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
16-3-11	Making M- 20 grade reinforced cement concrete foundation by considering the safe soil bearing capacity at site as 10 T/sq. m at 1.5 m depth including supply of steel, concrete, excavation and fixing provided nut bolts with the help of template, duly plastered as per design complete (for 11m & 12.5m high octagonal /conical GI pole).	Each	6860
16-3-12	Making M- 20 cement concrete foundation by considering the safe soil bearing capacity at site as 10 T/sq. m at 2 m depth including excavation and fixing provided nut bolts with the help of template, duly plastered as per design complete (for 12.5 m raising lowering high mast).	Each	25595
16-3-13	Making M- 20 cement concrete foundation by considering the safe soil bearing capacity at site as 10 T/sq. m at 2 m depth including excavation and fixing provided nut bolts with the help of template, duly plastered as per design complete (for 16 m raising lowering high mast).	Each	30799
16-3-14	Making M- 20 cement concrete foundation by considering the safe soil bearing capacity at site as 10 T/sq. m at 2 m depth including excavation and fixing provided nut bolts with the help of template, duly plastered as per design complete (for 20 m raising lowering high mast) .	Each	37624
16-3-15	Making M- 20 cement concrete foundation suitable by considering the safe soil bearing capacity at site as 10 T/sq. m at 2 m depth including excavation and fixing provided nut bolts with the help of template, duly plastered as per design complete (for 25 m high mast).	Each	43708
<u>16.4 Painting (CW-PTG)</u>			
16-4-1	Spray painting the table fan / pedestal fan / cabin fan / ceiling fan / exhaust fan including guards etc by scrapping the existing paint complete as per specification no. CW-PTG/PTF.	Each	140
16-4-2	Painting of pipe pole up to 6 m length along with street light / pole brackets / clamps etc by scrapping the existing paint complete as per specification no CW -PTG/PTP.	m	62
16-4-3	Painting of steel tubular / rail / RSJ pole above 6.0 m length along with street light pole brackets, clamps etc by scrapping the existing paint complete as per specification no CW -PTG/PTP.	m	84
16-4-4	Spray painting of panel type lift doors of MS complete as per specification no. CW-PTG/PLD1.	Each	922
16-4-5	Painting lift door of collapsible type complete as per specification no. CW-PTG/PLD2.	Each	748
16-4-6	Spray painting of distribution transformer up to 200 kVA capacity complete as per specification no. CW-PTG/PDT.	Job	2529
16-4-7	Spray painting of distribution transformer above 200 kVA capacity complete as per specification no. CW-PTG/PDT.	Job	3484
16-4-8	Painting fencing of transformer substation including all supports, iron work and doors from both sides by scrapping existing paint, with one coat of red oxide & two coats of aluminium paint complete.	m ²	114
16-4-9	Painting of feeder pillar / switchgears and frame of panel board with single coat of red oxide & two coats of approved quality enamel paint by scrapping existing paint painting the same complete. (while calculating square meter area, area of angle iron frame on which the switchgears are erected shall be considered if required)	m ²	254

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
16-4-10	Powder coating of approved colour shade on both sides of provided iron work / MS / CRCA sheet steel work complete including anti-rust treatment complete.	m ²	391
16-4-11	Epoxy painting on both side of approved colour shade of provided iron work / MS / CRCA sheet steel work complete along with anti-rust treatment complete.	m ²	537
16-4-12	Painting identification number by indelible ink marker / enamel paint on fittings / equipment with the help of ladders if necessary by dismantling and refitting the enclosures, tubes etc if required the same and refitting complete.	Each	8

16.5 Plumbing (CW-PLB)

16-5-1	Supplying and erecting GI pipe 15 mm dia. 'B' class at position with accessories complete as per specification no. CW-PLB/GP.	m	193
16-5-2	Supplying and erecting ISI mark GI pipe 20 mm dia.'B' class at position with accessories complete as per specification no. CW-PLB/GP.	m	238
16-5-3	Supplying and erecting ISI mark GI pipe 25 mm. dia. 'B' class at position with accessories complete as per specification no. CW-PLB/GP.	m	339
16-5-4	Supplying and erecting ISI mark GI pipe 32 mm dia.'B' class at position with accessories complete as per specification no. CW-PLB/GP.	m	423
16-5-5	Supplying and erecting ISI mark GI pipe 40 mm. dia. 'B' class at position with accessories complete as per specification no. CW-PLB/GP.	m	495
16-5-6	Supplying and erecting ISI mark GI pipe 50 mm dia.'B' class at position with accessories complete as per specification no. CW-PLB/GP.	m	677
16-5-7	Supplying and erecting ISI mark GI pipe 65 mm. dia. 'B' class at position with accessories complete as per specification no. CW-PLB/GP.	m	853
16-5-8	Supplying and erecting ISI mark GI pipe 75/80 mm dia. 'B' class at position with accessories complete. Specification no. CW-PLB/GP.	m	1101
16-5-9	Supplying and erecting ISI mark GI pipe 100 mm dia. 'B' class at position with accessories complete. Specification no. CW-PLB/GP.	m	1570
16-5-10	Supplying and erecting ISI mark GI pipe 32 mm. dia 'C' class at position with accessories complete. Specification no. CW-PLB/GP.	m	510
16-5-11	Supplying and erecting ISI mark GI pipe 40 mm. dia 'C' class at position with accessories complete. Specification no. CW-PLB/GP.	m	587
16-5-12	Supplying and erecting ISI mark GI pipe 50 mm. dia 'C' class position with accessories complete. Specification no. CW-PLB/GP.	m	807
16-5-13	Supplying and erecting ISI mark GI pipe 65 mm. dia 'C' class position with accessories complete. Specification no. CW-PLB/GP.	m	1013
16-5-14	Supplying and erecting ISI mark GI pipe 75/80 mm dia 'C' class position with accessories complete. Specification no. CW-PLB/GP.	m	1270
16-5-15	Supplying and erecting ISI mark GI pipe 100 mm dia 'C' class position with accessories complete. Specification no. CW-PLB/GP.	m	1823
16-5-16	Supplying and erecting high density polythene pipe ISI mark 32 mm dia. suitable for pressure of 6 kg/cm ² connected to jet/submersible pump with required material complete.	m	57
16-5-17	Supplying and erecting high density polythene pipe ISI mark 40 mm dia. suitable for pressure of 6 kg/cm ² connected to jet/submersible pump with required material complete.	m	97

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
16-5-18	Supplying and erecting high density polythene pipe ISI mark 50 mm. dia. suitable for pressure of 6 kg. / cm ² connected to jet/submersible pump with required material complete.	m	129
<u>16.6 Plumbing Accessories</u>			
16-6-1	Supplying and erecting 25 mm dia. gun metal foot valve position with necessary materials complete.	Each	443
16-6-2	Supplying and erecting 40 mm dia. gun metal foot valve at position with necessary materials complete.	Each	843
16-6-3	Supplying and erecting 50 mm dia. gun metal foot valve at position with necessary materials complete.	Each	1102
16-6-4	Supplying and erecting 65 mm dia. gun metal foot valve at position with necessary materials complete.	Each	2013
16-6-5	Supplying and erecting 75/80 mm dia. gun metal foot valve at position with necessary materials complete.	Each	2637
16-6-6	Supplying and erecting 100 mm dia. gun metal foot valve at position with necessary materials complete.	Each	4042
16-6-7	Supplying and erecting 25 mm dia. cast iron foot valve at position with necessary materials complete.	Each	313
16-6-8	Supplying and erecting 40 mm dia. cast iron foot valve at position with necessary materials complete.	Each	509
16-6-9	Supplying and erecting 50 mm dia. cast iron foot valve at position with necessary materials complete.	Each	644
16-6-10	Supplying and erecting 65 mm dia. cast iron foot valve at position with necessary materials complete.	Each	1022
16-6-11	Supplying and erecting 75/80 mm dia. cast iron foot valve at position with necessary materials complete.	Each	1494
16-6-12	Supplying and erecting 100 mm dia. cast iron foot valve at position with necessary materials complete.	Each	3089
16-6-13	Supplying and erecting 25 mm dia. gun metal sluice valve at position with necessary materials complete.	Each	873
16-6-14	Supplying and erecting 40 mm. dia. gun metal sluice valve at position with necessary materials complete.	Each	1672
16-6-15	Supplying and erecting 50 mm dia. gun metal sluice valve at position with necessary materials complete.	Each	2396
16-6-16	Supplying and erecting 65 mm dia. gun metal sluice valve at position with necessary materials complete.	Each	4456
16-6-17	Supplying and erecting 75/80 mm dia. gun metal sluice valve at position with necessary materials complete.	Each	6277
16-6-18	Supplying and erecting 100 mm dia. gun metal sluice valve at position with necessary materials complete.	Each	12177
16-6-19	Supplying and erecting non return valve 25 mm dia in position made of gun metal complete.	Each	556
16-6-20	Supplying and erecting non return valve 40 mm dia in position made of gun metal complete.	Each	1051
16-6-21	Supplying and erecting non return valve 50 mm dia in position made of gun metal complete.	Each	1532

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
16-6-22	Supplying and erecting non return valve 65 mm dia in position made of gun metal complete.	Each	3316
16-6-23	Supplying and erecting non return valve 75/80 mm dia in position made of gun metal complete.	Each	4475
16-6-24	Supplying and erecting non return valve 100 mm dia in position made of gun metal complete.	Each	8406
16-6-25	Supplying and erecting CI flange 25 mm dia with necessary nuts bolts and washers with rubber seal in position complete.	Each	159
16-6-26	Supplying and erecting CI flange 40 mm dia with necessary nuts bolts and washers with rubber seal in position complete.	Each	169
16-6-27	Supplying and erecting CI flange 50 mm. dia with necessary nuts bolts and washers with rubber seal in position complete.	Each	202
16-6-28	Supplying and erecting CI flange 65 mm. dia with necessary nuts bolts and washers with rubber seal in position complete.	Each	254
16-6-29	Supplying and erecting CI flange 75/80 mm. dia with necessary nuts bolts and washers with rubber seal in position complete.	Each	428
16-6-30	Supplying and erecting CI flange 100 mm. dia with necessary nuts bolts and washers with rubber seal in position complete.	Each	449
16-6-31	Supplying and erecting 0-100 lb/sq. inch pressure gauge having 4" dia complete with socket for 1/2" GI pipe complete.	Each	716
16-6-32	Supplying and erecting 40 mm dia. ball type foot valve having CI body lined with FRP from inside and synthetic rubber coated reinforced, nitrile rubber ball, leaded fin bronze, FRP sheet, carbon steel fasteners, CI./MS strainer complete.	Each	1229
16-6-33	Supplying and erecting 50 mm dia. ball type foot valve having CI body lined with FRP from inside and synthetic rubber coated reinforced, nitrile rubber ball, leaded fin bronze, FRP sheet, carbon steel fasteners, CI./MS strainer complete.	Each	1737
16-6-34	Supplying and erecting 65 mm dia. ball type foot valve having CI body lined with FRP from inside and synthetic rubber coated reinforced, nitrile rubber ball, leaded fin bronze, FRP sheet, carbon steel fasteners, CI./MS strainer complete.	Each	2448
16-6-35 (New)	Providing and fixing 45 cm wide mild steel ladder of 40mm x 6 mm mild steel flat stringers and steps of 18 mm dia. mild steel bar for water tank including fixing it in (1:2:4) M-15 cement concrete block 60cm x 30cm x 30cm and painting the ladder complete. (Anti Corrosive Paint)	m	1128
16-6-36 (New)	Providing and applying white-wash in one coat on old / new plastered or masonry surfaces and asbestos cement sheets including scaffolding and preparing the surface by brushing and brooming down etc. complete.	sq.m	8
16-6-37 (New)	Providing internal cement plaster 12mm thick in single coat in cement mortar 1:5 without neeru finish to concrete or brick surfaces, in all positions including scaffolding and curing etc. complete.	sq.m	271
16-6-38 (New)	Providing sand faced plaster externally in cement mortar using approved screened sand, in all positions including base coat of 15 mm thick in cement mortar 1:4 using waterproofing compound at 1 kg. per cement bag curing the same for not less than 2 days and keeping the surface of the base coat rough to receive the sand faced treatment 6 to 8 mm thick in cement mortar 1:4 finishing the surface by taking out grains and curing for fourteen days with scaffolding etc. complete.	sq.m	639

Note:- For ball type foot valve above 65 mm refer chapter 13

Chapter: 17
Lift (LFT)

17.1 New Installation

17.2 Dismantling

Chapter No : 17 LIFTS (LFT)

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)

17-1 New Installation

17-1-1	<p>SITC of Electric Traction Passenger Lift with</p> <ul style="list-style-type: none"> · Rated capacity :- 4 Passenger/272Kg · Floors :- G+1 floor (2 Stops/2 Landings) · Travel :- 3 to 4.2 mtrs · Location of Lift Machine:- MR/MRL · Rated speed :- 1.0 mps VS · Car/Landing door clear opening of 700/800 mm wide x 2000 mm high · Clear Car size ofmm wide xmm deep x 2250mm high · Lift shaft available having clear size ofmm wide xmm deep,mm Pit depth,mm Overhead. · Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid (non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames. The lift doors shall have minimum 1 hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory). · Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation & SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge. · COP with SS face plate having metallic push buttons with Braille code & luminous indicator around button with FPI, scrolling UP/DN LED indicator & with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi & English with intercom system with telephone instrument in Lift car, LMR & FCC/ground floor. · LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code & luminous indicator around button with CPI, Lift car arrival & next travel direction audio-visual indication at all landings. · Lift controller based on microprocessor/ PLC with VVVF Drive having closed loop control system, with IBMS compatible having necessary port. The controller shall have necessary protections such as overcurrent, overvoltage, over speed, overheat for all devices including lift motor and travel direction protection, protection for phase loss at input or output etc. various operation modes such as maintenance, change direction by attendant, full load bypass, VIP call operation, self levelling operation, call cancel facility, auto return to home landing, fireman evacuation operation, earthquake operation, door open/close operation from COP etc. The system can record information for minimum 30 latest faults, with real-time clock management and handheld keypad with LCD screen for view and setting of parameters. The control panel duly wired with proper size & strength, copper wire for power & control circuit, with provision for addition of floor/control card & allied accessories control panel having enclosure of 1.5mm CRCA sheet with powder coating with IP54 Protection class. · ARD complete with necessary SMF VRLA batteries. · Fireman controller having fireman switch at fire Landing. 	Job	980626
--------	--	-----	--------

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · CCTV surveillance system comprises of 2 nos minimum 2.0 MP FHD IP based vandal proof Dome camera in lift car & in LMR/inside lift shaft top aimed on lift machinery & controller with NVR kept in LMR/FCC with HDR data backup for min. 90 days with min. 18" FHD TV monitor, to be kept in FCC/LMR as directed by Engineer In Charge. · Lift Machine of Gearless PMSM of suitable kW with duty cycle of minimum 120 starts/hr (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory), with Traction pulley, OSG, electromagnetic brakes, entire assembly mounted on adequate size girders duly fixed on LMR floor/ shaft walls complete with main/diverter traction sheaves, suspension wire ropes/belts of adequate size & strength. · Other mechanical parts such as "T" section adequate size guide rails for car & counter weight with brackets fasteners, counter weight frame with necessary blocks, buffers with necessary support arrangement, MS pit ladder etc. erected with necessary steel work. · Minor civil work such as alteration work if any necessary for erection of landing door frames and it's accessories e.g. sill, header, hole pass etc complete with plaster finish, civil work for erection buffers, erection of lift machinery, adequate size core cuts if required & scaffolding for erecting guide rails, providing and fixing steel girders/RCC work having adequate strength for mounting and hoisting lift machine etc. complete as per specification no. LFT. · General: - Job includes entire procedure of obtaining all necessary erection permissions & "License to Work the Lift" from Electrical Inspector(Lifts) with submission to the Engineer In Charge. · The above rate includes Fully Comprehensive AMC for one year from the date of commissioning. 		
17-1-2	<p>SITC of Electric Traction Passenger Lift with</p> <ul style="list-style-type: none"> · Rated capacity :- 6 Passenger/408Kg · Floors :- G+1 floor (2 Stops/2 Landings) · Travel :- 3 to 4.2 mtrs · Location of Lift Machine:- MR/MRL · Rated speed :- 1.0mps VS · Car/Landing door clear opening of 800 mm wide x 2000mm high · Clear Car size ofmm wide xmm deep x 2250mm high · Lift shaft available having clear size ofmm wide xmm deep,mm Pit depth,mm Overhead. · Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid(non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames The lift doors shall have minimum 1 hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory). · Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation & SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge. · COP with SS face plate having metallic push buttons with Braille code & luminous indicator around button with FPI, scrolling UP/DN LED indicator & with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi & English with intercom system with telephone instrument in Lift car, LMR & FCC/ground floor. 	Job	1004957

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
17-1-3	<p>SITC of Electric Traction Passenger Lift with</p> <ul style="list-style-type: none"> · Rated capacity :- 8 Passenger/544Kg · Floors :- G+1 floor (2 Stops/2 Landings) · Travel :- 3 to 4.2 mtrs · Location of Lift Machine:- MR/MRL · Rated speed :- 1.0 mps VS 	Job	1087600
	<ul style="list-style-type: none"> · LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code & luminous indicator around button with CPI, Lift car arrival & next travel direction audio-visual indication at all landings. · Lift controller based on microprocessor/ PLC with VVVF Drive having closed loop control system, with IBMS compatible having necessary port. The controller shall have necessary protections such as overcurrent, overvoltage, over speed, overheat for all devices including lift motor and travel direction protection, protection for phase loss at input or output etc. various operation modes such as maintenance, change direction by attendant, full load bypass, VIP call operation, self levelling operation, call cancel facility, auto return to home landing, fireman evacuation operation, earthquake operation, door open/close operation from COP etc. The system can record information for minimum 30 latest faults, with real-time clock management and handheld keypad with LCD screen for view and setting of parameters. The control panel duly wired with proper size & strength, copper wire for power & control circuit, with provision for addition of floor/control card & allied accessories control panel having enclosure of 1.5mm CRCA sheet with powder coating with IP54 Protection class. · ARD complete with necessary SMF VRLA batteries. · Fireman controller having fireman switch at fire Landing. · CCTV surveillance system comprises of 2 nos minimum 2.0 MP FHD IP based vandal proof Dome camera in lift car & in LMR/inside lift shaft top aimed on Lift machinery & controller with NVR kept in LMR/FCC with HDR data backup for min. 90 days with min. 18" FHD TV monitor, to be kept in FCC/LMR as directed by Engineer In Charge. · Lift Machine of Gearless PMSM of suitable kW with duty cycle of minimum 120 starts/hr (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory), with Traction pulley, OSG, electromagnetic brakes, entire assembly mounted on adequate size girders duly fixed on LMR floor/ shaft walls complete with main/diverter traction sheaves, suspension wire ropes/belts of adequate size & strength. · Other mechanical parts such as "T" section adequate size guide rails for car & counter weight with brackets fasteners, counter weight frame with necessary blocks, buffers with necessary support arrangement, MS pit ladder etc. erected with necessary steel work. · Minor civil work such as alteration work if any necessary for erection of landing door frames and it's accessories e.g. sill, header, hole pass etc complete with plaster finish, civil work for erection buffers, erection of lift machinery, adequate size core cuts if required & scaffolding for erecting guide rails, providing and fixing steel girders/RCC work having adequate strength for mounting and hoisting lift machine etc. complete as per specification no. LFT. · General: - Job includes entire procedure of obtaining all necessary erection permissions & "License to Work the Lift" from Electrical Inspector(Lifts) with submission to the Engineer In Charge. · The above rate includes Fully Comprehensive AMC for one year from the date of commissioning. 		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Car/Landing door clear opening of 800 mm wide x 2000 mm high · Clear Car size ofmm wide xmm deep x 2250mm high · Lift shaft available having clear size ofmm wide xmm deep,mm Pit depth,mm Overhead. · Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid(non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames The lift doors shall have minimum 1 hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory). · Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation & SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge. · COP with SS face plate having metallic push buttons with Braille code & luminous indicator around button with FPI, scrolling UP/DN LED indicator & with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi & English with intercom system with telephone instrument in Lift car, LMR & FCC/ground floor. · LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code & luminous indicator around button with CPI, Lift car arrival & next travel direction audio-visual indication at all landings. · Lift controller based on microprocessor/ PLC with VVVF Drive having closed loop control system, with IBMS compatible having necessary port. The controller shall have necessary protections such as overcurrent, overvoltage, over speed, overheat for all devices including lift motor and travel direction protection, protection for phase loss at input or output etc. various operation modes such as maintenance, change direction by attendant, full load bypass, VIP call operation, self levelling operation, call cancel facility, auto return to home landing, fireman evacuation operation, earthquake operation, door open/close operation from COP etc. The system can record information for minimum 30 latest faults, with real-time clock management and handheld keypad with LCD screen for view and setting of parameters. The control panel duly wired with proper size & strength, copper wire for power & control circuit, with provision for addition of floor/control card & allied accessories control panel having enclosure of 1.5mm CRCA sheet with powder coating with IP54 Protection class. · ARD complete with necessary SMF VRLA batteries. · Fireman controller having fireman switch at fire Landing. · CCTV surveillance system comprises of 2 nos minimum 2.0 MP FHD IP based vandal proof Dome camera in lift car & in LMR/inside lift shaft top aimed on Lift machinery & controller with NVR kept in LMR/FCC with HDR data backup min. 90 days with min. 18" FHD TV monitor, to be kept in FCC/LMR as directed by Engineer In Charge. · Lift Machine of Gearless PMSM of suitable kW with duty cycle of minimum 120 starts/hr (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory), with Traction pulley, OSG, electromagnetic brakes, entire assembly mounted on adequate size girders duly fixed on LMR floor/ shaft walls complete with main/diverter traction sheaves, suspension wire ropes/belts of adequate size & strength. 		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Other mechanical parts such as "T" section adequate size guide rails for car & counter weight with brackets fasteners, counter weight frame with necessary blocks, buffers with necessary support arrangement, MS pit ladder etc. erected with necessary steel work. · Minor civil work such as alteration work if any necessary for erection of landing door frames and it's accessories e.g. sill, header, hole pass etc complete with plaster finish, civil work for erection buffers, erection of lift machinery, adequate size core cuts if required & scaffolding for erecting guide rails, providing and fixing steel girders/RCC work having adequate strength for mounting and hoisting lift machine etc. complete as per specification no. LFT. · General: - Job includes entire procedure of obtaining all necessary erection permissions & "License to Work the Lift" from Electrical Inspector(Lifts) with submission to the Engineer In Charge. · The above rate includes Fully Comprehensive AMC for one year from the date of commissioning. 		
17-1-4	<p>SITC of Electric Traction Passenger Lift with</p> <ul style="list-style-type: none"> · Rated capacity :- 10 Passenger/680Kg · Floors :- G+1 floor (2 Stops/2 Landings) · Travel :- 3 to 4.2 mtrs · Location of Lift Machine:- MR/MRL · Rated speed :- 1.0mps VS · Car/Landing door clear opening of 800 mm wide x 2000 mm high · Clear Car size ofmm wide xmm deep x 2250mm high · Lift shaft available having clear size ofmm wide xmm deep,mm Pit depth,mm Overhead. · Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid(non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames The lift doors shall have minimum 1 hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory). · Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation & SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge. · COP with SS face plate having metallic push buttons with Braille code & luminous indicator around button with FPI, scrolling UP/DN LED indicator & with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi & English with intercom system with telephone instrument in Lift car, LMR & FCC/ground floor. · LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code & luminous indicator around button with CPI, Lift car arrival & next travel direction audio-visual indication at all landings. 	Job	1299498

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Lift controller based on microprocessor/ PLC with VVVF Drive having closed loop control system, with IBMS compatible having necessary port. The controller shall have necessary protections such as overcurrent, overvoltage, over speed, overheat for all devices including lift motor and travel direction protection, protection for phase loss at input or output etc. various operation modes such as maintenance, change direction by attendant, full load bypass, VIP call operation, self levelling operation, call cancel facility, auto return to home landing, fireman evacuation operation, earthquake operation, door open/close operation from COP etc. The system can record information for minimum 30 latest faults, with real-time clock management and handheld keypad with LCD screen for view and setting of parameters. The control panel duly wired with proper size & strength, copper wire for power & control circuit, with provision for addition of floor/control card & allied accessories control panel having enclosure of 1.5mm CRCA sheet with powder coating with IP54 Protection class. · ARD complete with necessary SMF VRLA batteries. · Fireman controller having fireman switch at fire Landing. · CCTV surveillance system comprises of 2 nos minimum 2.0MP FHD IP based vandal proof Dome camera in lift car & in LMR/inside lift shaft top aimed on Lift machinery & controller with NVR kept in LMR/FCC with HDR data backup for min. 90 days with min.18" FHD TV monitor, to be kept in FCC/LMR as directed by Engineer In Charge. · Lift Machine of Gearless PMSM of suitable kW with duty cycle of minimum 120 starts/hr (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory), with Traction pulley, OSG, electromagnetic brakes, entire assembly mounted on adequate size girders duly fixed on LMR floor/ shaft walls complete with main/diverter traction sheaves, suspension wire ropes/belts of adequate size & strength. · Other mechanical parts such as "T" section adequate size guide rails for car & counter weight with brackets fasteners, counter weight frame with necessary blocks, buffers with necessary support arrangement, MS pit ladder etc. erected with necessary steel work. · Minor civil work such as alteration work if any necessary for erection of landing door frames and it's accessories e.g. sill, header, hole pass etc complete with plaster finish, civil work for erection buffers, erection of lift machinery, adequate size core cuts if required & scaffolding for erecting guide rails, providing and fixing steel girders/RCC work having adequate strength for mounting and hoisting lift machine etc. complete as per specification no. LFT. · General: - Job includes entire procedure of obtaining all necessary erection permissions & "License to Work the Lift" from Electrical Inspector(Lifts) with submission to the Engineer In Charge. · The above rate includes Fully Comprehensive AMC for one year from the date of commissioning. 		
17-1-5	<p>SITC of Electric Traction Passenger Lift with</p> <ul style="list-style-type: none"> · Rated capacity :- 13 Passenger/884Kg · Floors :- G+1 floor (2 Stops/2 Landings) · Travel :- 3 to 4.2 mtrs. · Location of Lift Machine:- MR/MRL · Rated speed :- 1.0mps VS · Car/Landing door clear opening of 900/1000 mm wide x 2000 mm high · Clear Car size ofmm wide xmm deep x 2250mm high · Lift shaft available having clear size ofmm wide xmm deep,mm Pit depth,mm Overhead. 	Job	1386712

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid(non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames The lift doors shall have minimum 1 hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory). · Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation & SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge. · COP with SS face plate having metallic push buttons with Braille code & luminous indicator around button with FPI, scrolling UP/DN LED indicator & with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi & English with intercom system with telephone instrument in Lift car, LMR & FCC/ground floor. · LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code & luminous indicator around button with CPI, Lift car arrival & next travel direction audio-visual indication at all landings. · Lift controller based on microprocessor/ PLC with VVVF Drive having closed loop control system, with IBMS compatible having necessary port. The controller shall have necessary protections such as overcurrent, overvoltage, over speed, overheat for all devices including lift motor and travel direction protection, protection for phase loss at input or output etc. various operation modes such as maintenance, change direction by attendant, full load bypass, VIP call operation, self levelling operation, call cancel facility, auto return to home landing, fireman evacuation operation, earthquake operation, door open/close operation from COP etc. The system can record information for minimum 30 latest faults, with real-time clock management and handheld keypad with LCD screen for view and setting of parameters, The control panel duly wired with proper size & strength, copper wire for power & control circuit, with provision for addition of floor/control card & allied accessories control panel having enclosure of 1.5mm CRCA sheet with powder coating with IP54 Protection class. · ARD complete with necessary SMF VRLA batteries. · Fireman controller having fireman switch at fire Landing. · CCTV surveillance system comprises of 2 nos minimum 2.0MP FHD IP based vandal proof Dome camera in lift car & in LMR/inside lift shaft top aimed on Lift machinery & controller with NVR kept in LMR/FCC with HDR data backup for min. 90 days with min. 18” FHD TV monitor, to be kept in FCC/LMR as directed by Engineer In Charge. · Lift Machine of Gearless PMSM of suitable kW with duty cycle of minimum 120 starts/hr (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory), with Traction pulley, OSG, electromagnetic brakes, entire assembly mounted on adequate size girders duly fixed on LMR floor/ shaft walls complete with main/diverter traction sheaves, suspension wire ropes/belts of adequate size & strength. · Other mechanical parts such as "T" section adequate size guide rails for car & counter weight with brackets fasteners, counter weight frame with necessary blocks, buffers with necessary support arrangement, MS pit ladder etc. erected with necessary steel work. 		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
17-1-6	<p>· Minor civil work such as alteration work if any necessary for erection of landing door frames and it's accessories e.g. sill, header, hole pass etc complete with plaster finish, civil work for erection buffers, erection of lift machinery, adequate size core cuts if required & scaffolding for erecting guide rails, providing and fixing steel girders/RCC work having adequate strength for mounting and hoisting lift machine etc. complete as per specification no. LFT.</p> <p>· General: - Job includes entire procedure of obtaining all necessary erection permissions & "License to Work the Lift" from Electrical Inspector(Lifts) with submission to the Engineer In Charge.</p> <p>· The above rate includes Fully Comprehensive AMC for one year from the date of commissioning.</p> <p>SITC of Electric Traction Passenger Lift with</p> <ul style="list-style-type: none"> · Rated capacity :- 14 Passenger/952Kg · Floors :- G+1 floor (2 Stops/2 Landings) · Travel :- 3 to 4.2 mtrs · Location of Lift Machine:- MR · Rated speed :- 1.0mps VS · Car/Landing door clear opening of 900 mm wide x 2000mm high · Clear Car size ofmm wide xmm deep x 2250mm high · Lift shaft available having clear size ofmm wide xmm deep,mm Pit depth,mm Overhead. · Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid(non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames The lift doors shall have minimum 1 hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory). · Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation & SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge. · COP with SS face plate having metallic push buttons with Braille code & luminous indicator around button with FPI, scrolling UP/DN LED indicator & with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi & English with intercom system with telephone instrument in Lift car, LMR & FCC/ground floor. · LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code & luminous indicator around button with CPI, Lift car arrival & next travel direction audio-visual indication at all landings. 	Job	1531615

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Lift controller based on microprocessor/ PLC with VVVF Drive having closed loop control system, with IBMS compatible having necessary port. The controller shall have necessary protections such as overcurrent, overvoltage, over speed, overheat for all devices including lift motor and travel direction protection, protection for phase loss at input or output etc. various operation modes such as maintenance, change direction by attendant, full load bypass, VIP call operation, self levelling operation, call cancel facility, auto return to home landing, fireman evacuation operation, earthquake operation, door open/close operation from COP etc. The system can record information for minimum 30 latest faults, with real-time clock management and handheld keypad with LCD screen for view and setting of parameters, The control panel duly wired with proper size & strength, copper wire for power & control circuit, with provision for addition of floor/control card & allied accessories control panel having enclosure of 1.5mm CRCA sheet with powder coating with IP54 Protection class. · ARD complete with necessary SMF VRLA batteries. · Fireman controller having fireman switch at fire Landing. · CCTV surveillance system comprises of 2nos minimum 2.0MP FHD IP based vandal proof Dome camera in lift car & in LMR/inside lift shaft top aimed on Lift machinery & controller with NVR kept in LMR/FCC with HDR data backup for min. 90 days with min. 18" FHD TV monitor, to be kept in FCC/LMR as directed by Engineer In Charge. · Lift Machine of Gearless PMSM of suitable kW with duty cycle of minimum 120 starts/hr (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory), with Traction pulley, OSG, electromagnetic brakes, entire assembly mounted on adequate size girders duly fixed on LMR floor/ shaft walls complete with main/diverter traction sheaves, suspension wire ropes/belts of adequate size & strength. · Other mechanical parts such as "T" section adequate size guide rails for car & counter weight with brackets fasteners, counter weight frame with necessary blocks, buffers with necessary support arrangement, MS pit ladder etc. erected with necessary steel work. · Minor civil work such as alteration work if any necessary for erection of landing door frames and it's accessories e.g. sill, header, hole pass etc complete with plaster finish, civil work for erection buffers, erection of lift machinery, adequate size core cuts if required & scaffolding for erecting guide rails, providing and fixing steel girders/RCC work having adequate strength for mounting and hoisting lift machine etc. complete as per specification no. LFT. · General: - Job includes entire procedure of obtaining all necessary erection permissions & "License to Work the Lift" from Electrical Inspector(Lifts) with submission to the Engineer In Charge. · The above rate includes Fully Comprehensive AMC for one year from the date of commissioning. 		
17-1-7	SITC of Electric Traction Passenger cum Stretcher/Hospital Lift with	Job	1625804
	<ul style="list-style-type: none"> · Rated capacity :- 15 Passenger/1020Kg · Floors :- G+1 floor (2 Stops/2 Landings) · Travel :- 3 to 4.2 mtrs · Location of Lift Machine:- MR/MRL [applicable for Passenger Lift with MRL only & Stretcher/Hospital Lift with MR & MRL] · Rated speed :- 1.0mps VS · Car/Landing door clear opening of 800/900/1000 mm wide x 2000mm high · Clear Car size ofmm wide xmm deep x 2250mm high 		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Lift shaft available having clear size ofmm wide xmm deep,mm Pit depth,mm Overhead. · Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid(non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames The lift doors shall have minimum 1 hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory). · Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation & SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge. · COP with SS face plate having metallic push buttons with Braille code & luminous indicator around button with FPI, scrolling UP/DN LED indicator & with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi & English with intercom system with telephone instrument in Lift car, LMR & FCC/ground floor. · LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code & luminous indicator around button with CPI, Lift car arrival & next travel direction audio-visual indication at all landings. · Lift controller based on microprocessor/ PLC with VVVF Drive having closed loop control system, with IBMS compatible having necessary port. The controller shall have necessary protections such as overcurrent, overvoltage, over speed, overheat for all devices including lift motor and travel direction protection, protection for phase loss at input or output etc. various operation modes such as maintenance, change direction by attendant, full load bypass, VIP call operation, self levelling operation, call cancel facility, auto return to home landing, fireman evacuation operation, earthquake operation, door open/close operation from COP etc. The system can record information for minimum 30 latest faults, with real-time clock management and handheld keypad with LCD screen for view and setting of parameters. The control panel duly wired with proper size & strength, copper wire for power & control circuit, with provision for addition of floor/control card & allied accessories control panel having enclosure of 1.5mm CRCA sheet with powder coating with IP54 Protection class. · ARD complete with necessary SMF VRLA batteries. · Fireman controller having fireman switch at fire Landing. · CCTV surveillance system comprises of 2 nos minimum 2.0MP FHD IP based vandal proof Dome camera in lift car & in LMR/inside lift shaft top aimed on Lift machinery & controller with NVR kept in LMR/FCC with HDR data backup for min. 90 days min. with 18” FHD TV monitor, to be kept in FCC/LMR as directed by Engineer In Charge. · Lift Machine of Gearless PMSM of suitable kW with duty cycle of minimum 120 starts/hr (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory), with Traction pulley, OSG, electromagnetic brakes, entire assembly mounted on adequate size girders duly fixed on LMR floor/ shaft walls complete with main/diverter traction sheaves, suspension wire ropes/belts of adequate size & strength. · Other mechanical parts such as "T" section adequate size guide rails for car & counter weight with brackets fasteners, counter weight frame with necessary blocks, buffers with necessary support arrangement, MS pit ladder etc. erected with necessary steel work. 		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Minor civil work such as alteration work if any necessary for erection of landing door frames and it's accessories e.g. sill, header, hole pass etc complete with plaster finish, civil work for erection buffers, erection of lift machinery, adequate size core cuts if required & scaffolding for erecting guide rails, providing and fixing steel girders/RCC work having adequate strength for mounting and hoisting lift machine etc. complete as per specification no. LFT. · General: - Job includes entire procedure of obtaining all necessary erection permissions & "License to Work the Lift" from Electrical Inspector(Lifts) with submission to the Engineer In Charge. · The above rate includes Fully Comprehensive AMC for one year from the date of commissioning. 		
17-1-8	<p>SITC of Electric Traction Passenger Lift with</p> <ul style="list-style-type: none"> · Rated capacity :- 16 Passenger/1088Kg · Floors :- G+1 floor (2 Stops/2 Landings) · Travel :- 3 to 4.2 mtrs · Location of Lift Machine:- MR/MRL · Rated speed :- 1.0mps VS · Car/Landing door clear opening of 1000mm wide x 2000 mm high · Clear Car size ofmm wide xmm deep x 2250mm high · Lift shaft available having clear size ofmm wide xmm deep,mm Pit depth,mm Overhead. · Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid(non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames The lift doors shall have minimum 1 hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory). · Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation & SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge. · COP with SS face plate having metallic push buttons with Braille code & luminous indicator around button with FPI, scrolling UP/DN LED indicator & with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi & English with intercom system with telephone instrument in Lift car, LMR & FCC/ground floor. · LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code & luminous indicator around button with CPI, Lift car arrival & next travel direction audio-visual indication at all landings. 	Job	1669432

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Lift controller based on microprocessor/ PLC with VVVF Drive having closed loop control system, with IBMS compatible having necessary port. The controller shall have necessary protections such as overcurrent, overvoltage, over speed, overheat for all devices including lift motor and travel direction protection, protection for phase loss at input or output etc. various operation modes such as maintenance, change direction by attendant, full load bypass, VIP call operation, self levelling operation, call cancel facility, auto return to home landing, fireman evacuation operation, earthquake operation, door open/close operation from COP etc. The system can record information for minimum 30 latest faults, with real-time clock management and handheld keypad with LCD screen for view and setting of parameters. The control panel duly wired with proper size & strength, copper wire for power & control circuit, with provision for addition of floor/control card & allied accessories control panel having enclosure of 1.5mm CRCA sheet with powder coating with IP54 Protection class. · ARD complete with necessary SMF VRLA batteries. · Fireman controller having fireman switch at fire Landing. · CCTV surveillance system comprises of 2 nos minimum 2.0MP FHD IP based vandal proof Dome camera in lift car & in LMR/inside lift shaft top aimed on Lift machinery & controller with NVR kept in LMR/FCC with HDR data backup for min. 90 days with min. 20" FHD TV monitor, to be kept in FCC/LMR as directed by Engineer In Charge. · Lift Machine of Gearless PMSM of suitable kW with duty cycle of minimum 120 starts/hr (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory), with Traction pulley, OSG, electromagnetic brakes, entire assembly mounted on adequate size girders duly fixed on LMR floor/ shaft walls complete with main/diverter traction sheaves, suspension wire ropes/belts of adequate size & strength. · Other mechanical parts such as "T" section adequate size guide rails for car & counter weight with brackets fasteners, counter weight frame with necessary blocks, buffers with necessary support arrangement, MS pit ladder etc. erected with necessary steel work. · Minor civil work such as alteration work if any necessary for erection of landing door frames and it's accessories e.g. sill, header, hole pass etc complete with plaster finish, civil work for erection buffers, erection of lift machinery, adequate size core cuts if required & scaffolding for erecting guide rails, providing and fixing steel girders/RCC work having adequate strength for mounting and hoisting lift machine etc. complete as per specification no. LFT. · General: - Job includes entire procedure of obtaining all necessary erection permissions & "License to Work the Lift" from Electrical Inspector(Lifts) with submission to the Engineer In Charge. · The above rate includes Fully Comprehensive AMC for one year from the date of commissioning. 		
17-1-9	<p>SITC of Electric Traction Passenger Lift with</p> <ul style="list-style-type: none"> · Rated capacity :- 18 Passenger/1224Kg · Floors :- G+1 floor (2 Stops/2 Landings) · Travel :- 3 to 4.2 mtrs · Location of Lift Machine:- MR · Speed :- 1.0mps VS · Car/Landing door clear opening of 1100 mm wide x 2000 mm high · Clear Car size ofmm wide xmm deep x 2250mm high · Lift shaft available having clear size ofmm wide xmm deep,mm Pit depth,mm Overhead. 	Job	1759900

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid(non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames The lift doors shall have minimum 1 hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory). · Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation & SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge. · COP with SS face plate having metallic push buttons with Braille code & luminous indicator around button with FPI, scrolling UP/DN LED indicator & with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi & English with intercom system with telephone instrument in Lift car, LMR & FCC/ground floor. · LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code & luminous indicator around button with CPI, Lift car arrival & next travel direction audio-visual indication at all landings. · Lift controller based on microprocessor/ PLC with VVVF Drive having closed loop control system, with IBMS compatible having necessary port. The controller shall have necessary protections such as overcurrent, overvoltage, over speed, overheat for all devices including lift motor and travel direction protection, protection for phase loss at input or output etc. various operation modes such as maintenance, change direction by attendant, full load bypass, VIP call operation, self levelling operation, call cancel facility, auto return to home landing, fireman evacuation operation, earthquake operation, door open/close operation from COP etc. The system can record information for minimum 30 latest faults, with real-time clock management and handheld keypad with LCD screen for view and setting of parameters. The control panel duly wired with proper size & strength, copper wire for power & control circuit, with provision for addition of floor/control card & allied accessories control panel having enclosure of 1.5mm CRCA sheet with powder coating with IP54 Protection class. · ARD complete with necessary SMF VRLA batteries. · Fireman controller having fireman switch at fire Landing. · CCTV surveillance system comprises of 2 nos minimum 2.0MP FHD IP based vandal proof Dome camera in lift car & in LMR/inside lift shaft top aimed on Lift machinery & controller with NVR kept in LMR/FCC with HDR data backup for min. 90 days with min. 20" FHD TV monitor, to be kept in FCC/LMR as directed by Engineer In Charge. · Lift Machine of Gearless PMSM of suitable kW with duty cycle of minimum 120 starts/hr (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory), with Traction pulley, OSG, electromagnetic brakes, entire assembly mounted on adequate size girders duly fixed on LMR floor/ shaft walls complete with main/diverter traction sheaves, suspension wire ropes/belts of adequate size & strength. · Other mechanical parts such as "T" section adequate size guide rails for car & counter weight with brackets fasteners, counter weight frame with necessary blocks, buffers with necessary support arrangement, MS pit ladder etc. erected with necessary steel work. 		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Minor civil work such as alteration work if any necessary for erection of landing door frames and it's accessories e.g. sill, header, hole pass etc complete with plaster finish, civil work for erection buffers, erection of lift machinery, adequate size core cuts if required & scaffolding for erecting guide rails, providing and fixing steel girders/RCC work having adequate strength for mounting and hoisting lift machine etc. complete as per specification no. LFT. · General: - Job includes entire procedure of obtaining all necessary erection permissions & "License to Work the Lift" from Electrical Inspector(Lifts) with submission to the Engineer In Charge. · The above rate includes Fully Comprehensive AMC for one year from the date of commissioning. 		
17-1-10	SITC of Electric Traction Passenger cum Stretcher/Hospital Lift with	Job	1934721
	<ul style="list-style-type: none"> · Rated capacity :- 20 Passenger/1360Kg · Floors :- G+1 floor (2 Stops/2 Landings) · Travel :- 3 to 4.2 mtrs · Location of Lift Machine:- MR/MRL · Rated speed :- 1.0mps VS · Car/Landing door clear opening of 1100/1200 mm wide x 2000 mm high · Clear Car size ofmm wide xmm deep x 2250mm high · Lift shaft available having clear size ofmm wide xmm deep,mm Pit depth,mm Overhead. · Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid(non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames The lift doors shall have minimum 1 hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory) · Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation & SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge. · COP with SS face plate having metallic push buttons with Braille code & luminous indicator around button with FPI, scrolling UP/DN LED indicator & with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi & English with intercom system with telephone instrument in Lift car, LMR & FCC/ground floor. · LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code & luminous indicator around button with CPI, Lift car arrival & next travel direction audio-visual indication at all landings. 		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Lift controller based on microprocessor/ PLC with VVVF Drive having closed loop control system, with IBMS compatible having necessary port. The controller shall have necessary protections such as overcurrent, overvoltage, over speed, overheat for all devices including lift motor and travel direction protection, protection for phase loss at input or output etc. various operation modes such as maintenance, change direction by attendant, full load bypass, VIP call operation, self levelling operation, call cancel facility, auto return to home landing, fireman evacuation operation, earthquake operation, door open/close operation from COP etc. The system can record information for minimum 30 latest faults, with real-time clock management and handheld keypad with LCD screen for view and setting of parameters, The control panel duly wired with proper size & strength, copper wire for power & control circuit, with provision for addition of floor/control card & allied accessories control panel having enclosure of 1.5mm CRCA sheet with powder coating with IP54 Protection class. · ARD complete with necessary SMF VRLA batteries. · Fireman controller having fireman switch at fire Landing. · CCTV surveillance system comprises of 2nos minimum 2.0MP FHD IP based vandal proof Dome camera in lift car & in LMR/inside lift shaft top aimed on Lift machinery & controller with NVR kept in LMR/FCC with HDR data backup for min. 90 days with min. 20" FHD TV monitor, to be kept in FCC/LMR as directed by Engineer In Charge. · Lift Machine of Gearless PMSM of suitable kW with duty cycle of minimum 120 starts/hr (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory), with Traction pulley, OSG, electromagnetic brakes, entire assembly mounted on adequate size girders duly fixed on LMR floor/ shaft walls complete with main/diverter traction sheaves, suspension wire ropes/belts of adequate size & strength. · Other mechanical parts such as "T" section adequate size guide rails for car & counter weight with brackets fasteners, counter weight frame with necessary blocks, buffers with necessary support arrangement, MS pit ladder etc. erected with necessary steel work. · Minor civil work such as alteration work if any necessary for erection of landing door frames and it's accessories e.g. sill, header, hole pass etc complete with plaster finish, civil work for erection buffers, erection of lift machinery, adequate size core cuts if required & scaffolding for erecting guide rails, providing and fixing steel girders/RCC work having adequate strength for mounting and hoisting lift machine etc. complete as per specification no. LFT. · General: - Job includes entire procedure of obtaining all necessary erection permissions & "License to Work the Lift" from Electrical Inspector(Lifts) with submission to the Engineer In Charge. · The above rate includes Fully Comprehensive AMC for one year from the date of commissioning. 		
	<p>Note : Item nos 17-1-1 to 17-1-10 shall invariably used for Lifts traveling up to six floors only.</p>		
17-1-11 (New)	<p>SITC of Electric Traction Passenger Lift with</p> <ul style="list-style-type: none"> · Rated capacity :- 4 Passenger/272Kg · Floors :- G+7 floor (8 Stops/8 Landings) · Travel :- 21 to 29.4 mtrs · Location of Lift Machine:- MR/MRL · Rated speed :- 1.5mps VS · Car/Landing door clear opening of 700/800 mm wide x 2000 mm high 	Job	1975807

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Clear Car size ofmm wide xmm deep x 2250mm high · Lift shaft available having clear size ofmm wide xmm deep,mm Pit depth,mm Overhead. · Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid(non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames The lift doors shall have minimum 1 hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory). · Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation & SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge. · COP with SS face plate having metallic push buttons with Braille code & luminous indicator around button with FPI, scrolling UP/DN LED indicator & with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi & English with intercom system with telephone instrument in Lift car, LMR & FCC/ground floor. · LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code & luminous indicator around button with CPI, Lift car arrival & next travel direction audio-visual indication at all landings. · Lift controller of simplex full collective based on microprocessor/ PLC with VVVF Drive having closed loop control system, with IBMS compatible having necessary port. The controller shall have necessary protections such as overcurrent, overvoltage, over speed, overheat for all devices including lift motor and travel direction protection, protection for phase loss at input or output etc. ,various operation modes such as maintenance, change direction by attendant, full load bypass, VIP call operation, self levelling operation, call cancel facility, auto return to home landing, fireman evacuation operation, earthquake operation, door open/close operation from COP etc. The system can record information for minimum 30 latest faults, with real-time clock management and handheld keypad with LCD screen for view and setting of parameters, The control panel duly wired with proper size & strength, copper wire for power & control circuit, with provision for addition of floor/control card & allied accessories control panel having enclosure of 1.5mm CRCA sheet with powder coating with IP54 Protection class. · ARD complete with necessary SMF VRLA batteries. · Fireman controller having fireman switch at fire Landing. · CCTV surveillance system comprises of 2 nos minimum 2.0MP FHD IP based vandal proof Dome camera in lift car & in LMR/inside lift shaft top aimed on Lift machinery & controller with NVR kept in LMR/FCC with HDR data backup for min. 90 days with min. 20" FHD TV monitor, to be kept in FCC/LMR as directed by Engineer In Charge. · Lift Machine of Gearless PMSM of suitable kW with duty cycle of minimum 120 starts/hr (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory), with Traction pulley, OSG, electromagnetic brakes, entire assembly mounted on adequate size girders duly fixed on LMR floor/ shaft walls complete with main/diverter traction sheaves, suspension wire ropes/belts of adequate size & strength. 		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Other mechanical parts such as "T" section adequate size guide rails for car & counter weight with brackets fasteners, counter weight frame with necessary blocks, buffers with necessary support arrangement, MS pit ladder etc. erected with necessary steel work. · Minor civil work such as alteration work if any necessary for erection of landing door frames and it's accessories e.g. sill, header, hole pass etc complete with plaster finish, civil work for erection buffers, erection of lift machinery, adequate size core cuts if required & scaffolding for erecting guide rails, providing and fixing of girders of adequate strength for mounting and hoisting lift machine etc. complete as per specification no. LFT. · General: - Job includes entire procedure of obtaining all necessary erection permissions & "License to Work the Lift" from Electrical Inspector(Lifts) with submission to the Engineer In Charge. · The above rate includes Fully Comprehensive AMC for one year from the date of commissioning. 		
17-1-12 (New)	<p>SITC of Electric Traction Passenger Lift with</p> <ul style="list-style-type: none"> · Rated capacity :- 6 Passenger/408Kg · Floors :- G+7 floor (8 Stops/8 Landings) · Travel :- 21 to 29.4 mtrs · Location of Lift Machine:- MR/MRL · Rated speed :- 1.5mps VS · Car/Landing door clear opening of 800 mm wide x 2000mm high · Clear Car size ofmm wide xmm deep x 2250mm high · Lift shaft available having clear size ofmm wide xmm deep,mm Pit depth,mm Overhead. · Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid(non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames The lift doors shall have minimum 1 hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory). · Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation & SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge. · COP with SS face plate having metallic push buttons with Braille code & luminous indicator around button with FPI, scrolling UP/DN LED indicator & with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi & English with intercom system with telephone instrument in Lift car, LMR & FCC/ground floor. · LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code & luminous indicator around button with CPI, Lift car arrival & next travel direction audio-visual indication at all landings. 	Job	2027824

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Lift controller of simplex full collective based on microprocessor/ PLC with VVVF Drive having closed loop control system, with IBMS compatible having necessary port. The controller shall have necessary protections such as overcurrent, overvoltage, over speed, overheat for all devices including lift motor and travel direction protection, protection for phase loss at input or output etc. ,various operation modes such as maintenance, change direction by attendant, full load bypass, VIP call operation, self levelling operation, call cancel facility, auto return to home landing, fireman evacuation operation, earthquake operation, door open/close operation from COP etc. The system can record information for minimum 30 latest faults, with real-time clock management and handheld keypad with LCD screen for view and setting of parameters, The control panel duly wired with proper size & strength, copper wire for power & control circuit, with provision for addition of floor/control card & allied accessories control panel having enclosure of 1.5mm CRCA sheet with powder coating with IP54 Protection class. · ARD complete with necessary SMF VRLA batteries. · Fireman controller having fireman switch at fire Landing. · CCTV surveillance system comprises of 2 nos minimum 2.0MP FHD IP based vandal proof Dome camera in lift car & in LMR/inside lift shaft top aimed on Lift machinery & controller with NVR kept in LMR/FCC with HDR data backup for min. 90 days with min. 20" FHD TV monitor, to be kept in FCC/LMR as directed by Engineer In Charge. · Lift Machine of Gearless PMSM of suitable kW with duty cycle of minimum 120 starts/hr (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory), with Traction pulley, OSG, electromagnetic brakes, entire assembly mounted on adequate size girders duly fixed on LMR floor/ shaft walls complete with main/diverter traction sheaves, suspension wire ropes/belts of adequate size & strength. · Other mechanical parts such as "T" section adequate size guide rails for car & counter weight with brackets fasteners, counter weight frame with necessary blocks, buffers with necessary support arrangement, MS pit ladder etc. erected with necessary steel work. · Minor civil work such as alteration work if any necessary for erection of landing door frames and it's accessories e.g. sill, header, hole pass etc complete with plaster finish, civil work for erection buffers, erection of lift machinery, adequate size core cuts if required & scaffolding for erecting guide rails, providing and fixing steel girders/RCC work having adequate strength for mounting and hoisting lift machine etc. complete as per specification no. LFT. · General: - Job includes entire procedure of obtaining all necessary erection permissions & "License to Work the Lift" from Electrical Inspector(Lifts) with submission to the Engineer In Charge. · The above rate includes Fully Comprehensive AMC for one year from the date of commissioning. 		
17-1-13 (New)	<p>SITC of Electric Traction Passenger Lift with</p> <ul style="list-style-type: none"> · Rated capacity :- 8 Passenger/544Kg · Floors :- G+7 floor (8 Stops/8 Landings) · Travel :- 21 to 29.4 mtrs · Location of Lift Machine:- MR/MRL · Rated speed :- 1.5mps VS · Car/Landing door clear opening of 800 mm wide x 2000 mm high · Clear Car size ofmm wide xmm deep x 2250mm high · Lift shaft available having clear size ofmm wide xmm deep,mm Pit depth,mm Overhead. 	Job	2114849

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid(non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames The lift doors shall have minimum 1 hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory). · Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation & SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge. · COP with SS face plate having metallic push buttons with Braille code & luminous indicator around button with FPI, scrolling UP/DN LED indicator & with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi & English with intercom system with telephone instrument in Lift car, LMR & FCC/ground floor. · LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code & luminous indicator around button with CPI, Lift car arrival & next travel direction audio-visual indication at all landings. · Lift controller of simplex full collective based on microprocessor/ PLC with VVVF Drive having closed loop control system, with IBMS compatible having necessary port. The controller shall have necessary Protections such as overcurrent, overvoltage, over speed, overheat for all devices including lift motor and travel direction protection, protection for phase loss at input or output etc. ,various operation modes such as maintenance, change direction by attendant, full load bypass, VIP call operation, self levelling operation, call cancel facility, auto return to home landing, fireman evacuation operation, earthquake operation, door open/close operation from COP etc. The system can record information for minimum 30 latest faults, with real-time clock management and handheld keypad with LCD screen for view and setting of parameters, The control panel duly wired with proper size & strength, copper wire for power & control circuit, with provision for addition of floor/control card & allied accessories control panel having enclosure of 1.5mm CRCA sheet with powder coating with IP54 Protection class. · ARD complete with necessary SMF VRLA batteries. · Fireman controller having fireman switch at fire Landing. · CCTV surveillance system comprises of 2nos minimum 2.0MP FHD IP based vandal proof Dome camera in lift car & in LMR/inside lift shaft top aimed on Lift machinery & controller with NVR kept in LMR/FCC with HDR data backup for min. 90 days with min. 20" FHD TV monitor, to be kept in FCC/LMR as directed by Engineer In Charge. · Lift Machine of Gearless PMSM of suitable kW with duty cycle of minimum 120 starts/hr (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory), with Traction pulley, OSG, electromagnetic brakes, entire assembly mounted on adequate size girders duly fixed on LMR floor/ shaft walls complete with main/diverter traction sheaves, suspension wire ropes/belts of adequate size & strength. · Other mechanical parts such as "T" section adequate size guide rails for car & counter weight with brackets fasteners, counter weight frame with necessary blocks, buffers with necessary support arrangement, MS pit ladder etc. erected with necessary steel work. 		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Minor civil work such as alteration work if any necessary for erection of landing door frames and it's accessories e.g. sill, header, hole pass etc complete with plaster finish, civil work for erection buffers, erection of lift machinery, adequate size core cuts if required & scaffolding for erecting guide rails, providing and fixing steel girders/RCC work having adequate strength for mounting and hoisting lift machine etc. complete as per specification no. LFT. · General: - Job includes entire procedure of obtaining all necessary erection permissions & "License to Work the Lift" from Electrical Inspector(Lifts) with submission to the Engineer In Charge. · The above rate includes Fully Comprehensive AMC for one year from the date of commissioning. 		
17-1-14 (New)	<p>SITC of Electric Traction Passenger Lift with</p> <ul style="list-style-type: none"> · Rated capacity :- 10 Passenger/680Kg · Floors :- G+7 floor (8 Stops/8 Landings) · Travel :- 21 to 29.4 mtrs · Location of Lift Machine:- MR/MRL · Rated speed :- 1.5mps VS · Car/Landing door clear opening of 800 mm wide x 2000 mm high · Clear Car size ofmm wide xmm deep x 2250mm high · Lift shaft available having clear size ofmm wide xmm deep,mm Pit depth,mm Overhead. · Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid(non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames The lift doors shall have minimum 1 hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory). · Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation & SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge. · COP with SS face plate having metallic push buttons with Braille code & luminous indicator around button with FPI, scrolling UP/DN LED indicator & with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi & English with intercom system with telephone instrument in Lift car, LMR & FCC/ground floor. · LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code & luminous indicator around button with CPI, Lift car arrival & next travel direction audio-visual indication at all landings. 	Job	2337800

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Lift controller of simplex full collective based on microprocessor/ PLC with VVVF Drive having closed loop control system, with IBMS compatible having necessary port. The controller shall have necessary protections such as overcurrent, overvoltage, over speed, overheat for all devices including lift motor and travel direction protection, protection for phase loss at input or output etc. ,various operation modes such as maintenance, change direction by attendant, full load bypass, VIP call operation, self levelling operation, call cancel facility, auto return to home landing, fireman evacuation operation, earthquake operation, door open/close operation from COP etc. The system can record information for minimum 30 latest faults, with real-time clock management and handheld keypad with LCD screen for view and setting of parameters, The control panel duly wired with proper size & strength, copper wire for power & control circuit, with provision for addition of floor/control card & allied accessories control panel having enclosure of 1.5mm CRCA sheet with powder coating with IP54 Protection class. · ARD complete with necessary SMF VRLA batteries. · Fireman controller having fireman switch at fire Landing. · CCTV surveillance system comprises of 2nos minimum 2.0MP FHD IP based vandal proof Dome camera in lift car & in LMR/inside lift shaft top aimed on Lift machinery & controller with NVR kept in LMR/FCC with HDR data backup for min. 90 days with min. 20" FHD TV monitor, to be kept in FCC/LMR as directed by Engineer In Charge. · Lift Machine of Gearless PMSM of suitable kW with duty cycle of minimum 120 starts/hr (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory), with Traction pulley, OSG, electromagnetic brakes, entire assembly mounted on adequate size girders duly fixed on LMR floor/ shaft walls complete with main/diverter traction sheaves, suspension wire ropes/belts of adequate size & strength. · Other mechanical parts such as "T" section adequate size guide rails for car & counter weight with brackets fasteners, counter weight frame with necessary blocks, buffers with necessary support arrangement, MS pit ladder etc. erected with necessary steel work. · Minor civil work such as alteration work if any necessary for erection of landing door frames and it's accessories e.g. sill, header, hole pass etc complete with plaster finish, civil work for erection buffers, erection of lift machinery, adequate size core cuts if required & scaffolding for erecting guide rails, providing and fixing steel girders/RCC work having adequate strength for mounting and hoisting lift machine etc. complete as per specification no. LFT. · General: - Job includes entire procedure of obtaining all necessary erection permissions & "License to Work the Lift" from Electrical Inspector(Lifts) with submission to the Engineer In Charge. · The above rate includes Fully Comprehensive AMC for one year from the date of commissioning. 		
17-1-15 (New)	<p>SITC of Electric Traction Passenger Lift with</p> <ul style="list-style-type: none"> · Rated capacity :- 13 Passenger/884Kg · Floors :- G+7 floor (8 Stops/8 Landings) · Travel :- 21 to 29.4 mtrs · Location of Lift Machine:- MR/MRL · Rated speed :- 1.5mps VS · Car/Landing door clear opening of 900/1000 mm wide x 2000 mm high · Clear Car size ofmm wide xmm deep x 2250mm high · Lift shaft available having clear size ofmm wide xmm deep,mm Pit depth,mm Overhead. 	Job	2461370

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid(non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames The lift doors shall have minimum 1 hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory). · Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation & SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge. · COP with SS face plate having metallic push buttons with Braille code & luminous indicator around button with FPI, scrolling UP/DN LED indicator & with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi & English with intercom system with telephone instrument in Lift car, LMR & FCC/ground floor. · LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code & luminous indicator around button with CPI, Lift car arrival & next travel direction audio-visual indication at all landings. · Lift controller of simplex full collective based on microprocessor/ PLC with VVVF Drive having closed loop control system, with IBMS compatible having necessary port. The controller shall have necessary protections such as overcurrent, overvoltage, over speed, overheat for all devices including lift motor and travel direction protection, protection for phase loss at input or output etc. ,various operation modes such as maintenance, change direction by attendant, full load bypass, VIP call operation, self levelling operation, call cancel facility, auto return to home landing, fireman evacuation operation, earthquake operation, door open/close operation from COP etc. The system can record information for minimum 30 latest faults, with real-time clock management and handheld keypad with LCD screen for view and setting of parameters. The control panel duly wired with proper size & strength, copper wire for power & control circuit, with provision for addition of floor/control card & allied accessories control panel having enclosure of 1.5mm CRCA sheet with powder coating with IP54 Protection class. · ARD complete with necessary SMF VRLA batteries. · Fireman controller having fireman switch at fire Landing. · CCTV surveillance system comprises of 2nos minimum 2.0MP FHD IP based vandal proof Dome camera in lift car & in LMR/inside lift shaft top aimed on Lift machinery & controller with NVR kept in LMR/FCC with HDR data backup for min. 90 days with min. 20" FHD TV monitor, to be kept in FCC/LMR as directed by Engineer In Charge. · Lift Machine of Gearless PMSM of suitable kW with duty cycle of minimum 120 starts/hr (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory), with Traction pulley, OSG, electromagnetic brakes, entire assembly mounted on adequate size girders duly fixed on LMR floor/ shaft walls complete with main/diverter traction sheaves, suspension wire ropes/belts of adequate size & strength. · Other mechanical parts such as "T" section adequate size guide rails for car & counter weight with brackets fasteners, counter weight frame with necessary blocks, buffers with necessary support arrangement, MS pit ladder etc. erected with necessary steel work. 		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Minor civil work such as alteration work if any necessary for erection of landing door frames and it's accessories e.g. sill, header, hole pass etc complete with plaster finish, civil work for erection buffers, erection of lift machinery, adequate size core cuts if required & scaffolding for erecting guide rails, providing and fixing steel girders/RCC work having adequate strength for mounting and hoisting lift machine etc. complete as per specification no. LFT. · General: - Job includes entire procedure of obtaining all necessary erection permissions & "License to Work the Lift" from Electrical Inspector(Lifts) with submission to the Engineer In Charge. · The above rate includes Fully Comprehensive AMC for one year from the date of commissioning. 		
17-1-16 (New)	<p>SITC of Electric Traction Passenger Lift with</p> <ul style="list-style-type: none"> · Rated capacity :- 14 Passenger/952Kg · Floors :- G+7 floor (8 Stops/8 Landings) · Travel :- 21 to 29.4 mtrs · Location of Lift Machine:- MR · Rated speed :- 1.5mps VS · Car/Landing door clear opening of 900 mm wide x 2000mm high · Clear Car size ofmm wide xmm deep x 2250mm high · Lift shaft available having clear size ofmm wide xmm deep,mm Pit depth,mm Overhead. · Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid(non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames The lift doors shall have minimum 1 hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory). · Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation & SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge. · COP with SS face plate having metallic push buttons with Braille code & luminous indicator around button with FPI, scrolling UP/DN LED indicator & with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi & English with intercom system with telephone instrument in Lift car, LMR & FCC/ground floor. · LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code & luminous indicator around button with CPI, Lift car arrival & next travel direction audio-visual indication at all landings. 	Job	2613900

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Lift controller of simplex full collective based on microprocessor/ PLC with VVVF Drive having closed loop control system, with IBMS compatible having necessary port. The controller shall have necessary protections such as overcurrent, overvoltage, over speed, overheat for all devices including lift motor and travel direction protection, protection for phase loss at input or output etc. ,various operation modes such as maintenance, change direction by attendant, full load bypass, VIP call operation, self levelling operation, call cancel facility, auto return to home landing, fireman evacuation operation, earthquake operation, door open/close operation from COP etc. The system can record information for minimum 30 latest faults, with real-time clock management and handheld keypad with LCD screen for view and setting of parameters, The control panel duly wired with proper size & strength, copper wire for power & control circuit, with provision for addition of floor/control card & allied accessories control panel having enclosure of 1.5mm CRCA sheet with powder coating with IP54 Protection class. · ARD complete with necessary SMF VRLA batteries. · Fireman controller having fireman switch at fire Landing. · CCTV surveillance system comprises of 2nos minimum 2.0MP FHD IP based vandal proof Dome camera in lift car & in LMR/inside lift shaft top aimed on Lift machinery & controller with NVR kept in LMR/FCC with HDR data backup for min. 90 days with min. 20" FHD TV monitor, to be kept in FCC/LMR as directed by Engineer In Charge. · Lift Machine of Gearless PMSM of suitable kW with duty cycle of minimum 120 starts/hr (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory), with Traction pulley, OSG, electromagnetic brakes, entire assembly mounted on adequate size girders duly fixed on LMR floor/ shaft walls complete with main/diverter traction sheaves, suspension wire ropes/belts of adequate size & strength. · Other mechanical parts such as "T" section adequate size guide rails for car & counter weight with brackets fasteners, counter weight frame with necessary blocks, buffers with necessary support arrangement, MS pit ladder etc. erected with necessary steel work. · Minor civil work such as alteration work if any necessary for erection of landing door frames and it's accessories e.g. sill, header, hole pass etc complete with plaster finish, civil work for erection buffers, erection of lift machinery, adequate size core cuts if required & scaffolding for erecting guide rails, providing and fixing steel girders/RCC work having adequate strength for mounting and hoisting lift machine etc. complete as per specification no. LFT. · General: - Job includes entire procedure of obtaining all necessary erection permissions & "License to Work the Lift" from Electrical Inspector(Lifts) with submission to the Engineer In Charge. · The above rate includes Fully Comprehensive AMC for one year from the date of commissioning. 		
17-1-17 (New)	<p>SITC of Electric Traction Passenger cum Stretcher/Hospital Lift with</p> <ul style="list-style-type: none"> · Rated capacity :- 15 Passenger/1020Kg · Floors :- G+7 floor (8 Stops/8 Landings) · Travel :- 21 to 29.4 mtrs · Location of Lift Machine:- MR/MRL [applicable for Passenger Lift with MRL only & Stretcher/Hospital Lift with MR & MRL] · Rated speed :- 1.5mps VS · Car/Landing door clear opening of 800/900/1000 mm wide x 2000mm high · Clear Car size ofmm wide xmm deep x 2250mm high 	Job	2701900

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Lift shaft available having clear size ofmm wide xmm deep,mm Pit depth,mm Overhead. · Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid(non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames The lift doors shall have minimum 1 hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory). · Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation & SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge. · COP with SS face plate having metallic push buttons with Braille code & luminous indicator around button with FPI, scrolling UP/DN LED indicator & with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi & English with intercom system with telephone instrument in Lift car, LMR & FCC/ground floor. · LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code & luminous indicator around button with CPI, Lift car arrival & next travel direction audio-visual indication at all landings. · Lift controller of simplex full collective based on microprocessor/ PLC with VVVF Drive having closed loop control system, with IBMS compatible having necessary port. The controller shall have necessary Protections such as overcurrent, overvoltage, over speed, overheat for all devices including lift motor and travel direction protection, protection for phase loss at input or output etc. ,various operation modes such as maintenance, change direction by attendant, full load bypass, VIP call operation, self levelling operation, call cancel facility, auto return to home landing, fireman evacuation operation, earthquake operation, door open/close operation from COP etc. The system can record information for minimum 30 latest faults, with real-time clock management and handheld keypad with LCD screen for view and setting of parameters, The control panel duly wired with proper size & strength, copper wire for power & control circuit, with provision for addition of floor/control card & allied accessories control panel having enclosure of 1.5mm CRCA sheet with powder coating with IP54 Protection class. · ARD complete with necessary SMF VRLA batteries. · Fireman controller having fireman switch at fire Landing. · CCTV surveillance system comprises of 2 nos minimum 2.0MP FHD IP based vandal proof Dome camera in lift car & in LMR/inside lift shaft top aimed on Lift machinery & controller with NVR kept in LMR/FCC with HDR data backup for min. 90 days with min. 20" FHD TV monitor, to be kept in FCC/LMR as directed by Engineer In Charge. · Lift Machine of Gearless PMSM of suitable kW with duty cycle of minimum 120 starts/hr (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory), with Traction pulley, OSG, electromagnetic brakes, entire assembly mounted on adequate size girders duly fixed on LMR floor/ shaft walls complete with main/diverter traction sheaves, suspension wire ropes/belts of adequate size & strength. · Other mechanical parts such as "T" section adequate size guide rails for car & counter weight with brackets fasteners, counter weight frame with necessary blocks, buffers with necessary support arrangement, MS pit ladder etc. erected with necessary steel work. 		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> Minor civil work such as alteration work if any necessary for erection of landing door frames and it's accessories e.g. sill, header, hole pass etc complete with plaster finish, civil work for erection buffers, erection of lift machinery, adequate size core cuts if required & scaffolding for erecting guide rails, providing and fixing steel girders/RCC work having adequate strength for mounting and hoisting lift machine etc. complete as per specification no. LFT. General: - Job includes entire procedure of obtaining all necessary erection permissions & "License to Work the Lift" from Electrical Inspector(Lifts) with submission to the Engineer In Charge. The above rate includes Fully Comprehensive AMC for one year from the date of commissioning. 		
17-1-18 (New)	<p>SITC of Electric Traction Passenger Lift with</p> <ul style="list-style-type: none"> Rated capacity :- 16 Passenger/1088Kg Floors :- G+7 floor (8 Stops/8 Landings) Travel :- 21 to 29.4 mtrs Location of Lift Machine:- MR/MRL Rated speed :- 1.5mps VS Car/Landing door clear opening of 1000mm wide x 2000 mm high Clear Car size ofmm wide xmm deep x 2250mm high Lift shaft available having clear size ofmm wide xmm deep,mm Pit depth,mm Overhead. Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid(non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames The lift doors shall have minimum 1 hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory). Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation & SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge. COP with SS face plate having metallic push buttons with Braille code & luminous indicator around button with FPI, scrolling UP/DN LED indicator & with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi & English with intercom system with telephone instrument in Lift car, LMR & FCC/ground floor. LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code & luminous indicator around button with CPI, Lift car arrival & next travel direction audio-visual indication at all landings. 	Job	2783302

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Lift controller of simplex full collective based on microprocessor/ PLC with VVVF Drive having closed loop control system, with IBMS compatible having necessary port. The controller shall have necessary Protections such as overcurrent, overvoltage, over speed, overheat for all devices including lift motor and travel direction protection, protection for phase loss at input or output etc. ,various operation modes such as maintenance, change direction by attendant, full load bypass, VIP call operation, self levelling operation, call cancel facility, auto return to home landing, fireman evacuation operation, earthquake operation, door open/close operation from COP etc. The system can record information for minimum 30 latest faults, with real-time clock management and handheld keypad with LCD screen for view and setting of parameters, The control panel duly wired with proper size & strength, copper wire for power & control circuit, with provision for addition of floor/control card & allied accessories control panel having enclosure of 1.5mm CRCA sheet with powder coating with IP54 Protection class. · ARD complete with necessary SMF VRLA batteries. · Fireman controller having fireman switch at fire Landing. · CCTV surveillance system comprises of 2 nos minimum 2.0MP FHD IP based vandal proof Dome camera in lift car & in LMR/inside lift shaft top aimed on Lift machinery & controller with NVR kept in LMR/FCC with HDR data backup for min. 90 days with min. 20" FHD TV monitor, to be kept in FCC/LMR as directed by Engineer In Charge. · Lift Machine of Gearless PMSM of suitable kW with duty cycle of minimum 120 starts/hr (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory), with Traction pulley, OSG, electromagnetic brakes, entire assembly mounted on adequate size girders duly fixed on LMR floor/ shaft walls complete with main/diverter traction sheaves, suspension wire ropes/belts of adequate size & strength. · Other mechanical parts such as "T" section adequate size guide rails for car & counter weight with brackets fasteners, counter weight frame with necessary blocks, buffers with necessary support arrangement, MS pit ladder etc. erected with necessary steel work. · Minor civil work such as alteration work if any necessary for erection of landing door frames and it's accessories e.g. sill, header, hole pass etc complete with plaster finish, civil work for erection buffers, erection of lift machinery, adequate size core cuts if required & scaffolding for erecting guide rails, providing and fixing steel girders/RCC work having adequate strength for mounting and hoisting lift machine etc. complete as per specification no. LFT. · General: - Job includes entire procedure of obtaining all necessary erection permissions & "License to Work the Lift" from Electrical Inspector(Lifts) with submission to the Engineer In Charge. · The above rate includes Fully Comprehensive AMC for one year from the date of commissioning. 		
17-1-19 (New)	<p>SITC of Electric Traction Passenger Lift with</p> <ul style="list-style-type: none"> · Rated capacity :- 18 Passenger/1224Kg · Floors :- G+7 floor (8 Stops/8 Landings) · Travel :- 21 to 29.4 mtrs · Location of Lift Machine:- MR · Rated speed :- 1.5mps VS · Car/Landing door clear opening of 1100 mm wide x 2000 mm high · Clear Car size ofmm wide xmm deep x 2250mm high · Lift shaft available having clear size ofmm wide xmm deep,mm Pit depth,mm Overhead. 	Job	2910914

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid(non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames The lift doors shall have minimum 1 hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent Test laboratory). · Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation & SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge. · COP with SS face plate having metallic push buttons with Braille code & luminous indicator around button with FPI, scrolling UP/DN LED indicator & with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi & English with intercom system with telephone instrument in Lift car, LMR & FCC/ground floor. · LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code & luminous indicator around button with CPI, Lift car arrival & next travel direction audio-visual indication at all landings. · Lift controller of simplex full collective based on microprocessor/ PLC with VVVF Drive having closed loop control system, with IBMS compatible having necessary port. The controller shall have necessary protections such as overcurrent, overvoltage, over speed, overheat for all devices including lift motor and travel direction protection, protection for phase loss at input or output etc. ,various operation modes such as maintenance, change direction by attendant, full load bypass, VIP call operation, self levelling operation, call cancel facility, auto return to home landing, fireman evacuation operation, earthquake operation, door open/close operation from COP etc. The system can record information for minimum 30 latest faults, with real-time clock management and handheld keypad with LCD screen for view and setting of parameters, The control panel duly wired with proper size & strength, copper wire for power & control circuit, with provision for addition of floor/control card & allied accessories control panel having enclosure of 1.5mm CRCA sheet with powder coating with IP54 Protection class. · ARD complete with necessary SMF VRLA batteries. · Fireman controller having fireman switch at fire Landing. · CCTV surveillance system comprises of 2nos minimum 2.0MP FHD IP based vandal proof Dome camera in lift car & in LMR/inside lift shaft top aimed on Lift machinery & controller with NVR kept in LMR/FCC with HDR data backup for min. 90 days with min. 20" FHD TV monitor, to be kept in FCC/LMR as directed by Engineer In Charge. · Lift Machine of Gearless PMSM of suitable kW with duty cycle of minimum 120 starts/hr (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory), with Traction pulley, OSG, electromagnetic brakes, entire assembly mounted on adequate size girders duly fixed on LMR floor/ shaft walls complete with main/diverter traction sheaves, suspension wire ropes/belts of adequate size & strength. · Other mechanical parts such as "T" section adequate size guide rails for car & counter weight with brackets fasteners, counter weight frame with necessary blocks, buffers with necessary support arrangement, MS pit ladder etc. erected with necessary steel work. 		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Minor civil work such as alteration work if any necessary for erection of landing door frames and it's accessories e.g. sill, header, hole pass etc complete with plaster finish, civil work for erection buffers, erection of lift machinery, adequate size core cuts if required & scaffolding for erecting guide rails, providing and fixing steel girders/RCC work having adequate strength for mounting and hoisting lift machine etc. complete as per specification no. LFT. · General: - Job includes entire procedure of obtaining all necessary erection permissions & "License to Work the Lift" from Electrical Inspector(Lifts) with submission to the Engineer In Charge. · The above rate includes Fully Comprehensive AMC for one year from the date of commissioning. 		
17-1-20 (New)	SITC of Electric Traction Passenger cum Stretcher/Hospital Lift with	Job	3095696
	<ul style="list-style-type: none"> · Rated capacity :- 20 Passenger/1360Kg · Floors :- G+7 floor (8 Stops/8 Landings) · Travel :- 21 to 29.4 mtrs · Location of Lift Machine:- MR/MRL · Rated speed :- 1.5mps VS · Car/Landing door clear opening of 1100/1200 mm wide x 2000 mm high · Clear Car size ofmm wide xmm deep x 2250mm high · Lift shaft available having clear size ofmm wide xmm deep,mm Pit depth,mm Overhead. · Doors type :- COPO/TOPO Doors with frame made from SS 304 grade solid(non-cladded) sheet of 1.5mm thick in hairline finish for car and all landing doors with SS door architraves/frames The lift doors shall have minimum 1 hour fire rating (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory). · Lift car enclosure made from SS 304 grade solid (non-cladded) sheet of 1.5mm, thick with hairline finish with frame made from MS girders, bracing of adequate size with minimum safety factor of 5, with Toe Guard Apron, with necessary false ceiling with adequate LED lights, blower/fan for ventilation & SS chequered plate flooring, handrails, mirror, emergency light etc. The lift car interior design shall be done as per the directions of engineer in charge. · COP with SS face plate having metallic push buttons with Braille code & luminous indicator around button with FPI, scrolling UP/DN LED indicator & with / without attendant key switch, OWD with audio-visual alarm, VAS in Marathi, Hindi & English with intercom system with telephone instrument in Lift car, LMR & FCC/ground floor. · LOP with SS face plate having recess/surface push button box for all landings with scrolling UP/DN LED indicator having metallic push buttons with Braille code & luminous indicator around button with CPI, Lift car arrival & next travel direction audio-visual indication at all landings. 		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<ul style="list-style-type: none"> · Lift controller of simplex full collective based on microprocessor/ PLC with VVVF Drive having closed loop control system, with IBMS compatible having necessary port. The controller shall have necessary protections such as overcurrent, overvoltage, over speed, overheat for all devices including lift motor and travel direction protection, protection for phase loss at input or output etc. ,various operation modes such as maintenance, change direction by attendant, full load bypass, VIP call operation, self levelling operation, call cancel facility, auto return to home landing, fireman evacuation operation, earthquake operation, door open/close operation from COP etc. The system can record information for minimum 30 latest faults, with real-time clock management and handheld keypad with LCD screen for view and setting of parameters, The control panel duly wired with proper size & strength, copper wire for power & control circuit, with provision for addition of floor/control card & allied accessories control panel having enclosure of 1.5mm CRCA sheet with powder coating with IP54 Protection class. · ARD complete with necessary SMF VRLA batteries. · Fireman controller having fireman switch at fire Landing. · CCTV surveillance system comprises of 2nos minimum 2.0MP FHD IP based vandal proof Dome camera in lift car & in LMR/inside lift shaft top aimed on Lift machinery & controller with NVR kept in LMR/FCC with HDR data backup for min. 90 days with min. 20" FHD TV monitor, to be kept in FCC/LMR as directed by Engineer In Charge. · Lift Machine of Gearless PMSM of suitable kW with duty cycle of minimum 120 starts/hr (with submission of necessary valid test certificate issued by NABL accredited or Independent test laboratory), with Traction pulley, OSG, electromagnetic brakes, entire assembly mounted on adequate size girders duly fixed on LMR floor/ shaft walls complete with main/diverter traction sheaves, suspension wire ropes/belts of adequate size & strength. · Other mechanical parts such as "T" section adequate size guide rails for car & counter weight with brackets fasteners, counter weight frame with necessary blocks, buffers with necessary support arrangement, MS pit ladder etc. erected with necessary steel work. · Minor civil work such as alteration work if any necessary for erection of landing door frames and it's accessories e.g. sill, header, hole pass etc complete with plaster finish, civil work for erection buffers, erection of lift machinery, adequate size core cuts if required & scaffolding for erecting guide rails, providing and fixing steel girders/RCC work having adequate strength for mounting and hoisting lift machine etc. complete as per specification no. LFT. · General: - Job includes entire procedure of obtaining all necessary erection permissions & "License to Work the Lift" from Electrical Inspector(Lifts) with submission to the Engineer In Charge. · The above rate includes Fully Comprehensive AMC for one year from the date of commissioning. 		
17-1-21 (New)	SITC of Duplex Lift control system for two nos. microprocessor/PLC based simplex lift controllers along with necessary software with programming and hardware e.g. logic board, necessary communication/control/data cabling laying in rigid PVC conduits/trunking etc. complete.	each	38686
17-1-22 (New)	SITC of Triplex Lift control system for three nos. microprocessor/PLC based simplex lift controllers along with necessary software with programming and hardware e.g. logic board, necessary communication/control/data cabling laying in rigid PVC conduits/trunking etc. complete.	each	57823

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
17-1-23 (New)	SITC of Quadruplex Lift control system for four nos. microprocessor/PLC based simplex lift controllers along with necessary software with programming and hardware e.g. logic board, necessary communication/control/data cabling laying in rigid PVC conduits/trunking etc. complete.	each	77972
Add On			
A	For Lift travelling up to six floors or at a speed of 1.0 mps, add as below,		
1	For Lift having 700mm wide x 2000mm high clear entrance in 1.5mm thick SS 304 grade solid (non-cladded) landing door [Two panel], this includes all necessary accessories like LOP's with UP/DN buttons-arrows-indicators, extension of guide rails, shaft wiring with trunking, travelling cables, main hoisting ropes/belts, & OSG rope landing doors with all accessories etc. necessary for the normal safe functioning of lift installation complete.	Floor	133047
2	For Lift having 800mm wide x 2000mm high clear entrance in 1.5mm thick SS 304 grade solid (non-cladded) landing door [Two panel], this includes all necessary accessories like LOP's with UP/DN buttons-arrows-indicators, extension of guide rails, shaft wiring with trunking, traveling cables, main hoisting ropes/belts, & OSG rope landing doors with all accessories etc. necessary for the normal safe functioning of lift installation complete.	Floor	137031
3	For Lift having 900mm wide x 2000mm high clear entrance in 1.5mm thick SS 304 grade solid(non-cladded) landing door [Two panel], this includes all necessary accessories like LOP's with UP/DN buttons-arrows-indicators, extension of guide rails, shaft wiring with trunking, travelling cables, main hoisting ropes/belts, & OSG rope landing doors with all accessories etc. necessary for the normal safe functioning of lift installation complete.	Floor	141837
4	For Lift having 1000mm wide x 2000mm high clear entrance in 1.5mm thick SS 304 grade solid(non-cladded) landing door [Two panel], this includes all necessary accessories like LOP's with UP/DN buttons-arrows-indicators, extension of guide rails, shaft wiring with trunking, travelling cables, main hoisting ropes/belts, & OSG rope landing doors with all accessories etc. necessary for the normal safe functioning of lift installation complete.	Floor	146107
5	For Lift having 1100mm wide x 2000mm high clear entrance in 1.5mm thick SS 304 grade solid(non-cladded) landing door [Two panel], this includes all necessary accessories like LOP's with UP/DN buttons-arrows-indicators, extension of guide rails, shaft wiring with trunking, travelling cables, main hoisting ropes/belts, & OSG rope landing doors with all accessories etc. necessary for the normal safe functioning of lift installation complete.	Floor	150580
6	For Lift having 1200mm wide x 2000mm high clear entrance in 1.5mm thick SS 304 grade solid(non-cladded) landing door [Two panel], this includes all necessary accessories like LOP's with UP/DN buttons-arrows-indicators, extension of guide rails, shaft wiring with trunking, travelling cables, main hoisting ropes/belts, & OSG rope landing doors with all accessories etc. necessary for the normal safe functioning of lift installation complete.	Floor	155908
A1	For Lift travelling above seven floors & up to fifteen floors or at a speed of 1.5 mps, add as below,		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
1	For Lift having 700mm wide x 2000mm high clear entrance in 1.5mm thick SS 304 grade solid(non-cladded) landing door [Two panel], this includes all necessary accessories like LOP's with UP/DN buttons-arrows-indicators, extension of guide rails, shaft wiring with trunking, travelling cables, main hoisting ropes/belts, & OSG rope landing doors with all accessories etc. necessary for the normal safe functioning of lift installation complete.	Floor	139007
2	For Lift having 800mm wide x 2000mm high clear entrance in 1.5mm thick SS 304 grade solid(non-cladded) landing door [Two panel], this includes all necessary accessories like LOP's with UP/DN buttons-arrows-indicators, extension of guide rails, shaft wiring with trunking, travelling cables, main hoisting ropes/belts, & OSG rope landing doors with all accessories etc. necessary for the normal safe functioning of lift installation complete.	Floor	143188
3	For Lift having 900mm wide x 2000mm high clear entrance in 1.5mm thick SS 304 grade solid(non-cladded) landing door [Two panel], this includes all necessary accessories like LOP's with UP/DN buttons-arrows-indicators, extension of guide rails, shaft wiring with trunking, travelling cables, main hoisting ropes/belts, & OSG rope landing doors with all accessories etc. necessary for the normal safe functioning of lift installation complete.	Floor	148207
4	For Lift having 1000mm wide x 2000mm high clear entrance in 1.5mm thick SS 304 grade solid(non-cladded) landing door [Two panel], this includes all necessary accessories like LOP's with UP/DN buttons-arrows-indicators, extension of guide rails, shaft wiring with trunking, travelling cables, main hoisting ropes/belts, & OSG rope landing doors with all accessories etc. necessary for the normal safe functioning of lift installation complete.	Floor	152654
5	For Lift having 1100mm wide x 2000mm high clear entrance in 1.5mm thick SS 304 grade solid(non-cladded) landing door [Two panel], this includes all necessary accessories like LOP's with UP/DN buttons-arrows-indicators, extension of guide rails, shaft wiring with trunking, travelling cables, main hoisting ropes/belts, & OSG rope landing doors with all accessories etc. necessary for the normal safe functioning of lift installation complete.	Floor	157313
6	For Lift having 1200mm wide x 2000mm high clear entrance in 1.5mm thick SS 304 grade solid(non-cladded) landing door [Two panel], this includes all necessary accessories like LOP's with UP/DN buttons-arrows-indicators, extension of guide rails, shaft wiring with trunking, travelling cables, main hoisting ropes/belts, & OSG rope landing doors with all accessories etc. necessary for the normal safe functioning of lift installation complete.	Floor	162898
A2	For Lift travelling above fifteen floors & up to twenty floors or at a speed of 1.75 mps, add as below,		
1	For Lift having 800mm wide x 2000mm high clear entrance in 1.5mm thick SS 304 grade solid(non-cladded) landing door [Two panel], this includes all necessary accessories like LOP's with UP/DN buttons-arrows-indicators, extension of guide rails, shaft wiring with trunking, travelling cables, main hoisting ropes/belts, & OSG rope, landing doors with all accessories etc. complete for the safe functioning of lift installation.	Floor	147428

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
2	For Lift having 900mm wide x 2000mm high clear entrance in 1.5mm thick SS 304 grade solid(non-cladded) landing door [Two panel], this includes all necessary accessories like LOP's with UP/DN buttons-arrows-indicators, extension of guide rails, shaft wiring with trunking, travelling cables, main hoisting ropes/belts, & OSG rope, landing doors with all accessories etc. complete for the safe functioning of lift installation.	Floor	152608
3	For Lift having 1000mm wide x 2000mm high clear entrance in 1.5mm thick SS 304 grade solid(non-cladded) landing door [Two panel], this includes all necessary accessories like LOP's with UP/DN buttons-arrows-indicators, extension of guide rails, shaft wiring with trunking, travelling cables, main hoisting ropes/belts, & OSG rope, landing doors with all accessories etc. complete for the safe functioning of lift installation.	Floor	157138
4	For Lift having 1100mm wide x 2000mm high clear entrance in 1.5mm thick SS 304 grade solid(non-cladded) landing door [Two panel], this includes all necessary accessories like LOP's with UP/DN buttons-arrows-indicators, extension of guide rails, shaft wiring with trunking, travelling cables, main hoisting ropes/belts, & OSG rope, landing doors with all accessories etc. complete for the safe functioning of lift installation.	Floor	161952
5	For Lift having 1200mm wide x 2000mm high clear entrance in 1.5mm thick SS 304 grade solid(non-cladded) landing door [Two panel], this includes all necessary accessories like LOP's with UP/DN buttons-arrows-indicators, extension of guide rails, shaft wiring with trunking, travelling cables, main hoisting ropes/belts, & OSG rope, landing doors with all accessories etc. complete for the safe functioning of lift installation.	Floor	167645
B	For Full Collective control system, add as below.		
1	For Lift travelling above First floor & up to Sixth floor	Each	27340
C	For additional 2MP Camera along with necessary accessories at Home Landing, add as given.	Each	13460
D	The above rates are for landing & car door height of 2000mm and Lift car ceiling height of 2250mm . If the requirements for landing & car doors height above 2000mm & Lift car height above 2250mm, add overall Rs. per 100mm rise per Lift per landing.		
a	For Lift car enclosure & car door per 100mm Step rise		
1	for Lift car door, having clear entrance of 700/800/900mm wide	per landing	45346
2	for Lift car door, having clear entrance 1000/1100/1200/1300mm wide	per landing	61940
b	For Lift Landings per 100mm Step rise		
1	for Lift Landing door having clear entrance of 700/800/900mm wide	per landing	11492
2	for Lift Landing door, having clear entrance of 1000/1100/1200/1300mm wide	per landing	15599
Notes	1) If the lift shaft is greater than the required size of the lift as mentioned in relevant Indian Standard [with Amendments up to date], the provision of extra steel required for erecting supports of guide rails shall be made by the department as a separate item.		

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
	<p>2) The Electric power supply of 415 volts, 3 phase 4 wire,50Hz shall be made available up to Lift controller, and as per the provisions laid down in relevant The Electricity Safety Regulations 2010[with Amendments up to date], Indian Standard, The Maharashtra Lift, escalators & moving walkway Act 2017 & relevant Rules, the separate cables for lighting and power & shall be erected through lift shaft only with 2nos distinct earth connections from lift machine & controller .</p> <p>3) The technical specification of Lift duty motor, control panel, brakes, guide rails, and guide shoes, lift car frame, car, counter weight and suspension, lift safety gear and governor, buffer, lift doors, locking device and contacts, lift wire rope of lifts shall be as per actual requirement of the job.</p> <p>4) For nonstandard lift shafts the Lift capacity shall be selected so that all the safety clearances to be maintained as per the provisions laid down in relevant Indian Standard, The Maharashtra Lift, escalators & moving walkway Act 2017 & relevant Rules and work shall be carried out accordingly.</p> <p>5) For building having height of 15 mtrs or more, lift shall meet the requirement of fireman lift as per the statutory requirements laid in relevant Indian Standard.</p> <p>6) While framing estimates of lifts for handicapped persons/ Hospital/Goods Lifts, the relevant Indian standard shall be referred for dimensions.</p> <p>7) The sizes in mm for Lift car, entrance, available lift Shaft etc. with travel shall be mentioned in the Detailed Estimate .</p> <p>8) The above rates are for mostly installed Electric Traction Lifts, for Lift requirements with different purposes/ specifications, the items should be got approved from the competent authority.</p> <p>9) The Traffic Analysis [TA] shall be done as per the provisions laid down in relevant Indian standards for finalizing the capacity and number of Lifts in different types of buildings.</p>		

17.2 Dismantling

17-2-1	Dismantling the existing 4 to 7 Passenger lift of all types travelling G+1 floors (2 Landings/2Stops) having with auto/manual operated doors for lift car & all landings with door frames, guide rails, controller, wiring buffers, Lift Machine, ropes complete with all allied accessories of Lift and making the site clear in all respect complete with refilling the holes with cement mortar & making the site as original this job includes transportation of the dismantled material up to division/section store and handing over to the section engineer/store keeper in charge complete.	Job	30753
17-2-2	Dismantling the existing 8 to 12 Passenger lift of all types travelling G+1 floors (2 Landings/2Stops) having with auto/manual operated doors for lift car & all landings with door frames, guide rails, controller, wiring buffers, Lift Machine, ropes complete with all allied accessories of Lift and making the site clear in all respect complete with refilling the holes with cement mortar & making the site as original this job includes transportation of the dismantled material up to division/section store and handing over to the section engineer/store keeper in charge complete.	Job	33273

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
17-2-3	Dismantling the existing 13 to 17 Passenger/Stretcher/Goods lift of all types travelling G+1 floors (2 Landings/2Stops) having with auto/manual operated doors for lift car & all landings with door frames, guide rails, controller, wiring buffers, Lift Machine, ropes complete with all allied accessories of Lift and making the site clear in all respect complete with refilling the holes with cement mortar & making the site as original this job includes transportation of the dismantled material up to division/section store and handing over to the section engineer/store keeper in charge complete.	Job	35760
17-2-4	Dismantling the existing 18 to 22 Passenger/Stretcher/Goods lift of all types travelling G+1 floors (2 Landings/2Stops) having with auto/manual operated doors for lift car & all landings with door frames, guide rails, controller, wiring buffers, Lift Machine, ropes complete with all allied accessories of Lift and making the site clear in all respect complete with refilling the holes with cement mortar & making the site as original this job includes transportation of the dismantled material up to division/section store and handing over to the section engineer/store keeper in charge complete.	Job	38576
Add On			
A	If there are addition of floors for lift travelling up to six floors, add as given below		
1	For 4 to 7 passenger lift of all types	Floor	1903
2	For 8 to 12 passenger lift of all types	Floor	2081
3	For 13 to 17 passenger/stretcher/goods lift of all types	Floor	2203
4	For 18 to 23 passenger/stretcher/goods lift of all types	Floor	2512
A1	If there are additional floors for Lift travelling above Six floors and up to Fifteen floors Add as given below		
1	For 4 to 7 passenger lift of all types	Floor	2081
2	For 8 to 12 passenger lift of all types	Floor	2203
3	For 13 to 17 passenger/stretcher/goods lift of all types	Floor	2512
4	For 18 to 23 passenger/stretcher/goods lift of all types	Floor	2632
A2	If there are additional floors for Lift travelling above fifteen floors and up to Twenty floors , add as given below		
1	For 4 to 7 passenger lift of all types	Floor	2203
2	For 8 to 12 passenger lift of all types	Floor	2512
3	For 13 to 17 passenger/stretcher/goods lift of all types	Floor	2632
4	For 18 to 23 passenger/stretcher/goods lift of all types	Floor	2795
B	If there are additional set of lift car door and landing door, add as given below		
1	For 4 to 7 passenger lift of all types	Set	1400
2	For 8 to 12 passenger lift of all types	Set	1518
3	For 13 to 17 passenger/stretcher/goods lift of all types	Set	1654
4	For 18 to 23 passenger/stretcher/goods lift of all types	Set	1900

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
Notes	<p>1)The lift dismantled material cost shall be calculated on the rate analysis based on weight density calculations of actual dismantled material i.e. mild steel / MS / GI / SS sheets, motors, copper wire, wooden parts etc.</p> <p>2)The lift dismantled material will be the property of the department</p>		

Chapter: 18
Miscellaneous (MSC)

- 18.1 Rewinding**
- 18.2 Replacement**
- 18.3 Accessories**

Chapter 18 : MISCELLANEOUS (MSC)

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
<u>18.1 Rewinding</u>			
18-1-1	Rewinding the motor of table / pedestal / wall bracket / cabin fans of all type and makes including minor repairs lubricating of ball bearings & bush bearing, and replacing condenser, screws etc. Testing for original speed and consumption with guarantee for 1 year including transportation from site and back	Job	507
18-1-2	Rewinding the motor of the ceiling fan 900mm of all types, makes and over hauling including minor repairs lubricating of ball bearings & bush bearing, and replacing condenser, screws etc.& testing for original speed and consumption with guarantee for one year.	Each	537
18-1-3	Rewinding the motor of the ceiling fan 1200 mm / 1400 mm of all types , makes and over hauling including minor repairs lubricating of ball bearings & bush bearing, and replacing condenser, screws etc. & testing for original speed and consumption with guarantee for one year.	Each	552
18-1-4	Rewinding the motor of the Exhaust fan 900 / 1400 RPM 300 mm of all types, makes and over hauling including minor repairs, lubricating of ball bearings & bush bearing, and replacing condenser, screws etc. & testing for original speed and consumption with guarantee for one year	Each	552
18-1-5	Rewinding the motor of the Exhaust fan 900/1400 RPM 375 mm of all types, makes and over hauling including minor repairs, lubricating of ball bearings & bush bearing, and replacing screws etc. & testing for original speed and consumption with guarantee for one year	Each	652
18-1-6	Rewinding the motor of the Exhaust fan 900/1400 RPM 450 mm of all types, makes and over hauling including minor repairs, lubricating of ball bearings & bush bearing, and replacing condenser, screws etc. & testing for original speed and consumption with guarantee for one year	Each	940
18-1-7	Rewinding of electric motor upto 1 H.P. single phase up to 1400 RPM of all types, makes with copper wire, overhauling with minor repairs, lubricating of ball bearings & bush bearing, and replacing condenser, screws etc. testing for the original speed and no load consumption with guarantee for one year.	Each	1183
Note	<p>1) Item No. 18-1-7 is for rewinding of motors other than table / pedestal / cabin / wall mounting / ceiling / Exhaust fan.</p> <p>2) All above rewinding items are excluding of bearing replacement.</p> <p>3) The electric motor of the same fan shall not be rewound for more than 2 no of times.</p>		
18-1-8	Rewinding of electric motor up to 1 H.P. three phase up to 1400 RPM of all types and makes with copper wire, overhauling with minor repairs, lubricating of ball bearings & bush bearing, and replacing screws etc. testing for the original speed and no load consumption with guarantee for one year	Each	1514
18-1-9	Rewinding of electric motor above 1 HP upto 2 H.P. three phase up to 1400 RPM of all types and makes with copper wire, overhauling with minor repairs, lubricating of ball bearings & bush bearing, and replacing screws etc. testing for the original speed and no load consumption with guarantee for one year	Each	1758

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
18-1-10	Rewinding of electric motor above 2 H.P. upto 3 H.P. three phase up to 1400 RPM of all types and makes with copper wire, overhauling with minor repairs, lubricating of ball bearings & bush bearing, and replacing screws etc. testing for the original speed and no load consumption with guarantee for one year	Each	2052
18-1-11	Rewinding of electric motor above 3 H.P. upto 5 H.P. three phase up to 1400 RPM of all types and makes with copper wire, overhauling with minor repairs, lubricating of ball bearings & bush bearing, and replacing screws etc. testing for the original speed and no load consumption with guarantee for one year	Each	3330
18-1-12	Rewinding of electric motor above 5 H.P. upto 7.5 H.P. three phase up to 1400 RPM of all types and makes with copper wire, overhauling with minor repairs, lubricating of ball bearings & bush bearing, and replacing screws etc. testing for the original speed and no load consumption with guarantee for one year	Each	3987
18-1-13	Rewinding of electric motor above 7.5 H.P. upto 10 H.P. three phase up to 1400 RPM of all types and makes with copper wire, overhauling with minor repairs, lubricating of ball bearings & bush bearing, and replacing screws etc. testing for the original speed and no load consumption with guarantee for one year	Each	4723
18-1-14	Rewinding of electric motor above 10 H.P. upto 12.5 H.P. three phase up to 1400 RPM of all types and makes with copper wire, overhauling with minor repairs, lubricating of ball bearings & bush bearing, and replacing screws etc. testing for the original speed and no load consumption with guarantee for one year	Each	4828
18-1-15	Rewinding of electric motor above 12.5 H.P upto 15 H.P. three phase up to 1400 RPM of all types and makes with copper wire, overhauling with minor repairs, lubricating of ball bearings & bush bearing, and replacing screws etc. testing for the original speed and no load consumption with guarantee for one year	Each	5644
18-1-16	Rewinding of electric motor above 15 H.P. upto 20 H.P. three phase up to 1400 RPM of all types and makes with copper wire, overhauling with minor repairs, lubricating of ball bearings & bush bearing, and replacing screws etc. testing for the original speed and no load consumption with guarantee for one year	Each	7453
18-1-17 (New)	Rewinding of electric motor above 20 H.P. upto 25 H.P. three phase up to 1400 RPM of all types and makes with copper wire, overhauling with minor repairs, lubricating of ball bearings & bush bearing, and replacing screws etc. testing for the original speed and no load consumption with guarantee for one year	Each	9804
18-1-18 (New)	Rewinding of electric motor above 25 H.P. upto 30 H.P. three phase up to 1400 RPM of all types and makes with copper wire, overhauling with minor repairs, lubricating of ball bearings & bush bearing, and replacing screws etc. testing for the original speed and no load consumption with guarantee for one year	Each	11755
18-1-19	Rewinding of submersible pump motor in Borewell of all types and makes up to and including 5 HP with coated copper wires & overhauling with minor repairs, lubricating of ball bearings & bush bearing, and replacing screws etc. testing for the original speed, H.P. and no load consumption & guarantee for one year.	HP	1674

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
18-1-20	Rewinding of submersible pump motor in Borewell of all types and makes above 5 H.P. up to 25 H.P with coated copper wires & overhauling with minor repairs, lubricating of ball bearings & bush bearing, and replacing screws etc. testing for the original speed, H.P. and no load consumption & guarantee for one year.	HP	1871
Note	1) Burnt ceiling fans and motor older than 10 years shall not be rewound. 2) Rates for rewinding of 2 pole motors e.g. 2800/ 2900 RPM, shall be decreased by 5%. 3) The dismantled material shall be retained by the contractor. 4) Rates of Item No. 18-1-17 & 18-1-18 for rewinding of submersible pump in open well and water tank shall be decreased by 40%.		
<u>18.2 Replacement</u>			
18-2-1 (New)	Replacing the existing driving end bearing of original make for electric motor A.C single phase / 3 phase up to 1 H.P. of all types with Required alignment of the shaft and testing the same.	Each	279
18-2-2 (New)	Replacing the existing driving end bearing of original make for electric motor A.C single phase / 3 phase 1.5 H.P. to 2 HP of all types with Required alignment of the shaft and testing the same.	Each	351
18-2-3 (New)	Replacing the existing driving end bearing of original make for electric motor A.C single phase / 3 phase 3 HP to 7.5 HP of all types with Required alignment of the shaft and testing the same..	Each	534
18-2-4 (New)	Replacing the existing driving end bearing of original make for electric motor A.C single phase / 3 phase 10 H.P. of all types with Required alignment of the shaft and testing the same.	Each	825
18-2-5 (New)	Replacing the existing driving end bearing of original make for electric motor A.C single phase / 3 phase 12.5 H.P.to 20 H.P. of all types with Required alignment of the shaft and testing the same.	Each	1344
18-2-6 (New)	Replacing the existing driving end bearing of original make for electric motor A.C single phase / 3 phase above 20 H.P. to 30 H.P. of all types with Required alignment of the shaft and testing the same.	Each	1924
18-2-7 (New)	Replacing the existing nondriving end bearing of original make for electric motor A.C single phase / 3 phase up to 1 H.P. of all types with Required alignment of the shaft and testing the same.	Each	311
18-2-8 (New)	Replacing the existing nondriving end bearing of original make for electric motor A.C single phase / 3 phase 1.5 H.P. to 2 HP of all types with Required alignment of the shaft and testing the same.	Each	322
18-2-9 (New)	Replacing the existing nondriving end bearing of original make for electric motor A.C single phase / 3 phase 3 HP to 7.5 HP of all types with Required alignment of the shaft and testing the same.	Each	517
18-2-10 (New)	Replacing the existing nondriving end bearing of original make for electric motor A.C single phase / 3 phase 10 H.P. of all types with Required alignment of the shaft and testing the same.	Each	536
18-2-11 (New)	Replacing the existing nondriving end bearing of original make for electric motor A.C single phase / 3 phase 12.5 H.P.to 20 H.P. of all types with Required alignment of the shaft and testing the same.	Each	1089

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
18-2-12 (New)	Replacing the existing nondriving end bearing of original make for electric motor A.C single phase / 3 phase above 20 H.P. to 30 H.P. of all types with Required alignment of the shaft and testing the same.	Each	1293
18-2-13	Replacing the existing ball bearing of table/ cabin/ pedestal/ ceiling/ exhaust fan complete with alignment of shaft & testing the same.	Each	183
18-2-14	Replacing the existing bush/ rubber with ring and washers of table/ cabin/ pedestal/ ceiling/ exhaust fan complete with alignment of shaft & testing the same.	Each	99
Note	Above rates are applicable for replacement of bearing only.		

18.3 Accessories

18-3-1	Filtration of Transformer oil on site till satisfactory test results.	Litre	29
18-3-2	Supplying and topping up new transformer oil of approved make with test certificate.	Litre	138
18-3-3	Supplying and replacing No-Volt-Coil for motor having DOL starters up to 7.5 H.P.	Each	268
18-3-4	Supplying and replacing No-Volt-Coil for motor having DOL starters from 7.5 H.P. to 10 H.P.	Each	532
18-3-5	Supplying and replacing No-Volt-Coil for motor having Star-Delta Starter from 12.5 H.P. to 15 H.P. motor.	Each	512
18-3-6	Supplying and replacing No-Volt-Coil for motor having Star-Delta Starter from 15 H.P. to 25 H.P. motor.	Each	661
18-3-7	Supplying and replacing No-Volt-Coil for motor having Star-Delta Starter from 20 H.P. to 30 H.P. motor.	Each	532
18-3-8	Supplying and replacing No-Volt-Coil for motor having Star-Delta Starter from 25 H.P. to 35 H.P. motor.	Each	1049
18-3-9	Supplying and replacing No-Volt-Coil from 30 H.P. to 90 H.P. motor starter.	Each	1368
18-3-10	Supplying and replacing No-Volt-Coil from 90 H.P. to 125 H.P. motor starter.	Each	2378
18-3-11	Supplying and replacing thermal overload relay for motor starter suitable for up to 12.5 HP.	Each	1176
18-3-12	Supplying and replacing thermal overload relay for motor starter suitable for up to 15 HP.	Each	821
18-3-13	Supplying and replacing thermal over load relay for motor starter 10 H.P. to 17.5 H.P.	Each	1159
18-3-14	Supplying and replacing thermal over load relay for motor starter 20 H.P. to 25 H.P.	Each	1336
18-3-15	Supplying and replacing thermal over load relay for motor starter 30 H.P to 35 H.P.	Each	1802
18-3-16	Supplying and replacing thermal over load relay for motor starter 40 H.P. to 50 H.P.	Each	1962
18-3-17	Supplying and replacing thermal over load relay for motor starter 60 H.P. to 90 H.P.	Each	3167
18-3-18	Supplying and replacing thermal over load relay for motor starter from 100 H.P. to 125 H.P.	Each	3625

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
18-3-19	Supplying & replacing timer for STAR/DELTA motor starter up to 12.5 H.P.	Each	619
18-3-20	Supplying & replacing Timer with Combination Coil for motor starter suitable from 15 H.P to 30 H.P.	Each	1981
18-3-21	Supplying & replacing Electronic timer above 30 H.P motor starter.	Each	1325
18-3-22	Supplying & replacing contactor for DOL motor starter from 7.5 H.P. to 10 H.P.	Each	1058
18-3-23	Supplying & replacing contactor for Star Delta motor starter from 12.5 H.P. to 15 H.P.	Each	1083
18-3-24	Supplying & replacing contactor for Star Delta motor starter from 15 H.P. to 25 H.P.	Each	2457
18-3-25	Supplying and replacing contactor for motor starter suitable from 25 H.P. to 30 H.P.	Each	2583
18-3-26	Supplying and replacing contactor for motor starter suitable for above 30 H.P. to 40 H.P.	Each	5243
18-3-27	Supplying and replacing contactor for motor starter suitable for above 45 H.P. to 50 H.P.	Each	7282
18-3-28	Supplying and replacing contactor for motor starter suitable from 55 HP to 60 HP.	Each	9169
18-3-29	Supplying and replacing contactor for motor starter suitable for 75 H.P. to 90 H.P.	Each	16277
18-3-30	Supplying and replacing contactor for motor starter suitable for 100 H.P. to 125 H.P.	Each	21363
18-3-31	Dismantling the existing ceiling fan of various sizes and replacing the bolt and nuts at reel insulator and at bottom of the down rod with half threaded bolt of 3/8" dia 2-1/2" to 3-1/2" long and 5/16" dia 1-3/4" to 2-1/4" long respectively required sizes with 2 plate washers with oiling, greasing and painting the date of repair and re-replacing at position.	Each	140
18-3-32	Replacing suitable capacity motor of water pump of air cooler of any capacity and type in lieu of old one.	Each	533
Note :-	Follow type II Co-ordination of respective manufacturer for starter / spares solution.		

Chapter: 19

Credit for Dismantled Material

19.1 Credit for Dismantled Material

Chapter - 19 Credit for Dismantled Material

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
19-1-1	PVC armoured/unarmoured cables and wires (Aluminium)	kg	19
19-1-2	PVC armoured / unarmoured cables and wires (Copper)	kg	70
19-1-3	Aluminium materials	kg	78
19-1-4	HG / M.S / G.I. Materials / Poles etc.	kg	23
19-1-5	Copper / Brass materials	kg	396
19-1-6	Wooden materials	kg	4
19-1-7	PVC pipes/materials	kg	10
19-1-8	Paper cartoons/boxes.	kg	8
19-1-9	I.C. / M.C. switches / D.P. / D.B./ T.P. / feeder pillar etc.	kg	25
19-1-10	Meters (Ammeter / Voltmeter/Energy meter/ All types of PCB etc..)	kg	26
19-1-11	O.C.B. (without oil)/ A.C.B / V.C.B	Each	1560
19-1-12	Ceiling/cabin/bracket/pedestal/table fan.	Each	180
19-1-13	Exhaust Fan 9" Sweep	Each	119
19-1-14	Exhaust Fan 12" Sweep	Each	166
19-1-15	Exhaust Fan 15" Sweep	Each	245
19-1-16	Exhaust Fan 18" Sweep	Each	379
19-1-17	Exhaust Fan 24" Sweep	Each	418
19-1-18	Air circulators	Each	650
19-1-19	Fluorescent fittings	Each	16
19-1-20	Street/flood light fittings.	Each	61
19-1-21	Geysers	Each	110
19-1-22	Accessories such as tube starter / bell / holder/ ceiling rose /MCB/ MCCB/Contactor/PT etc.	kg	17
19-1-23	Chokes / condenser / small coils / motor starter etc.	kg	42
19-1-24	Lift ropes / belts	kg	25
19-1-25	Hot water boilers	Each	340
19-1-26	Electric motors	HP	456
19-1-27	Water pump sets.	HP	468
19-1-28	A.C. Compressors / Inverter Compressors	TR	582
19-1-29	Window air conditioning unit.	TR	1820
19-1-30	Outdoor unit of split air conditioner.	TR	1880
19-1-31	Indoor unit of split air conditioner.	Each	697
19-1-32	Instant type water cooler	Each	689
19-1-33	Storage type Water cooler	Liter	36
19-1-34	Refrigerator up to 165 litre	Each	770
19-1-35	Refrigerator above 165 litre	Each	1179

Item No	Short Description	Unit	Completed rate
(1)	(2)	(3)	(4)
19-1-36	Air coolers without fan.	Each	507
19-1-37	Air coolers with fan.	Each	805
19-1-38	Transformer oil / OCB Oil	Liter	15
19-1-39	Diesel Generating set	kVA	685
19-1-40	Transformer (Copper winding)	kVA	130
19-1-41	Transformer (Aluminium winding)	kVA	85
19-1-42	Telephone exchange (EPABX)	Each	862
19-1-43	Telephone instrument	Each	38
19-1-44	Water Purifier	Each	78
19-1-45	Inverter / UPS	KVA	71
19-1-46	Voltage Stabilizer	KVA	87
19-1-47	Amplifier	Each	402
19-1-48	Mikes	Each	50
19-1-49	Storage type water purifier	Each	98
19-1-50	Tubular/SMF Battery	kg	58
19-1-51	All types of SS material	kg	63
19-1-52	All types of LED Tube and Fixtures	Each	4

(New)

Notes

1) Rates for items which are not covered in above list should be calculated on the basis of material / equipment considering it's site condition and prevailing market rates and approval should be taken from concerned Superintending Engineer (Electrical)

2) The Credit cost of dismantled material as per above mentioned rates shall be deducted from the estimate to the limit of **Rs. 15000/- (Rs. Fifteen Thousand only)**. If the cost of dismantled material in the estimate exceeds Rs.15000/- (Rs. Fifteen Thousand only) such material shall be retained and taken in the Dismantled Material Register.

3) As per Ministry of Environment and Forests, New Delhi Notification on Dated 16th May 2001 and **Government of India Ministry of Environment, Forest and Climate Change Notification, New Delhi on Dated 23 March 2016** all concerned notifications regarding disposal of material in non-hazardous/non-polluting manner shall be followed. Declaration from the contractor shall be taken and it will be responsibility of the tender calling authority.

Abbreviations

ADSL-Asymmetric digital subscriber line.

AP - Access Points.

ARD-Automatic Rescue Device

AWG - American Wire Gauge.

Cat-6 - Category-6 cable.

CCTV-Closed Circuit Television

CLI - Command Language Interpreter.

COP -Car Operating Panel

COPO-Centre Opening Power Operated

CPI-Car Position Indicator

CPVC - Chlorinated polyvinyl chloride pipe

CRCA -Cold Rolled Closed Annealed

DLP-Defect Liability period

DVI - Digital Visual Interface.

EPABX - Electronic Private Automatic Branch Exchange.

ERW- Electric resistance welding

FCAMC-Fully Comprehensive Annual Maintenance Contract

FCC-Fire Command Centre

FHD-Full High Definition

FPI-Floor Position Indicator

FRLS - Flame Retardant Low Smoke.

GBIC - Gigabit Interface Converter.

GI-Galvanised Iron

HDMI - High Definition Multimedia Interface.

HDR-High Definition Recording

hr-hour

IBMS-Intelligent Building Management System

ID/OD - inner diameter / outer diameter.

IEC-International Electrotechnical Commission

IGBT-Integrated gate Bipolar transistor

IP -Ingress Protection.

IP54-Ingress Protection i. e Protection from limited dust ingress & Protection from water spray from any direction

IP-Internet Protocol

ISI-Indian Standards Institute,

IS-Indian Standards

Kg-Kilograms

kW-Kilowatt rating
LAN - Local Area Network.
LCD-Liquid Crystal Display
LED -Light Emitting Diode
LFT-Lift Installation
LMR-Lift Machine Room
LOP -Landing Operating Panel
LSZH - Low Smoke Zero Halogen.
MP-Mega Pixel
mps-meters per second
MRL-Machine Room Less
MR-Machine Room
MS- Mild Steel
mtrs-meters
NABL-National Accreditation Board For Testing And Calibration Laboratories.

NBC-National Building Code
NVR -Network Video Recorder
OM -Optical Mode.
OS - Optical Single mode.
OSG-Over speed Safety Governor
OWD-Overload Warning Device
PLC-Programmable Logic Control
PMSM-Permanent Magnet Synchronous AC Machine
PoE - Power over Ethernet.
PVC-Polyvinyl Chloride
PWM-Pulse wave modulation
RG - Radio Grade.
RJ - Registered jack.
RoHS - Restriction of Hazardous Substances.
RoR- Rate of Rise
SFP - Small Form-factor Pluggable.
SITC-Supplying, Installing, Testing and Commissioning
SMF -Sealed Maintenance Free
SS-Stainless Steel
TOPO-Telescopic Opening Power Operated
UP/DN -Up/Down
UTP - Unshielded twisted pair.

VAS-Voice Annunciation System

VGA stands for Video Graphics Array.

VRLA -Valve-Regulated Lead-Acid

VS-Variable Speed

VVVF-Variable Voltage Variable Frequency

WAN stands for Wide Area Network.

Standards

Chapter 1 Items in the chapters are conforming to relevant IS as mentioned below.

IS 371 :1999 Ceiling Rose-Specification

IS 694 :2010 PVC insulated cables for voltage upto including 1100 V

IS 732 :2019 Code of practice for electrical wiring installations

IS 1293 : 2005 Plug and socket outlets of rated voltage upto and including 250 volt and rated upto and including 16 Amperes- Specification.

IS 3854 : 1997 Switches for Domestic and similar purposes -specification.

IS 4648 : 1968 Guide for electrical layout in residential building

IS 9537 (Part 1) : 1980 Conduits for electrical installations-Part1 General requirements.

Is 9537 (Part 2) :1980 Specification for conduits for electrical Installation Part-II Rigid Steel Conduit.

IS 9537(Part-3) :1980 Specification for conduits for electrical installations Rigid plain conduit of insulating material

IS 11037 :1984 Specification for electronic type Fan Regulator

IS 14772: 2000 General requirements for enclosures for accessories for household and similar fixed electrical installations-Specification.

IS 14927 :2001 Cable Trunking and ducting systems for electrical installations

IS 17048:2018 Halogen Free Flame Retardant (HFFR) Cables for Working Voltages up to and including 1100 Volts — Specification

Chapter 2 Items in the chapters are conforming to relevant IS as mentioned below.

IS 15885(Part2/Sec13) - Control gear for Led Modules

IS 16101 : 2012 - General Lighting - LEDs and LED modules – Terms and Definitions

IS 16102(Part 1) : 2012 - Self- Ballasted LED Lamps for General Lighting Services Part 1 Safety Requirements

IS 16102(Part 2) : 2012 - Self-Ballasted LED Lamps for General Lighting Services Part 2 Performance Requirements

IS 16103(Part 1) : 2012 - Led Modules for General Lighting Part 1 Safety Requirements

IS 16103(Part 2) : 2012 - Led Modules for General Lighting Part 2 Performance Requirements

IS 16104 : 2012 - d.c. or a.c.. Supplied Electronic Control Gear for LED Modules - Performance Requirements

IS 16105 : 2012 - Method of Measurement of Lumen Maintenance of Solid State Light (LED) Sources

IS 16106 : 2012 - Method of Electrical and Photometric Measurements of Solid-State Lighting (LED) Products

IS 16107 (Part 1):2012 - Luminaires Performance Part 1 General Requirements

Standards

IS 16108 : 2012 - Photo biological Safety of Lamps and Lamp Systems

Chapter 3 Items in the chapters are conforming to relevant IS as mentioned below.

Doc: ET 31(6128) Part 3 Method of Specifying the Performance and Test Requirements

IS 10500 (1991) Drinking water

IS 10555 (2002) Exfoliated Vermiculite (Thermal Insulation)

IS 10556 (1983) Code of Practice for Storage and Handling of Thermal Insulation Materials(Thermal Insulation)

IS 11338 (1985) Thermostats for Use in Refrigerators, Air Conditioners, Water Coolers and Beverage Coolers

IS 13369: Stationary lead acid batteries (with tubular positive plates) in monoblock containers

IS 1391 (Part 2) Room Air Conditioners- Specifications

IS 1391-1 (1992) Thermostats for Use in Refrigerators, Air Conditioners, Water Coolers and Beverage Coolers

IS 1391-2 (1992) Room air conditioners, Part 2: Split air conditioners

IS 1475-1(2001) Self-Contained Drinking Water Coolers, Part 1: Energy Consumption and Performance

IS 1476-1 (2000) Performance of Household Refrigerating Appliance - Refrigerators with or Without Low Temperature Compartment, Part 1: Energy Consumption and Performance

IS 15750 (2006) Household frost-free refrigerating appliances - Refrigerators cooled by internal forced air circulation -Characteristics and test methods

IS 16242 (Part 1) : 2014 PART 1 GENERAL AND SAFETY REQUIREMENTS FOR UPS

IS 1651 - 1991 - Stationary cells and batteries, lead-acid type (Tubular)

IS 16678 (part 2) Safety Conditions for units using A3 refrigerants ISO 5149(Part 2)

IS 2082:1993 Stationary Storage type Water heater

IS 302 (Part 1) Safety of household and similar electrical appliances.

IS 3412 (1994) Electric water boilers

IS 4578 (1997) Lubricating oils for refrigeration machinery

IS 4831 (1968) Recommendation on units and symbols for refrigeration (Refrigeration and air conditioning)

IS 5111 (1993) Testing of refrigerant compressors

IS 7613 (1975) Method of testing panel type air filters for air conditioning and ventilation purposes

IS 8978-1992 Specification of Instantaneous water Heater

Specifications of Inverter (As per MNRE Specifications)

Standards

Chapter 4 Items in the chapters are conforming to relevant IS as mentioned below.

BS EN 50618 : 2014 Electric cables for photovoltaic systems (BT(DE/NOT)258), mainly for DC Cables

IEC 60068- 2 /IEC 62093 (as applicable) : Environmental Testing of PV System – Power Conditioners and Inverters.

IEC 60255-27 : Measuring relays and protection equipment – Part 27: Product safety requirements

IEC 60269-6 : Low-voltage fuses

IEC 60529 : Resistance of enclosures of electric and electronic devices.

IEC 61215/ IS 14286 : Design Qualification and Type Approval for Crystalline Silicon Terrestrial Photovoltaic (PV) Modules

IEC 61643- 11: 2011 Low-voltage surge protective devices

IEC 61701: Salt mist corrosion testing for PV modules

IEC 61730 : Photovoltaic (PV) Module Safety Qualification

IEC 61853- Part 1 /IS 16170 : Part 1 Photovoltaic (PV) module performance testing and energy rating

IEC 62109, IEC 62109-2 : Safety of power converters for use in photovoltaic power systems

IEC 62116/ UL1741/ IEEE 1547 : Utility-interconnected Photovoltaic Inverters - Test Procedure of Islanding Prevention Measures

IEC 62561-7 Requirement and tests for earthing enhancing compound producing low resistance.

IEC 62716 : Photovoltaic (PV) Modules

IEC/IS 61683 : Photovoltaic Systems – Power conditioners:

IS 12933-1 (2003): Solar flat plate collector, Part 1: requirements

IS 12933-2 (2003): Solar flat plate collector, Part 2: components

IS 12933-5 (2003): Solar flat plate collector, Part 5: Methods

IS 12976 (1990): Solar water heating systems - code of practice

IS 14286: Crystalline silicon terrestrial photovoltaic (PV) modules

IS 15450 (2004): Polyethylene/ aluminium / polyethylene composite pressure pipes for hot and cold water supplies

IS 2062 (1992): Mounting structure steel

IS 4759: Galvanization of mounting structure

IS:1239 Part-I (2004): Steel tubes, tubular and other wrought steel fittings

Note- Equivalent standards may be used for different system components of the plants.

Chapter 5 Items in the chapters are conforming to relevant IS as mentioned below.

IS/IEC .60947.1.2007: Low-voltage switchgear and control gear, Part 1: General rules

IEC 61439-1: General requirements.

Standards

- IEC 61439-2: Power switchgear and control gear assemblies.
- IEC 61439-3: Distribution boards.
- IEC 61439-4: Assemblies for construction sites.
- IEC 61439-5: Assemblies for power distribution.
- IEC 61439-6: Busbar trunking systems.
- IEC 62271-1: High Voltage Switchgear and Control gear common specifications
-
- IS/IEC:60947.2.2003: Low-Voltage Switchgear and Control gear, Part 2: Circuit Breakers
- IS/IEC:60947.3.1999: Low voltage switchgear and control gear, Part 3: Switches, disconnectors, switch-disconnectors and fuse combination units
- IS/IEC:60947.4.1.2000: Low-Voltage Switchgear and Control gear, Part 4: Contractors and Motor-Starters, Section 1: Electromechanical Contactors and Motors-Starters
- IS/IEC:60947.4.2.1999: Low-Voltage Switchgear and Control gear : Part 4 - Contractors and Motor-Starters, Section 2: AC Semiconductor Motor Controllers and Starters
- IS/IEC:60947.4.3.1999: Low voltage switchgear and control gear, Part 4: AC semiconductor controllers and contactors for non-motor loads
- IS/IEC:60947.5.1.2003: Low-Voltage Switchgear and Control gear, Part 5: Control Circuit Devices and Switching Elements, Section 1: Electromechanical Control Circuit Devices
- IS/IEC:60947.5.2.2007 : Low-Voltage Switchgear and Control Gear, Part 5: Control Circuit Devices and Switching Elements, Section 2: Proximity Switches
-
- IS:12640.2.2008, IEC 61009-1: Residual Current Operated Circuit - Breaking for Household and Similar Uses, Part 2: Circuit - Breakers with Integral Overcurrent Protection (RCVOs)
- IS:12640:1.2008: Residual Current Operated Circuit - Breakers for Household and Similar Uses, Part 1: Circuit-Breakers Without Integral Overcurrent Protection (RCCBs)
- IS:13703.1.1993: LV Fuses for voltages not exceeding 1000 V ac or 1500 V dc, Part 1: General requirements
- IS:13703.2.1.1993: Low-voltage fuses for voltages not exceeding 1 000 V AC or 1 500 V DC, Part 2: Fuses for use by authorized persons, Section 1: Supplementary requirements
- IS:13703.2.2.1993: Low-voltage fuses for voltages not exceeding 1 000 V AC or 1 500 V DC, Part 2: Fuses for use by authorized persons, Section 2: Examples of standardized fuses
- IS:13703.4.1993: Low-Voltage Fuses for Voltages not Exceeding 1000 V AC or 1500 V DC, Part 4: Supplementary Requirements for Fuse Links for the Protection of Semiconductor Devices
- IS:8623.1.1993: Low-Voltage Switchgear and Control gear Assemblies, Part 1: Requirements for Type-Tested and Partially Type-Tested Assemblies

Standards

IS:8623.2.1993: Low-voltage Switchgear and Control gear Assemblies, Part 2: Particular Requirements for Busbar Trunking Systems (Busway)

IS:8623.3.1993: Low-Voltage Switchgear and Control gear Assemblies, Part 3: Particular Requirements for Equipment Where Unskilled Persons have Access for Their Use

Chapter 6 Items in the chapters are conforming to relevant IS as mentioned below.

IS 2629:1985 for Galvanization process

IEC 61439-6 : Low-voltage switchgear and control gear assemblies - Part 6: Busbar trunking systems (busways)

IEC 61643- II - Low voltage surge protective devices part 32

IS / IEC:60947-1&3 Low-voltage switchgear and control gear - Part 3: Switches, disconnectors, switch-disconnectors and fuse-combination units

IS : 13585 (Part – I) :1994 - Shunt power capacitors of the non-self-healing type for ac systems having a rated voltage up to and including 1000V.

IS : 2551 :1982 - Danger notice plates.

IS 13779/1999: AC static Watt hour meters, class 1 and 2

IS 4237-1967: General requirements for switchgear and control gear for voltages not exceeding 1000 volts ac or 1200 volts DC

IS 720:2010 for Waterproof Plywood

Chapter 7 Items in the chapters are conforming to relevant IS as mentioned below.

IS 7098 – 1 : 1988 (Reaffirmed:2020): Specification For Cross Linked Polyethylene Insulated PVC Sheathed Cables, Part 1: For Working Voltages Up To And Including 1100 Volts

IS - 7093 :1973 : Straight through joint boxes and lead sleeves for paper insulated lead sheathed cables up to and including 11 kV.

IS 17048: 2018: Halogen Free Flame Retardant (HFRR) Cables For Working Voltages up to and Including 1100 Volts

IS 3916 - 6: 2016: Recommended Current Ratings for Cables Part 6 Cross-linked Polyethylene Insulated PVC Sheathed Cables

IS 7098 - 2: 1988 (Reaffirmed:2021): Specification For Cross Linked Polyethylene Insulated Thermoplastics Sheathed Cables, Part 2: For Working Voltages From 3.3 kV Up To And Including 1100 Volts

Chapter 8 Items in the chapters are conforming to relevant IS as mentioned below.

IS 2713-1 to 3 : 1980 -Tubular Steel Poles for Overhead Power Lines.

IS 13158 : 1991 - Prestressed concrete circular spun poles for overhead power, traction and telecommunication lines.

IS 1445 : 1977 - Porcelain insulators for overhead power lines with a nominal voltage up to and including 1000 V.

IS 2062 :2011 - Hot Rolled Medium and High Tensile Structural Steel.

Standards

IS 2486-1 : 1993 - Metal fittings of insulators for overhead power lines with nominal voltage greater than 1000 V, Part 1: General requirements and tests.

IS 2486-2 : 1989 - Insulator fittings for overhead power lines with nominal voltage greater than 1 000 V, Part 2: Dimensional requirements.

IS 2486-3 : 1974 - Insulator Fittings for Overhead Power Lines with a Nominal Voltage Greater than 1000 Volts, Part III: Locking Devices.

IS 2486-4 : 1981 -Insulator Fittings for Overhead Power Lines with a Nominal Voltage Greater than 1 000 V, Part IV: Tests for Locking Devices.

IS 2633 :1986 - Methods for testing uniformity of coating of zinc coated articles.

IS 2713-1 to 3 : 1980 - Tubular Steel Poles for Overhead Power Lines.

IS 398-1 (B) : 1996 - Aluminium Conductors for Overhead Transmission Purposes â€“ Specification, Part 1: Aluminium Stranded Conductors.

IS 398-1 : 1996 - Aluminium conductors for overhead transmission purposes, Part 1: Aluminium stranded conductors.

IS 398-2 : 1996 - Aluminium conductors for overhead transmission purposes, Part 2: Aluminium conductors, galvanized steel reinforced.

IS 4759 : 1996 - Hot-dip zinc coatings on structural steel and other allied products.

IS 7321 : 1974 - Code of practice for selection, handling and erection of concrete poles for overhead power and telecommunication lines.

IS 785 : 1998 - Reinforced Concrete Poles for Overhead Power and Telecommunication Lines.

IS 808 : 1989 - Dimensions for Hot Rolled Steel Beam, Column, Channel and Angle Sections.

IS 875-3 : 1987 - Code of Practice for Design Loads (Other than Earthquake) for Buildings and Structures, Part 3: Wind Loads.

Chapter 9 Items in the chapters are conforming to relevant IS as mentioned below.

IS 3043-1987:-Earthing Indian Standard Code of practice of earthing.

Chapter 10 Items in the chapters are conforming to relevant IS as mentioned below.

IS 1180 (Part 1):- 2014 :-Outdoor type oil immersed distribution transformers up to and including 2500 KVA , 33 KV Specification, Part-1 Mineral Oil Immersed.

IS 10028 Part I 1985:Code of practice for selection installation and maintenance of transformers

IS 1180 (Part 2): 2016 :-Outdoor type three-phase distribution transformers up to and including 100 kVA 11 kV, Part 2: Sealed type

IS 1180 (Part 3):2021 :-Outdoor/ Indoor type liquid immersed distribution transformers up to and including 2500 KVA. 33KV - Specification, Part-3 Natural/Synthetic organic ester liquid Immersed.

IS 1180 part III 2021:Specification for outdoor type three phase distribution transformer

Standards

IS 16081:2013: Insulating Liquid - Specification for unused synthetic organic ester for electrical purposes.

IS 16099 :- Synthetic organic esters for electrical purposes - guide for maintenance of transformer ester in equipment.

IS 16659 :2017 : Fluid for electro technical application- unused natural ester for transformer and similar electrical equipment.

IS 2026 (Part 1): 2011 :-Power transformers, Part 1: General

IS 2026 (part 14): 2018 power transformer (part-14) Liquid immersed power transformer using high temperature insulation materials.

IS 2026 (Part 2): 2010 :- Power transformers, Part 2: Temperature-rise

IS 2026 (Part 3): 2009 :- Power Transformers Part - 3 Insulation Levels, Dielectric Tests and External Clearances in Air

IS 2026 (Part 4): 1977 :- Power transformers, Part 4: Terminal marking, tappings and connections

IS 2026 (Part 5): 2011 :- Power Transformers, Part 5: Ability to Withstand Short Circuit

IS 2026 (Part 7): 2009 :- Power Transformers, Part 7: Loading Guide for Oil-Immersed Power Transformers

IS 2026 (Part 8): 2009 :- Power Transformers, Part 8: Applications guide

IS 2026 part IV 1977:Specification for terminal marking tapping and connections

IS 335: 2018:New Insulating Oils

Chapter 11 Items in the chapters are conforming to relevant IS as mentioned below.

IS 4722 : 2001- Rotating electrical machines (second revision)

Central Pollution Control Board (CPCB) norms 2

Chapter 12 Items in the chapters are conforming to relevant IS as mentioned below.

IS 9079 : 2002 Electric Monoset Pumps for Clear, Cold Water for Agriculture and Water Supply Purposes.

IS 8034 : 2002 Submersible Pump set- Specification.

Chapter 13 Items in the chapters are conforming to relevant IS as mentioned below.

IS 1520:1980 Horizontal Centrifugal Pumps For Clear, Cold, Fresh Water

BS 5839 part I, EN54 - 12 : 2002 Optical beam detector

IS 10221:2008 Coating and wrapping of Underground pipes

IS 1239 :2004 Pipes

IS 13095 : 1981 Butterfly valve for general purposes

IS 3589:2001 Air cushion tank

IS 4038 : 1986 Foot valve for water work purpose

IS 446 :1987 Rubber hose pipe

IS 4927 :1992 Canvas hose pipe for fire fighting

IS 5290: 1993 Landing valve

Standards

- IS 5312-I : 2004 Non return valve for water work purpose
- IS 636 : 1988 RRL hose for fire fighting
- IS 778 :1984 Gate valve for water work purpose
- IS 8423, IS 903 :1994 CP hose for fire fighting
- IS 884 :1985 First aid hose reel for fire fighting system
- IS 903: 1993 Fire hose coupling, branch pipe, Nozzles and nozzle spanner
- IS 907 : 1984 End line strainer
- IS 909: 1992 Specification for Underground Fire Hydrant, Sluice Valve Type

Chapter 16 Items in the chapters are conforming to relevant IS as mentioned below.

- IS 1255 : 1984 Code of practice for installation and maintenance of power cables up to and including 33 kV rating.
- IS 10028 : 2016 Code of practice for selection, installation and maintenance of transformers: Part 2 Installation.
- IS 1239 Steel-I tubes, tubular and other wrought steel fittings specifications.
- IS 1332 : 1986 - Precast reinforced concrete street lighting poles.
- IS 318: Lead Tin Bronze Ingots and Castings (For valve)
- IS 3589: Steel Pipes for Water and Sewage (168.3 to 2 540 mm Outside Diameter)

- IS 4091 : Code of practice for design and construction of foundation for transmission line tower and poles.
- IS:1200.19 : 1981 Method of Measurement of Building and Civil Engineering Works, Part XIX: Water Supply, Plumbing and Drains.

Chapter 17 Items in the chapters are conforming to relevant IS as mentioned below.

- National Building Code 2016 - Part 8 Building Services Section 5 & 5A Installation of Lifts,
Lift ACT & Rules -The Maharashtra Lift, Escalators & Moving Walkway Act-2017 and Relevant Rules
- IS 14665 (Part 1) :2000 -Electric Traction Lifts Part 1 Guidelines For Outline Dimensions of Passenger, Goods, Service and Hospital Lifts
- IS 14665 (Part 2/Sec 1 & 2) : 2000 - Electric Traction Lifts Part 2 Code of Practice For Installation, Operation and Maintenance Section 1 Passenger and Goods Lifts Section 2 Service Lifts
- IS 14665 (Part 3/Sec 1 & 2) : 2000- Electric Traction Part 3 Safety Rules Lifts Section 1 Passenger and Goods Lifts, Section 2 Service Lifts
- IS 14665 (Part 4/Sec 1 to 9) : 2001 -Electric Traction Lifts Part 4 Components Section 1 Lift Buffers, Section 2 Lift Guide Rails and Guide Shoes, Section 3 Lift Car frame, Car, Counterweight and Suspension, Section 4 Lift Safety Gears and Governors, Section 5 Lift Retiring Cam, Section 6 Lift Doors and Locking Devices and Contacts, Section 7 Lift Machines and Brakes, Section 8 Lift Wire Ropes, Section 9 Controller and Operating Devices for Lifts

Standards

IS 14665 (Part 5) :1999 -Electric Traction Lifts — Specification

IS 15330: 2003 Code of Practice for Installation and Maintenance of Lifts for differently abled Persons

IS 15785 : 2007 Installation and Maintenance of Lift without conventional Machine Rooms Code of Practice

IS 8216:1976 Guide for Inspection of Wire Ropes

IS/IEC 60034-1:2004 Rotating Electrical Machines Part-1 Rating & Performance

Local Authority Rules : The Development Control Regulations of The local Authority

Part 5 Inspection Manual

Chapter 18 Items in the chapters are conforming to relevant IS as mentioned below.

IS 335 (1993): New insulating oils