

S.E.C. Railway

Office of the
Sr. Divl. Elect. Engineer (RS & G)
Bilaspur/ Dt. 27/05/2026

No. EL/EST./BSP/tend./26-27/02

Sr.DEN (Settlement)
S.E.C. Railway, Bilaspur

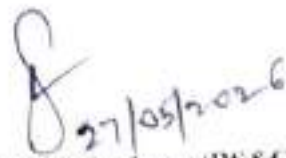
Sub: Tender schedule of the work viz " (i)Electrical portion of work "Provision of 2-Unit Type-II Quarters against replacement account under Sr.DEN/Settlement/Bilaspur.(ii)Electrical portion of works "Construction of 05 units Type-II and 04 units Type-III quarter on replacement ground of old and dilapidated quarters under jurisdiction of ADEN/Settl-I/BSP".(iii) Electrical portion of works "Bilaspur Division: Construction of Type IV six unit Quarters for staff on replacement account under SSE/Work/South in the jurisdiction of Sr. DEN/Sett/Bilaspur.(iv) Electrical portion of works "Construction of 05 units Type-II and 04 units Type-III quarter, 02 units Type-IV quarters on replacement ground of old and dilapidated quarters under jurisdiction of ADEN/Settl-II/BSP"(v) Electrical portion of work "Provision of 4-Unit New Type-III Quarters in Bilaspur Settlement underSr.DEN/Settlement/Bilaspur.

Ref: Your office letter no. DRM-Engg-BSP-T-Qtr-26-27 dt.12.05.2026

In connection with above referred subject Electrical schedule for the work viz (i)Electrical portion of work "Provision of 2-Unit Type-II Quarters against replacement account under Sr.DEN/Settlement/Bilaspur.(ii)Electrical portion of works "Construction of 05 units Type-II and 04 units Type-III quarter on replacement ground of old and dilapidated quarters under jurisdiction of ADEN/Settl-I/BSP".(iii) Electrical portion of works "Bilaspur Division: Construction of Type IV six unit Quarters for staff on replacement account under SSE/Work/South in the jurisdiction of Sr. DEN/Sett/Bilaspur.(iv) Electrical portion of works "Construction of 05 units Type-II and 04 units Type-III quarter, 02 units Type-IV quarters on replacement ground of old and dilapidated quarters under jurisdiction of ADEN/Settl-II/BSP"(v) Electrical portion of work "Provision of 4-Unit New Type-III Quarters in Bilaspur Settlement under Sr.DEN/Settlement/Bilaspur " has been prepared and is being sent to you for further process of floating composite tender.

(Soft copy shall be shared as per requirement)

Enclosed - Electrical Tender schedule (114 pages).


27/05/2026
Sr. Divisional Electrical Engineer (RS&G)
S.E.C. Railway, Bilaspur

o/c
Tender

Name of Work	<ol style="list-style-type: none"> 1. Electrical portion of work "Provision of 2-Unit Type-II Quarters against replacement account under Sr.DEN/Settlement/Bilaspur. 2. Electrical portion of works "Construction of 05 units Type-II and 04 units Type-III quarter on replacement ground of old and dilapidated quarters under jurisdiction of ADEN/Settl-I/BSP". 3. Electrical portion of works "Bilaspur Division: Construction of Type IV six unit Quarters for staff on replacement account under SSE/Work/South in the jurisdiction of Sr. DEN/Sett/Bilaspur. 4. Electrical portion of works "Construction of 05 units Type-II and 04 units Type-III quarter, 02 units Type-IV quarters on replacement ground of old and dilapidated quarters under jurisdiction of ADEN/Settl-II/BSP" 5. Electrical portion of work "Provision of 4-Unit New Type-III Quarters in Bilaspur Settlement under Sr.DEN/Settlement/Bilaspur
--------------	--

Tender Value -70,17,694/-

(Rupees Seventy lakh seventeen thousand six hundred ninety-four Only.)

Special Conditions -

1. All materials shall conform to the relevant Indian Standard Specification.
2. Supervision work of Electrical (G) related works portion shall be carried out by concerned SSEs/unit in-charge of Electrical (G) department.
3. Supply of materials shall be done to SSE (G)/BSP Store only after approval from the office of Sr.DEE (RS&G)/BSP& before installation at site.
4. The MB recording work of Electrical (G) related works portion shall be carried out by concerned SSEs/unit in-charge of Electrical (G) department after satisfactory installation.
5. Original vouchers/test certificate of supply items must be submitted to store during supply to SSE/G/store.
6. The contractor should carry out the Electrical Work in supervision of Class-A Electrical Contractor.His licence certificate to be submitted to Sr.DEE(RS&G)/BSP office before commencement of electrical work.
7. **Payment Clause:**Payment of supply items under will be made 75% after supply of materials and balance 25% shall be released after Erection of those items along with bill of execution portion of work. If supplied items are not installed due to railway reason then 75% cost will be released & 25% will be deducted against not installation of material. if supplied items is not installed due to contractor reason then 30% cost of supply & installation will be deducted from bills.
8. Before supply the material the contractor must take certification by the respective site supervisor that the site is ready in all respect depending on the conditions persist at the time of execution of work and scheduled items can be supplied. Only after certification by site supervisor, contractor will supply the material.All material will be supplied within

one month from date of letter issued to contractor to supply the material; otherwise penalty of Rs.5000/- will be deducted after every 10 days.

9. For approval of make Samples of the materials to be submitted to Sr.DEE (RS&G) office before supply of material & material will be supplied from certified agency/OEM.

10. The material supplied will be as per make in india policy of government.

Schedule 1: Electrical portion of work "Provision of 2-Unit Type-II Quarters against replacement account under Sr.DEN/Settlement/Bilaspur

SN	Description of Items	Qty.	Unit	Rate	Total
A: Type-II quarters (per qrtr)					
1	Supply of Crosslinked Polyethylene Insulated Armoured Cable 4x16sqmm with Aluminium conductor, suitable for rated voltage at 1100 volts grade, as per IS:7098 (Part 1): 1988 latest.	100	Mtrs	351	35100
2	Laying of cable of lower size (upto 4x35 Sq. mm) in Polythene (HDPE) pipe without digging of earth dressing of land including supply of HDPE pipe & all materials. [HDPE pipe 50 mm Diameter, PN 6 or above, conforming to IS 4984 : 2016 or relevant IS standard type: coil/straight as per requirement]	40	Mtrs	127	5080
3	Trenching/Digging of earth 1 mtr deep for cable laying.	40	Mtrs	65	2600
4	Laying of cable of in GI pipe including supply of all materials (including T.G.I. Pipe & except Cable). With supply of G.I. pipe dia. 50mm thickness min. 2mm	10	Mtrs	279	2790
5	Laying of cable in open air/concealed in wall with supply of all material.	50	Mtrs	32	1600
6	Earthing arrangement	1	Nos	3428	3428
7	Supply of electronic KWH meter (energy meter) 5-30 amps AC static 230 volt accuracy class-I	1	Nos	656	656
8	Fixing, connection & commissioning of above supplied	1	Nos	141	141
9	Plug and socket with mcb 25A metal clad box with metal plug and top	4	Nos	1745	6980
10	Fixing connection & commissioning of above	4	Nos	174	696
11	Supply of SPN Distribution board conforms to IS-13032 DBs are phosphatised and painted with epoxy polyester based powder paint, neutral link earth terminal & bus-bar single door 6 way.	1	Nos	639	639
12	Supply of Double pole isolator 40Amp	1	Nos	385	385
13	Supply of MCB SP 6-32 A capacity.	4	Nos	153	612
14	Fixing, connection & commissioning of DB/bus-bar chamber supplied above	1	Nos	29	29
15	Supply of 9W LED retrofit lamp B22 holder base with polycarbonate body.	4	Nos	141	564
16	Supply of ELCB 32 amps. 2 pole 300 MA sensitivity.	1	Nos	1576	1576
17	Fixing of ELCB 32 Amps. 2 pole 300 MA sensitivity.	1	Nos	140	140
18	Concealed wiring for the 6 Amps. Light, fan & 5 Amps socket with 1.5 sqmm. FRLS copper wire including supply of all materials	36	Points	326	11736
19	Concealed Wiring for 6-16Amps plug points with PVC Pipe and PVC insulated copper conductor 2.5 sq. mm. size with supply of all materials.	9	Points	430	3870

20	Concealed Wiring for Sub-circuits.	150	Mtrs	162	24300
21	Supply of LED Inverter Batten 20 W 6500 K Tubelight polycarbonate body	3	Nos	796	2388
22	Supply of 20W LED tube light supply voltage 230V 50Hz built in electronic driver	2	Nos.	593	1186
23	Supply of Electric Ceiling Fan BLDC Type Sweep Size (mm). 1200, rating. 5star, type of regulator: Electronic/remote	4	Nos	2836	11344
24	Fixing of lights/fans supplied as above with supply of flexible wire to connection the nearest ceiling rose.	25	Nos.	37	925
25	Supply of ding dong type call bell.	1	Nos	91	91
26	Supply of Exhaust fan 300 mm sweep complete with accessories.	3	Nos	1649	4947
27	Supply of DP MCB 16 A flush mounting MCB complete with sheet steel enclosure, powder painted for use as main switch.	1	Nos	229	229
28	Fixing and connection of MCB DB supplied as above with supply of all material.	1	Nos	31	31
29	Concealed wiring for 20 Amps plug points with PVC pipe & PVC insulator copper conductor 4 sq mm size with supply of all material.	4	Point	963	3852
30	Supply of ELECTRIC WATER HEATER- GEYSER - Tank Capacity 25 Liter, 5star rated Material of Inner Container: Stainless Steel, Material of Outer Container: ABS, warranty: 3year.	1	Nos	10790	10790
31	Fixing of storage type geyser 25litrs capacity.	1	Nos.	637	637
32	Supply of Mirror/decorative/bracket light 20W	8	Nos	563	4504
Total (Supply & labour) For 01 unit Ty-II Qtrs					143846
A	Total (Supply & labour) For 02 Nos Ty-II Qtrs				287692
B: Other electrical requirements for settlement area of quarters, boundary wall rain water harvesting and other facilities					
1	Supply DB containing one TP MCCB 100 Amps as incoming & 2 nos. 63 Amps. TP MCBs as outgoing complete with neutral bar din rail etc enclosed in a powder painted metallic enclosure	1	Nos.	12147	12147
2	Fixing, connection & commissioning of DB supplied as above	1	Nos.	2040	2040
3	Supply of TPN Distribution board conforms to IS-13032 DBs are phosphatised and painted with epoxy polyester based powder paint, neutral link, earth terminal & bus- bar double door 12 way.	1	Nos	2713	2713
4	Fixing and connection of MCB DB supplied with supply of all material.	1	Nos	34	34
5	Supply of MCB SP 6-32 A capacity.	12	Nos.	153	1836
6	Supply of TPN MCB 63 A capacity (C-curve)	1	Nos	1832	1832
7	Supply of 7 mtrs height hot deep galvanized octagonal pole (single arm)	3	Nos.	9253	27759
8	Excavation of earth, provision of Foundation and erection of hot deep galvanized octagonal poles with aluminium & red oxide paint	3	Nos.	1581	4743
9	Supply of junction box 300x350x125 mm size material thickness 1.5mm with 1 no. 6A HRC fuse with base and 1 no. TPN terminal block stud type suitable for 25 sqmm cable	3	Nos	1600	4800
10	Fixing & connection of junction boxes	3	Nos	140	420
11	Supply of LED street light Luminaries 45W complete with all accessories.	3	Nos	5139	15417

12	Fixing & connection of street light luminaire supplied above	3	Nos	138	414
13	Supply of class A MS pipe/MS clamp for clamping the light fitting at suitable design and size	3	KG	37	111
14	Construction of Cement Concrete foundation containing cement concrete on the proportion 1:3:6 of cement, sand & ballast size of 40mm	3	Cum	4232.0	12696
B	Sub-total				86962
	Grand total of complete electrical cost (A+B)				374654

Schedule 2: Electrical portion of works "Construction of 05 units Type-II and 04 units Type-III quarter on replacement ground of old and dilapidated quarters under jurisdiction of ADEN/Settl-I/BSP"

SN	Description of Items	Qty.	Unit	Rate	Total
	Type-II quarters (per qtr)				
1	Supply of Crosslinked Polyethylene Insulated Armoured Cable 4x16sqmm with Aluminium conductor, suitable for rated voltage at 1100 volts grade, as per IS 7098 (Part 1): 1988 latest.	100	Mtrs.	351	35100
2	Laying of cable of lower size (upto 4x35 Sq. mm) in Polythene (HDPE) pipe without digging of earth dressing of land including supply of HDPE pipe & all materials. [HDPE pipe 50 mm Diameter, PN 6 or above, conforming to IS 4984: 2016 or relevant IS standard type: coil/straight as per requirement]	40	Mtrs.	127	5080
3	Trenching/Digging of earth 1 mtr deep for cable laying.	40	Mtrs.	65	2600
4	Laying of cable of in GI pipe including supply of all materials (including t.G.I. Pipe & except Cable). With supply of G.I. pipe dia. 50mm thickness min. 2mm	10	Mtrs.	279	2790
5	Laying of cable in open air/concealed in wall with supply of all material.	50	Mtrs.	32	1600
6	Earthing arrangement	1	Nos	3428	3428
7	Supply of electronic KWH meter (energy meter) 5-30 amps AC static 230 volt accuracy class-I	1	Nos	656	656
8	Fixing, connection & commissioning of above supplied	1	Nos.	141	141
9	Plug and socket with mcb 25A metal clad box with metal plug and top	3	Nos	1745	5235
10	Fixing connection & commissioning of above	3	Nos	174	522
11	Supply of SPN Distribution board conforms to IS-13032 DBs are phosphatised and painted with epoxy polyester based powder paint, neutral link, earth terminal & bus-bar single door 6 way.	1	Nos	639	639
12	Supply of Double pole isolator 40Amp	1	Nos.	385	385
13	Supply of MCB SP 6-32 A capacity.	4	Nos.	153	612
14	Fixing, connection & commissioning of DB/bus-bar chamber supplied above	1	Nos.	29	29
15	Supply of 9W LED retrofit lamp B22 holder base with polycarbonate body.	4	Nos	141	564
16	Supply of ELCB 32 amps. 2 pole 300 MA sensitivity	1	Nos.	1576	1576
17	Fixing of ELCB 32 Amps. 2 pole 300 MA sensitivity	1	Nos.	140	140
18	Concealed wiring for the 6 Amps. Light, fan & 5 Amps socket with	32	Points	326	10432

19	1.5 sqmm FRLS copper wire including supply of all materials Concealed Wiring for 6-16Amps plug points with PVC Pipe and PVC insulated copper conductor 2.5 sq. mm. size with supply of all materials	12	Points	430	5160
20	Concealed Wiring for Sub-circuits.	120	Mtrs	162	19440
21	Supply of LED Inverter Batten 20 W 6500 K Tubelight polycarbonate body	2	Nos	796	1592
22	Supply of 20W LED tube light supply voltage 230V 50Hz built in electronic driver	2	Nos	593	1186
23	Supply of Electric Ceiling Fan BLDC Type Sweep Size (mm) 1200, rating: 5star, type of regulator: Electronic/remote	3	Nos	2836	8508
24	Fixing of lights/fans supplied as above with supply of flexible wire to connection the nearest ceiling rose	23	Nos	37	851
25	Supply of ding dong type call bell.	1	Nos.	91	91
26	Supply of Exhaust fan 300 mm sweep complete with accessories.	3	Nos	1649	4947
27	Supply of DP MCB 16 A flush mounting MCB complete with sheet steel enclosure, powder painted for use as main switch	1	Nos	229	229
28	Fixing and connection of MCB DB supplied as above with supply of all material	1	Nos	31	31
29	Concealed wiring for 20 Amps plug points with PVC pipe & PVC insulator copper conductor 4 sq mm size with supply of all material.	3	Point	963	2889
30	Supply of ELECTRIC WATER HEATER- GEYSER - Tank Capacity 25 Liter, 5star rated Material of Inner Container: Stainless Steel, Material of Outer Container: ABS, warranty: 3year.	1	Nos	10790	10790
31	Fixing of storage type geyser 25litrs capacity	1	Nos	637	637
32	Supply of Mirror/decorative/bracket light 20W	8	Nos	563	4504
					132384
	Total (Supply & labour) For 01 unit Ty-II Qtrs				561920
A	Total (Supply & labour) For 05 Nos Ty-II Qtrs				

B: Type-III quarters (per qtr)

1	Supply of Crosslinked Polyethylene Insulated Armoured Cable 4x16sqmm with Aluminium conductor, suitable for rated voltage at 1100 volts grade, as per IS:7098 (Part 1): 1988 latest.	100	Mtrs.	351	35100
2	Laying of cable of lower size (upto 4x35 Sq. mm) in Polythene (HDPE) pipe without digging of earth dressing of land including supply of HDPE pipe & all materials.	40	Mtrs	127	5080
	[HDPE pipe 50 mm Diameter, PN 6 or above, conforming to IS 4984 : 2016 or relevant IS standard type coil/straight as per requirement]				
3	Trenching/Digging of earth 1 mtr deep for cable laying	40	Mtrs	65.00	2600
4	Laying of cable of in GI pipe including supply of all materials (including t.G.I. Pipe & except Cable).	10	Mtrs	279	2790
	With supply of G.I. pipe dia. 50mm thickness min. 2mm	50	Mtrs.	32	1600
5	Laying of cable in open air/concealed in wall with supply of all material	1	Nos.	3428	3428
6	Earthing arrangement	1	Nos	656	656
7	Supply of electronic KWH meter (energy meter) 5-30 amps AC static 230 volt accuracy class-I				

8	Fixing , connection & commissioning of above supplied	1	Nos	141	141
9	Plug and socket with mcb 25A metal clad box with metal plug and top	4	Nos	1745	6980
10	Fixing connection & commissioning of above	4	Nos	174	696
11	Supply of SPN Distribution board conforms to IS-13032 DBs are phosphatised and painted with epoxy polyster based powder paint, neutral link, earth terminal & bus-bar single door 6 way	1	Nos	639	639
12	Supply of Double pole isolator 40Amp	1	Nos	385	385
13	Supply of MCB SP 6-32 A capacity.	4	Nos	153	612
14	Fixing , connection & commissioning of DB/bus-bar chamber supplied above.	1	Nos	29	29
15	Supply of 9W LED retrofit lamp B22 holder base with polycarbonate body.	4	Nos	141	564
16	Supply of ELCB 32 amps. 2 pole 300 MA sensitivity.	1	Nos	1576	1576
17	Fixing of ELCB 32 Amps. 2 pole 300 MA sensitivity.	1	Nos	140	140
18	Concealed wiring for the 6 Amps. Light, fan & 5 Amps socket with 1.5 sqmm. FRLS copper wire including supply of all materials	36	Points	326	11736
19	Concealed Wiring for 6-16Amps plug points with PVC Pipe and PVC insulated copper conductor 2.5 sq. mm. size with supply of all materials	15	Points	430	6450
20	Concealed Wiring for Sub-circuits.	150	Mtrs	162	24300
21	Supply of LED Inverter Batten 20 W 6500 K Tubelight polycarbonate body	3	Nos	796	11736
22	Supply of 20W LED tube light supply voltage 230V 50Hz built in electronic driver.	2	Nos	593	6450
23	Supply of Electric Ceiling Fan BLDC Type Sweep Size (mm):1200, rating: 5star, type of regulator: Electronic/remote	4	Nos	2836	24300
24	Fixing of lights/fans supplied as above with supply of flexible wire to connection the nearest ceiling rose.	25	Nos	37	11736
25	Supply of ding dong type call bell.	1	Nos	91	6450
26	Supply of Exhaust fan 300 mm sweep complete with accessories.	3	Nos	1649	24300
27	Supply of DP MCB 16 A flush mounting MCB complete with sheet steel enclosure , powder painted for use as main switch.	1	Nos	229	11736
28	Fixing and connection of MCB DB supplied as above with supply of all materail.	1	Nos	31	31
29	Concealed wiring for 20 Amps plug points with PVC pipe & PVC insulator copper conductor 4 sq mm size with supply of all material.	4	Point	963	3852
30	Supply of ELECTRIC WATER HEATER- GEYSER - Tank Capacity 25 Liter, 5star rated Material of Inner Container: Stainless Steel, Material of Outer Container: ABS, warranty: 3year,	2	Nos	10790	21580
31	Fixing of storage type geyser 25litrs capacity.	2	Nos	637	1274
32	Supply of Mirror/decorative/bracket light 20W	8	Nos	563	4504
Total (Supply & labour) For 01 unit Ty-III Qtrs					157853
B Total (Supply & labour) For 04 Nos Ty-III Qtr					631412
C Other electrical requirements for settlement area of quarters					

1	Supply of 7 mtrs height hot deep galvanized octagonal pole (single arm)	10	Nos.	9253	92530
2	Excavation of earth, provision of Foundation and erection of hot deep galvanized octagonal poles with aluminium & red oxide paint	10	Nos.	1581	15810
3	Supply of junction box 300x350x125 mm size material thickness 1.5mm with 1 no. 6A HRC fuse with base and 1 no. TPN terminal block stud type suitable for 25 sqmm cable	10	Nos	1600	16000
4	Fixing & connection of junction boxes	10	Nos	140	1400
5	Supply of LED street light Luminaries 45W complete with all accessories	20	Nos	5139	102780
6	Fixing & connection of street light luminaire supplied above.	10	Nos	138	1380
7	Supply of class A MS pipe/MS clamp for clamping the light fitting at suitable design and size.	5	KG	37	185
8	Trimming of big branches above 15 cm.	20	Nos	342	6840
9	Trimming of small branches dia. Above 5 CM & less than 15 cm.	50	Nos	171	8550
10	Disconnection of existing wiring.	60	Nos	577	34620
11	Construction of Cement Concrete foundation containing cement concrete on the proportion 1:3:6 of cement sand & ballst size of 40mm	5	Cum	4232.0	21160
12	Supply of DB containing one TP MCCB 100 Amps as incoming & 2 nos 63 Amps. TP MCBs as outgoing complete with neutral bar din rail etc enclosed in a powder painted metallic enclosure	3	Nos	12147	36441
13	Fixing of above DB	3	Nos	1962	5886
C	Subtotal				343582
	Grand total of complete electrical cost (A+B+C)				1636914

Schedule 3 Electrical portion of works "Bilaspur Division: Construction of Type IV six unit Quarters for staff on replacement account under SSE/Work/South in the jurisdiction of Sr. DEN/Sett/Bilaspur"

SN	Description of Items	Qty.	Unit	Rate	Total
	A: Type-IV quarters (per qrtr)				
1	Supply of Crosslinked Polyethylene Insulated Armoured Cable 4x25sqmm with Aluminium conductor, suitable for rated voltage at 1100 volts grade, as per IS:7098 (Part 1): 1988 latest.	150	Mtrs	447	67050
2	Laying of cable of lower size (upto 4x35 Sq. mm) in Polythene (HDPE) pipe without digging of earth dressing of land including supply of HDPE pipe & all materials [HDPE pipe 50 mm Diameter, PN 6 or above, conforming to IS 4984 : 2016 or relevant IS standard type: coil/straight as per requirement]	60	Mtrs	127	7620
3	Trenching/Digging of earth 1 mtr deep for cable laying	40	Mtrs	65.00	2600
4	Laying of cable of in GI pipe including supply of all materials (including t.G.I. Pipe & except Cable). With supply of G.I. pipe dia 50mm thickness min. 2mm	40	Mtrs	279	11160
5	Laying of cable in open air/concealed in wall with supply of all material.	50	Mtrs	32	1600
6	Earthing arrangement	1	Nos	3428	3428
7	Supply of electronic KWH meter (energy meter) 5-30 amps AC static 230 volt accuracy class-I	1	Nos.	656	656
8	Fixing, connection & commisioning of above supplied	1	Nos	141	141

9	Plug and socket with mcb 25A metal clad box with metal plug and top	5	Nos	1745	8725
10	Fixing connection & commissioning of above	5	Nos	174	870
11	Supply of SPN Distribution board conforms to IS-13032 DBs are phosphatised and painted with epoxy polyster based powder paint, neutral link earth terminal & bus-bar single door 8 way	1	Nos	1710	1710
12	Supply of Double pole isolator 40Amp	1	Nos	385	385
13	Supply of MCB SP 6-32 A capacity	4	Nos	153	612
14	Fixing, connection & commissioning of DB/bus-bar chamber supplied above	1	Nos	29	29
15	Supply of 9W LED retrofit lamp B22 holder base with polycarbonate body	4	Nos	141	564
16	Supply of ELCB 32 amps. 2 pole 300 MA sensitivity	1	Nos	1576	1576
17	Fixing of ELCB 32 Amps. 2 pole 300 MA sensitivity	1	Nos	140	140
18	Concealed wiring for the 6 Amps. Light, fan & 5 Amps socket with 1.5 sqmm FRLS copper wire including supply of all materials	46	Points	326	14996
19	Concealed Wiring for 6-16Amps plug points with PVC Pipe and PVC insulated copper conductor 2.5 sq. mm. size with supply of all materials.	17	Points	430	7310
20	Concealed Wiring for Sub-circuits	170	Mtrs	162	27540
21	Supply of LED Inverter Batten 20 W 6500 K Tubelight polycarbonate body	3	Nos	796	2388
22	Supply of 20W LED tube light supply voltage 230V 50Hz built in electronic driver	3	Nos	593	1779
23	Supply of Electric Ceiling Fan BLDC Type Sweep Size (mm) 1200, rating: 5star, type of regulator: Electronic/remote	6	Nos	2836	17016
24	Fixing of lights/fans supplied as above with supply of flexible wire to connection the nearest ceiling rose.	33	Nos	37	1221
25	Supply of ding dong type call bell	1	Nos	91	91
26	Supply of Exhaust fan 300 mm sweep complete with accessories.	4	Nos	1649	6596
27	Supply of DP MCB 16 A flush mounting MCB complete with sheet steel enclosure, powder painted for use as main switch.	1	Nos	229	229
28	Fixing and connection of MCB DB supplied as above with supply of all material.	1	Nos	31	31
29	Concealed wiring for 20 Amps plug points with PVC pipe & PVC insulator copper conductor 4 sq mm size with supply of all material.	5	Point	963	4815
30	Supply of ELECTRIC WATER HEATER- GEYSER - Tank Capacity 25 Liter, 5star rated Material of Inner Container: Stainless Steel, Material of Outer Container: ABS, warranty 3year.	2	Nos	10790	21580
31	Fixing of storage type geyser 25litrs capacity	2	Nos	637	1274
32	Supply of Mirror/decorative/bracket light 20W	12	Nos	583	6756
	Total (Supply & labour) For 01 unit Ty-IV Qtrs				222488
A	Total (Supply & labour) For 06 Nos Ty-IV Qtr				1334928

B: Other electrical requirements for settlement area of quarters

1	Supply of 7 mtrs height hot deep galvanized octagonal pole (single arm)	20	Nos.	9253	185060
2	Excavation of earth, provision of Foundation and erection of hot deep galvanized octagonal poles with aluminium & red oxide paint	20	Nos.	1581	31620
3	Supply of junction box 300x350x125 mm size material thickness	20	Nos	1600	32000

[Handwritten signature]

	1.5mm with 1 no. 6A HRC fuse with base and 1 no. TPN terminal block stud type suitable for 25 sqmm cable				
4	Fixing & connection of junction boxes	20	Nos	140	2800
5	Supply of LED street light Luminaries 45W complete with all accessories	30	Nos	5139	154170
6	Fixing & connection of street light luminaire supplied above.	20	Nos	138	2760
7	Supply of class A MS pipe/MS clamp for clamping the light fitting at suitable design and size.	10	KG	37	370
8	Trimming of big branches above 15 cm.	20	Nos	342	6840
9	Trimming of small branches dia. Above 5 CM & less than 15 cm.	50	Nos	171	8550
10	Disconnection of existing wiring	40	Nos	577	23080
11	Construction of Cement Concrete foundation containing cement concrete on the proportion 1:3:6 of cement sand & ballst size of 40mm	10	Cum	4232.0	42320
12	Supply of DB containing one TP MCCB 100 Amps as incoming & 2 nos 63 Amps TP MCBs as outgoing complete with neutral bar din rail etc enclosed in a powder painted metallic enclosure	2	Nos	12147	24294
13	Fixing of above DB.	2	Nos	1962	3924
B	Sub-total				517788
	Grand total of complete electrical cost (A+B)				1852716

Schedule 4: Electrical portion of works "Construction of 05 units Type-II and 04 units Type-III quarter, 02 units Type-IV quarters on replacement ground of old and dilapidated quarters under jurisdiction of ADEN/Settl-II/BSP"

SN	Description of Items	Qty.	Unit	Rate	Total
A: Type-II quarters (per qrtr)					
1	Supply of Crosslinked Polyethylene Insulated Armoured Cable 4x16sqmm with Aluminium conductor, suitable for rated voltage at 1100 volts grade, as per IS:7098 (Part 1): 1988 latest.	100	Mtrs.	351	35100
2	Laying of cable of lower size (upto 4x35 Sq. mm) in Polythene (HDPE) pipe without digging of earth dressing of land including supply of HDPE pipe & all materials. [HDPE pipe 50 mm Diameter, PN 6 or above, conforming to IS 4984: 2016 or relevant IS standard type: coil/straight as per requirement]	40	Mtrs.	127	5080
3	Trenching/Digging of earth 1 mtr deep for cable laying.	40	Mtrs.	65	2600
4	Laying of cable of in GI pipe including supply of all materials (including tG.I. Pipe & except Cable). With supply of G.I. pipe dia. 50mm thickness min. 2mm	10	Mtrs.	279	2790
5	Laying of cable in open air/concealed in wall with supply of all material.	50	Mtrs.	32	1600
6	Earthing arrangement	1	Nos	3428	3428
7	Supply of electronic KWH meter (energy meter) 5-30 amps AC static 230 volt accuracy class-I	1	Nos	656	656
8	Fixing, connection & commissioning of above supplied	1	Nos	141	141
9	Plug and socket with mcb 25A metal clad box with metal plug and top	3	Nos	1745	5235

[Handwritten signature]
[Handwritten initials]

10	Fixing connection & commissioning of above	3	Nos	174.5	522
11	Supply of SPN Distribution board conforms to IS-13032 DBs are phosphatised and painted with epoxy polyester based powder paint, neutral link, earth terminal & bus-bar single door 6 way	1	Nos	639.93	639
12	Supply of Double pole isolator 40Amp	1	Nos	385	385
13	Supply of MCB SP 6-32 A capacity	4	Nos	153.84	612
14	Fixing connection & commissioning of DB/bus-bar chamber supplied above	1	Nos	29.5	29
15	Supply of 9W LED retrofit lamp B22 holder base with polycarbonate body	4	Nos	141	564
16	Supply of ELCB 32 amps, 2 pole 300 MA sensitivity	1	Nos	1576	1576
17	Fixing of ELCB 32 Amps, 2 pole 300 MA sensitivity	1	Nos	140	140
18	Concealed wiring for the 6 Amps, Light, fan & 5 Amps socket with 1.5 sqmm FRLS copper wire including supply of all materials	32	Points	326	10432
19	Concealed Wiring for 6-16Amps plug points with PVC Pipe and PVC insulated copper conductor 2.5 sq. mm. size with supply of all materials	12	Points	430	5160
20	Concealed Wiring for Sub-circuits	120	Mtrs	162	19440
21	Supply of LED Inverter Batten 20 W 6500 K Tubelight polycarbonate body	2	Nos	796	1592
22	Supply of 20W LED tube light supply voltage 230V 50Hz built in electronic driver	2	Nos	593	1186
23	Supply of Electric Ceiling Fan BLDC Type Sweep Size (mm): 1200, rating: 5star, type of regulator: Electronic/remote	3	Nos	2836	8508
24	Fixing of lights/fans supplied as above with supply of flexible wire to connection the nearest ceiling rose	23	Nos	37	851
25	Supply of ding dong type call bell	1	Nos	91	91
26	Supply of Exhaust fan 300 mm sweep complete with accessories	3	Nos	1649	4947
27	Supply of DP MCB 16 A flush mounting MCB complete with sheet steel enclosure, powder painted for use as main switch	1	Nos	229	229
28	Fixing and connection of MCB DB supplied as above with supply of all material	1	Nos	31	31
29	Concealed wiring for 20 Amps plug points with PVC pipe & PVC insulator copper conductor 4 sq mm size with supply of all material	3	Point	963	2889
30	Supply of ELECTRIC WATER HEATER- GEYSER - Tank Capacity 25 Liter, 5star rated Material of Inner Container: Stainless Steel, Material of Outer Container: ABS, warranty: 3year	1	Nos	10790	10790
31	Fixing of storage type geyser 25litrs capacity	1	Nos	637	637
32	Supply of Mirror/decorative/bracket light 20W	8	Nos	563	4504
	Total (Supply & labour) For 01 unit Ty-II Qtrs				132384
A	Total (Supply & labour) For 05 Nos Ty-II Qtrs				661920
	Type-III quarters (per qtr)				
1	Supply of Crosslinked Polyethylene Insulated Armoured Cable 4x16sqmm with Aluminium conductor, suitable for rated voltage at 1100 volts grade, as per IS: 7098 (Part 1): 1988 latest	100	Mtrs	351	35100
2	Laying of cable of lower size (upto 4x35 Sq. mm) in Polythene (HDPE) pipe without digging of earth dressing of land including supply of HDPE pipe & all materials. [HDPE pipe 50 mm Diameter, PN 6 or above, conforming to IS 4984: 2016 or relevant IS standard type: coil/straight as per	40	Mtrs	127	5080

3	requirement]				
4	Trenching/Digging of earth 1 mtr deep for cable laying	40	Mtrs	65.00	2600
5	Laying of cable of in GI pipe including supply of all materials (including TGI Pipe & except Cable) With supply of GI pipe dia 50mm thickness min. 2mm	10	Mtrs	279	2790
6	Laying of cable in open air/concealed in wall with supply of all material	50	Mtrs	32	1600
7	Earthing arrangement	1	Nos.	3428	3428
8	Supply of electronic KWH meter (energy meter) 5-30 amps AC static 230 volt accuracy class-I	1	Nos.	656	656
9	Fixing, connection & commissioning of above supplied	1	Nos.	141	141
10	Plug and socket with mcb 25A metal clad box with metal plug and top	4	Nos.	1745	6980
11	Fixing connection & commissioning of above	4	Nos.	174	696
12	Supply of SPN Distribution board conforms to IS-13032 DBs are phosphatised and painted with epoxy polyester based powder paint, neutral link earth terminal & bus-bar single door 6 way	1	Nos.	639	639
13	Supply of Double pole isolator 40Amp	1	Nos.	385	385
14	Supply of MCB SP 6-32 A capacity	4	Nos.	153	612
15	Fixing, connection & commissioning of DB/bus-bar chamber supplied above	1	Nos.	29	29
16	Supply of 9W LED retrofit lamp B22 holder base with polycarbonate body	4	Nos.	141	564
17	Supply of ELCB 32 amps. 2 pole 300 MA sensitivity	1	Nos.	1576	1576
18	Fixing of ELCB 32 Amps. 2 pole 300 MA sensitivity	1	Nos.	140	140
19	Concealed wiring for the 6 Amps. Light, fan & 5 Amps socket with 1.5 sqmm. FRLS copper wire including supply of all materials	36	Points	326	11736
20	Concealed Wiring for 6-16Amps plug points with PVC Pipe and PVC insulated copper conductor 2.5 sq. mm. size with supply of all materials	15	Points	430	6450
21	Concealed Wiring for Sub-circuits.	150	Mtrs	162	24300
22	Supply of LED Inverter Batten 20 W 6500 K Tubelight polycarbonate body	3	Nos.	796	2388
23	Supply of 20W LED tube light supply voltage 230V 50Hz built in electronic driver	2	Nos.	593	1186
24	Supply of Electric Ceiling Fan BLDC Type Sweep Size (mm) 1200, rating 5star, type of regulator. Electronic/remote	4	Nos.	2836	11344
25	Fixing of lights/fans supplied as above with supply of flexible wire to connection the nearest ceiling rose.	25	Nos.	37	925
26	Supply of ding dong type call bell.	1	Nos.	91	91
27	Supply of Exhaust fan 300 mm sweep complete with accessories.	3	Nos.	1649	4947
28	Supply of DP MCB 16 A flush mounting MCB complete with sheet steel enclosure powder painted for use as main switch	1	Nos.	229	229
29	Fixing and connection of MCB DB supplied as above with supply of all material	1	Nos.	31	31
30	Concealed wiring for 20 Amps plug points with PVC pipe & PVC insulator copper conductor 4 sq mm size with supply of all material	4	Point	963	3852
	Supply of ELECTRIC WATER HEATER- GEYSER - Tank Capacity 25 Liter. 5star rated Material of Inner Container: Stainless Steel, Material of Outer Container: ABS, warranty: 3year.	2	Nos.	10790	21580

31	Fixing of storage type geyser 25litrs capacity	2	Nos	637	1274
32	Supply of Mirror/decorative/bracket light 20W	8	Nos	563	4504
	Total (Supply & labour) For 01 unit Ty-III Qtrs				157853
B	Total (Supply & labour) For 04 Nos Ty-III Qtr				631412
C	Type-IV quarters (per qtr)				
1	Supply of Crosslinked Polyethylene Insulated Armoured Cable 4x25sqmm with Aluminium conductor, suitable for rated voltage at 1100 volts grade, as per IS 7098 (Part 1) 1988 latest	150	Mtrs	447	67050
2	Laying of cable of lower size (upto 4x35 Sq. mm) in Polythene (HDPE) pipe without digging of earth dressing of land including supply of HDPE pipe & all materials [HDPE pipe 50 mm Diameter, PN 6 or above, conforming to IS 4984 2016 or relevant IS standard type: coil/straight as per requirement]	60	Mtrs	127	7620
3	Trenching/Digging of earth 1 mtr deep for cable laying	40	Mtrs	65 00	2600
4	Laying of cable of in GI pipe including supply of all materials (including tG I. Pipe & except Cable) With supply of G I. pipe dia. 50mm thickness min. 2mm	40	Mtrs	279	11160
5	Laying of cable in open air/concealed in wall with supply of all material	50	Mtrs	32	1600
6	Earthing arrangement	1	Nos	3428	3428
7	Supply of electronic KWH meter (energy meter) 5-30 amps AC static 230 volt accuracy class-I	1	Nos	656	656
8	Fixing, connection & commissioning of above supplied	1	Nos	141	141
9	Plug and socket with mcb 25A metal clad box with metal plug and top	5	Nos	1745	8725
10	Fixing connection & commissioning of above	5	Nos	174	870
11	Supply of SPN Distribution board conforms to IS-13032 DBs are phosphatised and painted with epoxy polyester based powder paint, neutral link, earth terminal & bus-bar single door 8 way	1	Nos	1710	1710
12	Supply of Double pole isolator 40Amp	1	Nos	385	385
13	Supply of MCB SP 6-32 A capacity	4	Nos	153	612
14	Fixing, connection & commissioning of DB/bus-bar chamber supplied above.	1	Nos	29	29
15	Supply of 9W LED retrofit lamp B22 holder base with polycarbonate body	4	Nos	141	564
16	Supply of ELCB 32 amps 2 pole 300 MA sensitivity.	1	Nos	1576	1576
17	Fixing of ELCB 32 Amps 2 pole 300 MA sensitivity.	1	Nos	140	140
18	Concealed wiring for the 6 Amps Light, fan & 5 Amps socket with 1.5 sqmm. FRLS copper wire including supply of all materials	46	Points	326	14996
19	Concealed Wiring for 6-16Amps plug points with PVC Pipe and PVC insulated copper conductor 2.5 sq. mm. size with supply of all materials	17	Points	430	7310
20	Concealed Wiring for Sub-circuits.	170	Mtrs	162	27540
21	Supply of LED Inverter Batten 20 W 6500 K Tubelight polycarbonate body	3	Nos	796	2388
22	Supply of 20W LED tube light supply voltage 230V 50Hz built in electronic driver	3	Nos	593	1779
23	Supply of Electric Ceiling Fan BLDC Type Sweep Size (mm): 1200, rating 5star, type of regulator: Electronic/remote	6	Nos	2836	17016

24	Fixing of lights/fans supplied as above with supply of flexible wire to connection the nearest ceiling rose.	33	Nos.	37	1221
25	Supply of ding dong type call bell	1	Nos.	91	91
26	Supply of Exhaust fan 300 mm sweep complete with accessories	4	Nos.	1649	6596
27	Supply of DP MCB 16 A flush mounting MCB complete with sheet steel enclosure, powder painted for use as main switch.	1	Nos.	229	229
28	Fixing and connection of MCB DB supplied as above with supply of all material	1	Nos.	31	31
29	Concealed wiring for 20 Amps plug points with PVC pipe & PVC insulator copper conductor 4 sq mm size with supply of all material.	5	Point	963	4815
30	Supply of ELECTRIC WATER HEATER- GEYSER - Tank Capacity 25 Liter, 5star rated Material of Inner Container: Stainless Steel, Material of Outer Container: ABS, warranty 3year.	2	Nos.	10790	21580
31	Fixing of storage type geyser 25litrs capacity.	2	Nos.	637	1274
32	Supply of Mirror/decorative/bracket light 20W	12	Nos.	563	6756
	Total (Supply & labour) For 01 unit Ty-IV Qtrs				222488
C	Total (Supply & labour) For 02 Nos Ty-IV Qtr				444976

Other electrical requirements for settlement area of quarters

1	Supply of 7 mtrs height hot deep galvanized octagonal pole (single arm)	10	Nos.	9253	92530
2	Excavation of earth, provision of Foundation and erection of hot deep galvanized octagonal poles with aluminium & red oxide paint	10	Nos.	1581	15810
3	Supply of junction box 300x350x125 mm size material thickness 1.5mm with 1 no. 6A HRC fuse with base and 1 no. TPN terminal block stud type suitable for 25 sqmm cable.	10	Nos.	1600	16000
4	Fixing & connection of junction boxes	10	Nos.	140	1400
5	Supply of LED street light Luminaries 45W complete with all accessories.	20	Nos.	5139	102780
6	Fixing & connection of street light luminaire supplied above	10	Nos.	138	1380
7	Supply of class A MS pipe/MS clamp for clamping the light fitting at suitable design and size.	5	KG	37	185
8	Trimming of big branches above 15 cm.	20	Nos.	342	6840
9	Trimming of small branches dia. Above 5 CM & less than 15 cm.	50	Nos.	171	8550
10	Disconnection of existing wiring.	60	Nos.	577	34620
11	Construction of Cement Concrete foundation containing cement concrete on the proportion 1:3:6 of cement, sand & ballst size of 40mm.	5	Cum	4232.0	21160
12	Supply of DB containing one TP MCCB 100 Amps as incoming & 2 nos 63 Amps, TP MCBs as outgoing complete with neutral bar din rail etc enclosed in a powder painted metallic enclosure	3	Nos.	12147	36441
13	Fixing of above DB.	3	Nos.	1962	5886
D	Total (Supply & labour)				343582
	Grand total of complete electrical cost (A+B+C+D)				2081890

Schedule 5: Electrical portion of work "Provision of 4-Unit New Type-III Quarters in Bilaspur Settlement under Sr.DEN/Settlement/Bilaspur

SN	Description of Items	Qty.	Unit	Rate	Total
	A: Type-III quarters (per qrtr)				

1	Supply of Crosslinked Polyethylene Insulated Armoured Cable 4x16sqmm with Aluminium conductor, suitable for rated voltage at 1100 volts grade, as per IS: 7098 (Part 1): 1988 latest	100	Mtrs	351	35100
2	Laying of cable of lower size (upto 4x35 Sq. mm) in Polythene (HDPE) pipe without digging of earth dressing of land including supply of HDPE pipe & all materials. [HDPE pipe 50 mm Diameter, PN 6 or above, conforming to IS 4984 : 2016 or relevant IS standard type: coil/straight as per requirement]	40	Mtrs	127	5080
3	Trenching/Digging of earth 1 mtr deep for cable laying	40	Mtrs	65	2600
4	Laying of cable of in GI pipe including supply of all materials (including tG I. Pipe & except Cable). With supply of G.I. pipe dia. 50mm thickness min. 2mm	10	Mtrs	279	2790
5	Laying of cable in open air/concealed in wall with supply of all material	50	Mtrs	32	1600
6	Earthing arrangement	1	Nos	3428	3428
7	Supply of electronic KWH meter (energy meter) 5-30 amps AC static 230 volt accuracy class-I	1	Nos	656	656
8	Fixing, connection & commissioning of above supplied	1	Nos	141	141
9	Plug and socket with mcb 25A metal clad box with metal plug and top	4	Nos	1745	6980
10	Fixing connection & commissioning of above	4	Nos	174	696
11	Supply of SPN Distribution board conforms to IS-13032 DBs are phosphatised and painted with epoxy polyester based powder paint, neutral link, earth terminal & bus-bar single door 6 way	1	Nos	639	639
12	Supply of Double pole isolator 40Amp	1	Nos	385	385
13	Supply of MCB SP 6-32 A capacity.	4	Nos	153	612
14	Fixing, connection & commissioning of DB/bus-bar chamber supplied above	1	Nos	29	29
15	Supply of 9W LED retrofit lamp B22 holder base with polycarbonate body	4	Nos	141	564
16	Supply of ELCB 32 amps. 2 pole 300 MA sensitivity.	1	Nos	1576	1576
17	Fixing of ELCB 32 Amps. 2 pole 300 MA sensitivity.	1	Nos	140	140
18	Concealed wiring for the 6 Amps. Light, fan & 5 Amps socket with 1.5 sqmm. FRLS copper wire including supply of all materials	36	Points	326	11736
19	Concealed Wiring for 6-16Amps plug points with PVC Pipe and PVC insulated copper conductor 2.5 sq. mm. size with supply of all materials	15	Points	430	6450
20	Concealed Wiring for Sub-circuits.	150	Mtrs	162	24300
21	Supply of LED Inverter Batten 20 W 6500 K Tubelight polycarbonate body	3	Nos	796	2388
22	Supply of 20W LED tube light supply voltage 230V 50Hz built in electronic driver	2	Nos	593	1186
23	Supply of Electric Ceiling Fan BLDC Type Sweep Size (mm): 1200, rating: 5star, type of regulator: Electronic/remote	4	Nos	2836	11344
24	Fixing of lights/fans supplied as above with supply of flexible wire to connection the nearest ceiling rose.	25	Nos	37	925
25	Supply of ding dong type call bell	1	Nos	91	91
26	Supply of Exhaust fan 300 mm sweep complete with accessories	3	Nos	1649	4947

27	Supply of DP MCB 16 A flush mounting MCB complete with sheet steel enclosure, powder painted for use as main switch.	1	Nos	229	229
28	Fixing and connection of MCB DB supplied as above with supply of all material	1	Nos	31	31
29	Concealed wiring for 20 Amps plug points with PVC pipe & PVC insulator copper conductor 4 sq mm size with supply of all material.	4	Point	963	3852
30	Supply of ELECTRIC WATER HEATER- GEYSER - Tank Capacity 25 Liter, 5star rated Material of Inner Container, Stainless Steel, Material of Outer Container, ABS, warranty, 3year.	1	Nos	10790	10790
31	Fixing of storage type geyser 25litrs capacity	1	Nos	637	637
32	Supply of Mirror/decorative/bracket light 20W	8	Nos	563	4504
	Total (Supply & labour) For 01 unit Ty-III Qtrs				146426
A	Total (Supply & labour) For 04 Nos Ty-III Qtrs				585704
Other electrical requirements for settlement area of quarters, boundary wall rain water harvesting and other facilities					
1	Supply of Submersible multistage pump capacity 5H.P., 3 phase Pump for 150 mm Dia bore well suitable for head $\geq 64m$, rating: 5star	1	Nos	30478	30478
2	Supply of Submersible openwell pump capacity 5H.P., 3 phase Pump for 300 mm Dia bore well suitable for head $\geq 24m$, rating: 5star	1	Nos	24800	24800
3	Supply of 5 H P SEMI AUTOMATIC STAR DELTA starter panel	2	Nos	6500	13000
4	Installation of pumps supplied	2	Nos	1201	2402
5	Supply of Submersible cable 3 core PVC insulated Flat with copper conductor 4 sq mm size as per details	200	Mtrs	90	18000
6	Supply of PVC insulated Galvanised Steel wire rope 8 mm size as per details	200	Mtrs	228	45600
7	Supply DB containing one TP MCCB 100 Amps as incoming & 2 nos. 63 Amps TP MCBs as outgoing complete with neutral bar din rail etc enclosed in a powder painted metallic enclosure.	1	Nos	12147	12147
8	Fixing, connection & commissioning of DB supplied as above.	1	Nos	2040	2040
9	Supply of TPN Distribution board conforms to IS-13032 DBs are phosphatised and painted with epoxy polyester based powder paint, neutral link, earth terminal & bus-bar double door 12 way.	2	Nos	2713	5426
10	Fixing and connection of MCB DB supplied with supply of all material.	2	Nos	34	68
11	Supply of MCB SP 6-32 A capacity.	24	Nos	153	3672
12	Supply of TPN MCB 63 A capacity (C-curve)	2	Nos	1832	3664
13	Supply of 7 mtrs height hot deep galvanized octagonal pole (single arm)	6	Nos	9253	55518
14	Excavation of earth, provision of Foundation and erection of hot deep galvanized octagonal poles with aluminium & red oxide paint	6	Nos	1581	9486
15	Supply of junction box 300x350x125 mm size material thickness 1.5mm with 1 no. 6A HRC fuse with base and 1 no. TPN terminal block stud type suitable for 25 sqmm cable.	6	Nos	1600	9600
16	Fixing & connection of junction boxes	6	Nos	140	840
17	Supply of LED street light Luminaries 45W complete with all accessories	6	Nos	5139	30834
18	Fixing & connection of street light luminaire supplied above.	6	Nos	138	828

19	Supply of class A MS pipe/MS clamp for clamping the light fitting at suitable design and size.	6	KG	37	222
20	Construction of Cement Concrete foundation containing cement concrete on the proportion 1:3:6 of cement.sand & ballist size of 40mm.	6	Cum	4232 0	25392
21	Supply of DB containing one TP MCCB 100 Amps as incoming & 2 nos 63 Amps TP MCBs as outgoing complete with neutral bar din rail etc enclosed in a powder painted metallic enclosure	1	Nos	12147	12147
22	Fixing of above DB.	1	Nos	1962	1962
23	Erection & painting of departmentally supplied rail poles (13-8 Mtrs long)	3	MT	2846	8538
24	Cutting of Rail poles	2	Nos	505	1010
25	Transportation of rail pole from PWI godown/way site station to Work site	1	per Trip	18020	18019 5
26	Supply of Stays & Guys.	4	Nos	445	1780
27	Erection of Stays & Guys.	4	Nos	116	464
28	Supply & fixing of C.I. clamp for top earth wire with all accessories like MS flat iron 50X8" size , nut - bolt, washer, reel insulator etc.	9	Nos	191	1719
29	Supply of G.I. wire 8 SWG size.	30	KG	40	1200
30	Drawing of earth wire.	30	KG	5	150
31	Supply of LT 5 pin vertical bracket for single circuit including back clamp, nut-bolt and washer.	3	Nos	1291	3873
32	Fixing of LT 5 pin vertical bracket including back clamp, nut-bolt and washers.	3	Nos	28	84
33	Supply of LT insulator SHACKLE type 90X75 mm.	36	Nos	102	3672
34	Supply of G.I. Bolt Nut 4.5 inch x 1/2 inch with G. I. washers for fixing of LT insulators.	36	Nos	289	10404
35	Fixing of SHACKLE type insulator after release of old insulator if required.	36	Nos	74	2664
36	Supply and fixing of vertical guarding with reel insulator	3	Nos	150	450
37	Supply of Aluminium conductor galvanized steel wire 50 sqmm reinforced size 6/3 35 MM ALUMN+1/3 35MM STEEL.	3	KM	37161	111483
38	Drawl of 5conductor LT line using ACSR conductor.	200	MTRS	6.000	1200
39	Supply of LT Pin insulator	36	Nos	278	10008
40	Erection of LT pin insulator	36	Nos	27	972
33	Supply of LT insulator SHACKLE type 90X75 mm.	36	Nos	102	3672
34	Supply of G.I. Bolt Nut 4.5 inch x 1/2 inch with G. I. washers for fixing of LT insulators.	36	Nos	289	10404
35	Fixing of SHACKLE type insulator after release of old insulator if required	36	Nos	74	2664
36	Supply and fixing of vertical guarding with reel insulator	3	Nos	150	450
37	Supply of Aluminium conductor galvanized steel wire 50 sqmm reinforced size 6/3 35 MM ALUMN+1/3 35MM STEEL.	3	KM	37161	111483
38	Drawl of 5conductor LT line using ACSR conductor.	200	MTRS	6.000	1200
39	Supply of LT Pin insulator	36	Nos	278	10008
40	Erection of LT pin insulator	36	Nos	27	972
					157853
B	Total (Supply & labour)				485816

Grand total (A+B)

SCOPE OF WORK & DETAILED TECHNICAL SPECIFICATIONS

SCHEDULE-1

Electrical portion of work "Provision of 2-Unit Type-II Quarters against replacement account under Sr.DEN/Settlement/Bilaspur

A: Type-II quarters (per qrtr)

Item No.	Description of Items	Detailed technical specification/ Scope of work of items appearing in schedule- 1
1	Supply of Crosslinked Polyethylene Insulated Armoured Cable 4x16sqmm with Aluminium conductor, suitable for rated voltage at 1100 volts grade, as per IS 7098 (Part 1): 1988 latest.	Supply of Crosslinked Polyethylene Insulated Armoured Cable 4x16sqmm with Aluminium conductor, suitable for rated voltage at 1100 volts grade, as per IS:7098 (Part 1): 1988 latest. Make: Polycab, Havells, KEI, Finolex, RR Kabel, Ultracab, Vishal Cables, or equivalent makes conforming to BIS standards shall be accepted.
2	Laying of cable of lower size (upto 4x35 Sq. mm) in Polythene (HDPE) pipe without digging of earth dressing of land including supply of HDPE pipe & all materials [HDPE pipe 50 mm Diameter, PN 6 or above, conforming to IS 4984 : 2016 or relevant IS standard type: coil/straight as per requirement]	The cable of lower size upto 4x35 sq.mm (supplied by Railway) shall be laid in cable trenches along the road/track/ yard without digging in all sorts of soil with/without HDPE Pipe including supply of HDPE pipe & all materials. [HDPE pipe 50 mm Diameter, PN 6 or above, conforming to IS 4984: 2016 or relevant IS standard type: coil/straight as per requirement] as per site conditions requirements. The cable laying shall be done and back filling and properly dressing of land there after laying of cable with cement concrete/ Bitumen properly to the original condition. More than one cable be laid on the same trench if required. The path and type of cable to be laid on that path shall be decided by authorized representative of Sr.DEE/ RS&G/BSP* at site. If anything, get damaged/partially damaged the same shall be repaired as far as possible to original by the contractor. Cable shall be supplied by Railway. Cable route marker shall be provided at appropriate distance on cable route by contractor after cable laying.
3	Trenching/Digging of earth 1 mtr deep for cable laying	The work consists of Trenching/Digging of earth 1mtr deep for cable laying. The trenching /digging shall be done in all sort of soil as per the directive of the authorized representative of Sr.DEE (RS&G)/BSP. If anything gets damaged/partially damaged during trenching /digging the same shall be repaired as far as possible to original. During course of digging if depth of 1 meter is not feasible due to technical reason then the depth may be reduced & payment will be done on pro rata basis
4	Laying of cable of in GI pipe including	This item includes Laying of cable of in GI pipe including

	supply of all materials (including tG.I Pipe & except Cable) With supply of G.I. pipe dia. 50mm thickness min. 2mm	supply of all materials. With supply of G.I. pipe dia. 50mm thickness min. 2 mm. The Cable laying across the road /track/yard should be done minimum one-meter-deep trench only through GI pipe of suitable diameter & wall thickness. Each cable should be laid through separate GI pipe. If any road/platform is cut for trenching, the same shall be restored after laying of cable with cement, bitumen properly to the original condition. GI pipe shall be used. All supporting materials shall be supplied by the contractor except cable. For underground cable laying cable route marker at appropriate distance shall be provided by contractor after cable laying. The work shall be carried out according to relevant IS std. and as per directive of authorized representative of Sr. DEE(RS&G)/BSP. If anything gets damaged/partially damaged the same shall be repaired as far as possible to original. The depth of cable trench may be varying as per site conditions. During course of digging if depth of 1 meter is not feasible due to technical reason then the depth may be reduced & payment will be done on pro rata basis.
5	Laying of cable in open air/concealed in wall with supply of all material.	Laying of cables (supplied by Railway) in open air/ concealed, should be supported with G.I. wire if laid in between two structure (Pole to Pole), such that there should not be any mechanical load on cable. Laying of cable should be supported with proper size of 'U. clamp & nut bolts. 1mtr apart, if laid with support of walls. Laying of cable should be properly supported if laid under MS structure/Shelter etc. Laying of cable in open air consists of terminating it to the DB fixed on a SST Poles/Mast or any other supporting structure with proper lugs and glands. The cable shall be laid through class A GI pipes (supplied by Railway) of 40mm dia. or other size, 3 Mtr./ 2 mm long on the vertical runs over the pole/walls. The cable & the pipe shall be properly clamped to the pole/walls with clamps made out of MS flat iron of 25mm x 5mm and painted to be supplied by the contractor. All materials shall be supplied by the contractor. The work shall be done as per the directive of the authorized representative of Sr. DEE (RS&G)/BSP.
6	Earthing arrangement	Supply & Laying of earth cone with supply of all materials including GI strip. The earth cone supplied shall be fabricated from Class-B. G.I. pipe conforming to IS: 3043 - 1987 (Reaffirmed 2006) amended up to date or relevant IS standard and as per CEE/GRC drawing No. CEE/A4/P-105. The Earth pipe should have outer dia. 60.2 mm, inner dia. 54.4 mm & thickness 2.9 mm. (aprx.) (Make for GI pipe: SAIL, JINDAL, Surya, TATA, Prakash, PSST or equivalent makes conforming to BIS standards shall be accepted.). The Earth Cone shall be erected as per CEE/GRC's drawing No. CEE/G/A3/P-134 including supply of all materials. The Earth cone shall be connected by the contractor to the DBs / Poles as described in the erection/installation of the respective materials with GI Strip of size 25 mm x 3 mm (minimum) (or as specified) with hot-dip galvanization of uniform coating. Make for GI strip: SAIL/Jindal/Surya/TATA/Prakash/PSST or equivalent approved

		make. The location for earth cones shall be indicated by the authorized representative of SR.DEE (RS&G)/BSP. Earth values after meggering to be written on the earth pit. M.S. Cover plate 3 mm thick/concrete to be provided on earth pit. All joints shall be properly cleaned. The work shall be carried out according to relevant IS std. and as per directive of authorized representative of Sr.DEE(RS&G)/BSP.
7	Supply of electronic KWH meter (energy meter) 5-30 amps AC static 230 volt accuracy class-I	The price shall cover Supply of single phase AC static electronic kWh energy meter, current rating 5-30 Amps, operating voltage 230V $\pm 20\%$, accuracy Class-1, conforming to IS 13779 / IEC standards, LCD display with backlight, LED indicators for energy pulse, tamper-proof polycarbonate enclosure, suitable for wall mounting, with facility for recording tamper events, complete in all respects. Makes: HPL, Secure Meters, Genus Power, Schneider Electric, L&T Electrical & Automation, C&S ELECTRIC or equivalent makes conforming to BIS standards shall be accepted
8	Fixing, connection & commissioning of above supplied	The cost covers fixing, connection and commissioning of single phase electronic kWh energy meter (supplied against item no. 7 of schedule 1A) including mounting on meter board/panel, making proper electrical terminations with suitable lugs, tightening of connections, providing necessary hardware, testing for proper functioning, sealing as per standard practice and handing over the installation in fully operational condition, complete in all respects. This also includes transportation of the material at site.
9	Plug and socket with mcb 25A metal clad box with metal plug and top	Supply of AC starter unit suitable for outdoor/indoor use, comprising 25A/16A, 230V, single-phase industrial type metal clad/polycarbonate plug and socket, complete with 16A/25A SP MCB of reputed make (such as Anchor/Havells/Schneider or equivalent), housed in IP55/IP65 rated weatherproof enclosure, with all necessary accessories, conforming to relevant IS/IEC standards and as per site requirements.
10	Fixing connection & commissioning of above	Installation/fixing of AC starter unit (supplied against item no. 9 of schedule 1A) including mounting on wall/structure, cable termination with glands/lugs, earthing, dressing of wiring, and testing for proper operation, complete as per the directive of the authorized representative of Sr.DEE (RS&G)/BSP
11	Supply of SPN Distribution board conforms to IS-13032 DBs are phosphatised and painted with epoxy polyester based powder paint, neutral link, earth terminal & bus-bar single door 6 way.	The price shall cover supply of SPN Distribution Board, 240V, single-phase, single-door, 6-way type, conforming to IS:13032 and IS:8623 (Part 1), fabricated from CRCA sheet steel duly phosphatised and powder coated with epoxy polyester paint, complete with neutral link, earth terminal, tinned copper bus-bar, and provision for incoming and outgoing MCBs, suitable for flush or surface mounting, complete in all respects as per directive of the authorized representative of Sr.DEE (RS&G)/BSP.

		<p>Make: – Havells, Legrand, Anchor, BCH, L&T, Finolex, Wipro, Schneider Electric, ABB, IndoAsian, Hager or equivalent makes conforming to BIS standards shall be accepted</p>
12	Supply of Double pole isolator 40Amp	<p>The price shall cover supply of Double pole isolator 40Amp Conformity of the specification: as per IS/IEC IS/IEC 60947-3 or latest</p> <p>No. of pole: 2</p> <p>Rated voltage (in Volts): 240 V, AC</p> <p>Rated Current (in Ampere): 40</p> <p>Instantaneous tripping current type: C</p> <p>Rated Short circuit capacity (in Ampere): 10000</p> <p>Make: Siemens, Schneider, Havells, GE, Standard, Indoasian, Control & Switchgear, Legrand, HPL, Hager, L&T/ Lauritz Knudsen, ABB, Anchor by Panasonic, Polycab or equivalent makes conforming to BIS standards shall be accepted.</p>
13	Supply of MCB SP 6-32 A capacity	<p>Supply of Miniature Circuit Breaker (MCB), Single Pole (SP), rated current 6A to 32A, suitable for 240V, single-phase, 50 Hz AC supply, with rated breaking capacity not less than 10 kA at 230V, conforming to IS/IEC 60898-1 (latest).</p> <p>Make: Siemens, Schneider, Havells, Standard, GE, Standard, Indoasian, Control & Switchgear, Legrand, Hager, L&T (Lauritz Knudsen), Sigma, Eaton, ABB or equivalent makes conforming to BIS standards shall be accepted.</p>
14	Fixing, connection & commissioning of DB/bus-bar chamber supplied above.	<p>The DB supplied (against item No: 11 of Schedule 1A) will be fixed with help of fixers supplied by the tenderer. The fixers must be painted with corrosion resistant paint & should have thickness at least 5 mm. & 30 mm wide, suitable length & enough strength to withstand the weight of the DBs for a long period. The nut bolts used for fixing should have 10 mm dia or as per requirement & be strong enough to withstand the load of the DB. The work include termination of the incoming & outgoing cables inside the DB with proper size of lugs supplied & fixed by the contractor. The crimping of lugs must be done using a crimping tool with perfect finish. All the material & labor required to complete the above work shall be supplied by the contractor & as per the directive of the authorized representative of Sr.DEE (RS&G)/BSP</p>
15	Supply of 9W LED retrofit lamp B22 holder base with polycarbonate body.	<p>The price shall cover supply of 9W LED Retrofit Lamp, B22 holder type, rated for 220-240V AC, 50Hz, with polycarbonate diffuser housing and aluminium heat sink, minimum efficacy ≥ 100 lm/W, PF ≥ 0.9, THD $\leq 20\%$, and average life $\geq 25,000$ burning hours</p> <p>Make – Philips, Osram, Havells, Wipro, Syska, Orelva, Orient, Surya, Halonix or equivalent makes conforming to BIS standards shall be accepted.</p>

16	Supply of ELCB 32 amps. 2 pole 300 MA sensitivity.	<p>The price shall cover supply of RCCB/ELCB (Residual Current Circuit Breaker/Earth Leakage Circuit Breaker), 4 Pole, rated current 32 Amps, suitable for 415V, 3-phase, 50 Hz AC supply, with rated residual current sensitivity of 300 mA, conforming to IS/IEC 61008-1 or (latest). The RCCB shall be of current-operated type, capable of providing protection against earth leakage faults.</p> <p>Make: Siemens, Schneider, Havells, Standard, Crabtree, GE, Indoasian, Control & Switchgear, Legrand, Hager, L&T, Eaton, ABB or equivalent makes conforming to BIS standards shall be accepted.</p>
17	Fixing of ELCB 32 Amps. 2 pole 300 MA sensitivity.	<p>The ELCBs/RCCB (supplied against item nos. 16 of schedule-1A) shall be fixed at the location identified by authorized representative of Sr. DEE(RS&G)/BSP by the use of suitable bolts etc. supplied by the contractor. The connection & testing shall be done by contractor. All wires shall be connected with the use of proper lugs and proper connection with earth continuity conductor of 18 SWG PVC copper wire shall be made as per directives of authorized representative of Sr.DEE(RS&G)/BSP.</p>
18	Concealed wiring for the 6 Amps. Light, fan & 5 Amps socket with 1.5 sqmm. FRLS copper wire including supply of all materials	<p>The Concealed wiring for lights & fan, 5Amps socket & 6A plug points shall be through PVC Pipe, heavy type ISI marked of size 20/25/32 mm. The wiring shall be done with PVC insulated stranded copper conductor 1.5 sq. mm 650/1100 volt grade FRLS type ISI marked as per directives of authorized representative of Sr.DEE (RS&G)/BSP. The wiring through walls shall pass through PVC pipes 20/25/32 mm size & heavy type ISI marked. Switch socket and board shall be supplied by the contractor. An earth continuity conductor of 18 SWG PVC copper wire shall be run all along the piping and shall be connected. For convenience, wiring for light & fan points shall be done through common PVC pipe & Earthing should be provided in earth point of 3/5 pin plugpoint.</p> <p><i>Make for PVC pipe- Polycab/Anchor/Finolex/Bajaj/Precision/Richa</i> or equivalent makes conforming to BIS standards shall be accepted.</p> <p><i>Make for Switch/Socket - Havells brands/L&T/Legrand/Anchor/ROMA/HPL</i>, or equivalent makes conforming to BIS standards shall be accepted.</p> <p><i>Make for copper</i> or equivalent makes conforming to BIS standards shall be accepted. <i>wire: Polycab/Havells/KEI/Finolex/RR/Kabel/Ultracab</i> or equivalent makes conforming to BIS standards shall be accepted.</p>
19	Concealed Wiring for 6-16Amps plug points with PVC Pipe and PVC insulated copper conductor 2.5 sq. mm. size with supply of all materials.	<p>The concealed wiring for 6-16 A plug points, individual or combined switch, socket & fuse shall be through PVC pipe 20/25/32mm size/dia as required. PVC pipe shall be heavy type ISI marked with provision of suitable Tees, bends, elbows, junction boxes as required. The wiring shall be</p>

8

Bhaskar

	<p>with PVC insulated stranded individual copper conductor 2.5 sq.mm for one socket, 4 Sq. mm if 2 to 3 sockets, 6 Sq. mm if 4 to 5 sockets in a board. The wires should be 650/1100 volt grade FRLS type of ISI marked with additional properties of FRLS. A separate circuit should be drawn from the main board for the plug point. An earth continuity conductor of 18 SWG PVC copper shall be run from the main board to the plug socket and connected to the earth terminal of the plug socket. Wherever convenient, wiring for light, fan & Plug points shall be done through common pipe. All materials shall be supplied by the contractor.</p> <p>The work shall be done as per the directive of the authorized representative of Sr.DEE (RS&G)/BSP.</p> <p>Make for PVC pipe- Polycab/Anchor/Finolex/Bajaj/Precision /Richa or equivalent makes conforming to BIS standards shall be accepted.</p> <p>Make for Switch/Socket - Havells brands/L&T/ Legrand/Anchor/ ROMA/HPL, or equivalent makes conforming to BIS standards shall be accepted.</p> <p>Make for copper wire:Polycab/Havells/KEI/Finolex/RR Kabel/Ultracab, or equivalent makes conforming to BIS standards shall be accepted.</p>
20	<p>Concealed Wiring for Sub-circuits.</p> <p>The Concealed/Casing capping wiring from main switch boards to distribution switch boards & from one room to another room, from DB supplied & fixed up to the main board is referred to as sub-circuit. The sub-circuits shall be run through Casing capping /PVC Pipe of different size as required. Casing capping /PVC Pipe shall be heavy type ISI marked (Make- Polycab/Anchor/Finolex/Bajaj/Precision/ Richa or equivalent makes conforming to BIS standards shall be accepted.). The wiring through walls shall pass through Casing capping /PVC pipes. PVC insulated copper stranded conductor 6.0 sq. mm size, 650 – 1100 volts 7 grade of ISI marked FRLS type shall be used. A number of sub-circuits may be run through one Casing capping /PVC pipe for convenience of wiring. One sub- circuit shall consist of two wires one phase & one neutral. Rate for one meter length of the sub circuit shall be taken 01 meter of phase wire &01 meter neutral wire. Suitable Tees, bends, elbows, junction boxes etc for both surface & concealed wiring as required shall be supplied & fixed by the contractor. In no case the PVC pipe shall be bend to change the direction of wiring .An earth continuity conductor of 1mm PVC copper wire shall be run along the sub-circuit wires & shall be connected to DBs.</p>

		<p>Make for copper wire: Polycab/Havells/KEI/Finolex/RR Kabel/Ultracab, or equivalent makes conforming to BIS standards shall be accepted.</p>
21	Supply of LED Inverter Batten 20 W 6500 K Tubelight polycarbonate body	<p>Supply of LED Inverter Batten 20 W, 6500 K (Tube light type) (+/-500 K) with high-efficiency SMD LEDs, polycarbonate body and diffuser, minimum IP65 protection, minimum efficacy ≥ 100 lm/W, CRI ≥ 80, operating voltage 140-270 V AC, with inbuilt rechargeable battery for minimum 3 hours backup during power failure, surge protection ≥ 2.5 kV, power factor ≥ 0.9, THD $\leq 10\%$, complete with mounting accessories. The product shall be BIS/ISI marked and conform to relevant IS standards. Report to be mandatory submitted along with the offer LM 79& Test report in respect of the luminaries test certificates should be from Central Government LAB /NABL/ILAC accredited manufacturer/LAB. LM 80 Test report in respect of the LED used in the offered luminaries should be from Central Government LAB /NABL/ILAC accredited manufacturer/LAB.</p> <p>Make – Philips ,Osram ,Havells ,Wipro, Syska ,Oreva ,Polycab, Orient , Surya, Halonix or equivalent makes conforming to BIS standards shall be accepted.</p>
22	Supply of 20W LED tube light supply voltage 230V 50Hz built in electronic driver	<p>Supply of 20W LED tube light fittings complete with all accessories. Supply voltage 230V 50Hz built in electronic driver. Detailed technical specification is enclosed as Annexure-I</p> <p>Make – Philips ,Osram ,Havells ,Wipro, Syska ,Oreva ,Polycab, Orient , Surya, Halonix, or equivalent makes conforming to BIS standards shall be accepted.</p>
23	Supply of Electric Ceiling Fan BLDC Type Sweep Size (mm):1200, rating: 5star, type of regulator: Electronic/remote	<p>Supply of Electric Ceiling Fan BLDC Type Sweep Size (mm):1200, rating: 5 star, type of regulator: Electronic/remote, with 5 year warranty.</p> <p>Make: Khaitan, Havells, Crompton Greaves, Usha, Philips ,Halonix, Polycab, bajaj or equivalent makes conforming to BIS standards shall be accepted.</p>
24	Fixing of lights/fans supplied as above with supply of flexible wire to connection the nearest ceiling rose.	<p>The inverter batten, tubelight, ceiling fan, exhaust fan, call bell & other LED light (supplied against item no. 15, 21, 22, 23, 25, 26, 32 of schedule 1A) shall be fixed at location mentioned by Sr. DEE (RS&G) Bilaspur 's authorized representative at site with use of proper size of P.K. screws & PVC sleeves shall be connected to supply through PVC pipe/PVC casing capping wiring piercing across the wall. The fitting shall thus be connected to the nearest ceiling rose by the use of 0.75 sq.mm. FRLS flexible wire. The fan regulators shall also be fitted on the switch board. An earth continuity conductor of 18 SWG PVC copper wire shall be run all along the piping and shall be connected to the down rod of the fan. Make for Ceiling</p>

		Rose- Polycab/Anchor/Panasonic/Finox/ Bajaj / Precision /Richa or equivalent makes conforming to BIS standards shall be accepted . Make for Switch/Socket/modular board- Havells brands/L&T/ Anchor/ Legrand/ ROMA/HPL. Or equivalent makes conforming to BIS standards shall be accepted Make for copper wire: Polycab/Havells/KEI/Finox/RR Kabel/Ultracab or equivalent makes conforming to BIS standards shall be accepted
25	Supply of ding dong type call bell.	The ding dong call bell shall be suitable for use with 220 volt .50 Hz. AC supply , one bell push shall be supplied along with the ding dong bell. Make: Anchor Roma, Legrand, GM Modular.Orient or equivalent makes conforming to BIS standards shall be accepted
26	Supply of Exhaust fan 300 mm sweep complete with accessories.	Supply of Exhaust Fan non-Capacitor Type Sweep Size (mm):300, No.of pole: 4, Insulation of material class: B or better Make: Khaitan , Havells, Crompton Greaves, Usha, Philips . Polycab or equivalent makes conforming to BIS standards shall be accepted. Warranty period -2 yr
27	Supply of DP MCB 16 A flush mounting MCB complete with sheet steel enclosure , powder painted for use as main switch.	Supply of Miniature Circuit Breaker (MCB) DP 16 Amps penta flush mounting with sheet metal enclosure powder painted for use as main switch with ratings 250 Volts AC 50 Hz with breaking capacity 10 KA as per IS 8828-1996 IEC-60898-1 (To be furnished by manufacturer) having facilities for termination of Aluminum cable, fixing arrangement for mounting on steel/DIN rail. Make: Siemens,Schneider, Havells, Standard, Crabtree, GE, Standard, Indoasian, Control & Switchgear, Legrand, Hager, L&T, Eaton or equivalent makes conforming to BIS standards shall be accepted.
28	Fixing and connection of MCB DB supplied as above with supply of all material.	The MCB DB supplied (supplied against item no. 27 of Schedule-1A) shall be fixed at the location identified by site engineer by the use of 04 nos. bolts size 100mmx6mm supplied by the contractor. The connection & testing shall be done by contractor. All wires shall be connected with the use of copper lugs & clamping kits.
29	Concealed wiring for 20 Amps plug points with PVC pipe & PVC insulator copper conductor 4 sq mm size with supply of all material.	The concealed wiring for 20A plug points, shall be through PVC pipe of suitable size as required . PVC pipe shall be heavy type ISI marked . The wiring shall be with PVC insulated stranded individual copper conductor 4 sq. mm. The wires should be 650/1100 volt grade FRLS type of ISI marked, conforming to IS-694. A separate circuit should be drawn from the outgoing of a 20Amps F.T. fuse provided on the main board for the plug point. Anearth continuity conductor of 18 SWG PVC copper shall be run from the main board to the plug socket and connected to the earth terminal of the plug socket. Suitable Tees, bends, elbows, junctionboxes as required shall be supplied and fixed by the contractor. Wherever required, wiring for light, fan

		<p>& Plug points shall be done through common pipe. All materials shall be supplied by the contractor. In no case the PVC pipe shall be bent to change the direction of wiring. The work shall be done as per the directive of the authorized representative of Sr.DEE (RS&G)/BSP.</p> <p>Make for PVC pipe- Polycab/Anchor/Finox/Bajaj/Precision/Richa or equivalent makes conforming to BIS standards shall be accepted</p> <p>Make for Switch/Socket - Havells brands/L&T/ Legrand/Anchor/ROMA/HPL or equivalent makes conforming to BIS standards shall be accepted</p> <p>Make for copper wire: Polycab/Havells/KEI/Finox/RR Kabel/Ultracab or equivalent makes conforming to BIS standards shall be accepted</p>
30	Supply of ELECTRIC WATER HEATER-GEYSER - Tank Capacity 25 Liter, 5star rated Material of Inner Container Stainless Steel, Material of Outer Container ABS, warranty: 3year.	<p>The cost covers supply of ELECTRIC WATER HEATER-GEYSER - Tank Capacity 25 Liter, 5star rated Material of Inner Container: Stainless Steel, Material of Outer Container: ABS, warranty: 3year. It should have, thermostat, indicating lamp, thermal cut out, drain plug, provision for vent pipe/pressure relief valve, non return valve & other accessories.</p> <p>Make- Orient, kenstar, Bajaj, Usha, Havells or equivalent makes conforming to BIS standards shall be accepted</p>
31	Fixing of storage type geyser 25litrs capacity	<p>Fixing, installation and connection of 25-litre storage type electric geyser (supplied against item no. 30 of Schedule-1A) including wall mounting with suitable brackets/anchor fasteners, making plumbing and electrical connections with approved materials, testing for proper operation and ensuring leak-free performance, complete in all respects.</p>
32	Supply of Mirror/decorative/bracket light 20W	<p>The cost covers Supply of 20W Mirror / Decorative / Bracket type LED light fitting (as per requirement), Color Temperature 6500K (+/-500 K), System Efficacy ≥ 100 lm/W, Power Factor ≥ 0.95, CRI ≥ 80, THD $\leq 10\%$, Input Voltage 140V-270V AC, 50Hz, with inbuilt electronic driver, high-efficiency LED module, minimum IP20 protection, polycarbonate/metal body, warm white / cool white light as required, complete with all mounting accessories, conforming to relevant IS standards.</p> <p>Make - Philips, Osram, Havells, Wipro, Oreva, Polycab, Orient, Surya, Halonix, Syska or equivalent makes conforming to BIS standards shall be accepted</p>
B: Other electrical requirements for settlement area of quarters, boundary wall rain water harvesting and other facilities		
1	Supply DB containing one TP MCCB 100 Amps as incoming & 2 nos. 63 Amps TP MCBs as outgoing complete with neutral bar din rail etc enclosed in a powder painted metallic enclosure.	<p>Supply of DB with enclosure made out of CRCA steel sheet 1.2 mm thick mounting plate made using 2 mm thick CRCA sheet steel, cable gland plate 2 mm thick provided at the bottom, Cam locking arrangement, Single door, pole</p>

8

K. S. K.

		<p>mounting bracket supplied separately containing one 100 Amps. TP MCCB breaking capacity 25 KA as incoming & 2 nos. TP MCB 63 Amps breaking capacity 10 KA. The DB should have suitable dimension to carry above items. The DB shall contain cable entry holes for cables. The DB shall also contain the cable terminal links, neutral link & earth bar.</p> <p>Make for MCB/MCCB: Siemens, Schneider, Havells, GE, Standard, Indoasian, Control & Switchgear, Legrand, HPL, Hager, L&T or equivalent makes conforming to BIS standards shall be accepted.</p>
2	Fixing connection & commissioning of DB supplied as above.	<p>The DB (supplied under item no. 1 of Schedule-1B) shall be fixed as per directive of authorized representative of Sr.DEE/RS&G/BSP. The incoming cable & outgoing cables shall be connected to the terminals & from the terminals to the incoming of the MCCB/MCBs. The material & labour required for fixing all above items shall be supplied by the contractor. The method of fixing & cable termination shall be done as per the directive of the authorized representative of SR.DEE (RS&G)/BSP.</p> <p>Make for copper wire: Polycab/Havells/KEI Finolex/RR Kabel/Ultracab or equivalent makes conforming to BIS standards shall be accepted.</p>
3	Supply of TPN Distribution board confirms to IS-13032 DBs are phosphatised and painted with epoxy polyester based powder paint, neutral link, earth terminal & bus-bar double door 12 way.	<p>Supply of TPN Vertical Distribution Board double door 12 way phosphatised and painted with epoxy polyester based powder paint, sheet steel enclosure for flush/surface mounting fitted with copper Bus bars, Neutral links, Blanking plates as per IS 13032 & 8623 (Part-3) or relevant IS standard, universal mounting, Earth link, Earthing studs. The DB shall have rubber glands at cable entry.</p> <p>Make: - Havells, Anchor, L&T, Finolex, Wipro, Schneider Electric, ABB, IndoAsian.</p>
4	Fixing and connection of MCB DB supplied with supply of all material.	<p>The TPN Distribution board (supplied under item no. 3 of schedule 1B) shall be fixed as per directive of authorised representative of Sr.DEE/RS&G/BSP. The incoming cable & outgoing cables shall be connected to the terminals & from the terminals to the incoming of the MCBs. The material & labour required for fixing all above items shall be supplied by the contractor. The method of fixing & cable termination shall be done as per the directive of the authorised representative of SR.DEE(RS&G)/BSP.</p> <p>Make:- for copper wire: Polycab /Havells /KEI /Finolex /RR Kabel/Ultracab.</p>
5	Supply of MCB SP 6-32 A capacity.	<p>Supply of Miniature Circuit Breaker (MCB), Single Pole (SP), rated current 6A to 32A, suitable for 240V, single-phase, 50 Hz AC supply, with rated breaking capacity not less than 10 kA at 230V, conforming to IS/IEC 60898-1</p>

[Handwritten signatures and initials]

		(latest) . Make: Siemens, Schneider, Havells, Standard, GE, Standard, Indoasian, Control & Switchgear, Legrand, Hager, L&T (Lauritz Knudsen), Sigma, Eaton, ABB or equivalent makes conforming to BIS standards shall be accepted.
6	Supply of TPN MCB 63 A capacity (C-curve)	Supply of Miniature Circuit Breaker (MCB) TPN, 415 Volts AC 50HZ, with rated current 63 Amps (C curve) conforming to IS 8828-1996 IEC-60898-1 or relevant IS standard having facilities for termination of Aluminum cable, fixing arrangement for mounting on steel rail & rubber glands conform to relevant IS standards for safe and reliable operation Make: Siemens, Schneider, Havells, Standard, Crabtree, GE, Indoasian, Control & Switchgear, BCH, Legrand, Hager, Lauritz Knudsen, Eaton or equivalent makes conforming to BIS standards shall be accepted.
7	Supply of 7 mtrs height hot deep galvanized octagonal pole (single arm)	The rate includes supply of 7 mtr height hot dip galvanized octagonal pole with single arm bracket as per IS:2629/IS:2633/IS:4759 standards having sheet thickness of 3 MM of make- Vakrangee, Bajaj/ Zenieth/TATA/Arya/Zenco Industrial Corpn/Shah Phylon/Philips or equivalent makes conforming to BIS standards shall be accepted. The single arm bracket of length 1500MM along with spigot shall be hot dip galvanized. The internal and external surface of the pole shall be galvanized with minimum coating thickness of 65 microns. The pole shall have camouflaged junction box having necessary terminal board with compression gland for termination of incoming & outgoing supply cable. The pole shall have approximately top and bottom dia of 70/130 MM respectively and shall also supplied with foundation bolts 04 nos 'J' type of size 20 MM (EN8 grade). Anchor plate shall be of 3MM thickness, base plate of size 220X220X12MM approximate
8	Excavation of earth, provision of Foundation and erection of hot deep galvanized octagonal poles with aluminium & red oxide paint	The price shall cover the cost of transportation of 7 mtr height hot deep galvanized octagonal pole (supplied above) to the work site and casting of concrete foundation for erection of pole with aluminium & red oxide paint. The rate includes excavation of earth pit in any kind of soil and casting of PCC foundation (1000x1000x100 MM) ratio 1:4:8 at the bottom and over which RCC foundation (350x350x1200MM) ratio 1:2:4 shall be done. The top portion of the foundation shall be 300MM above the ground level. The J bolts shall be fixed in the RCC foundation as per the template size of the octagonal pole as per the direction of site in charge. The price shall also include back filling and dressing of earth and debris cleaning after completion of work in all respect.

9	Supply of junction box 300x350x125 mm size material thickness 1.5mm with 1 no. 6A HRC fuse with base and 1 no. TPN terminal block stud type suitable for 25 sqmm cable.	The street light junction box to be supplied shall be made out of 1.5 mm thick CRCA sheet steel powder coated exterior, with gasket, hinged door with IP-55 protection or better, mounting plate made of 2mm thick CRCA sheet steel, cable gland plate 2mm thick provided at bottom, with cam type locking arrangement & with brackets for pole mounting. The junction box should contain 1 no. 6A HRC fuse with base and 1 no. TPN terminal block stud type suitable for 25 sq mm cable. The dimension of the DB is 300 mm x350 mm x125 mm (WXHxD). The internal wiring shall be done by 2.5 sq-mm FRLS wire.
10	Fixing & connection of junction boxes	The street light junction box (supplied against item no. 9 of schedule-1 B) shall be fitted on the street light pole(s) at the place identified by the authorized representative of Sr. DEE(RS&G)/BSP. The work include connection of incoming & outgoing cables on the terminals of the DB. All materials &labour required for fixing shall be supplied by the contractor. Make for copper wire: Polycab/Havells/KEI/Finoles/RR Kabel/Ultracab orequivalent makes conforming to BIS standards shall be accepted
11	Supply of LED street light Luminaries 45W complete with all accessories.	Supply of LED street light Luminaries 45W complete with all accessories. Detailed technical specification is enclosed as Annexure- II . Make -Philips, Osram, Havells, Wipro, Syska, Oreva, Polycab, Orient, Surya, Halonix, or equivalent makes conforming to BIS standards shall be accepted
12	Fixing & connection of street light luminaire supplied above.	The luminaries (supplied against item No: 11 of schedule-1B) shall be fixed on existing/newly erected Rail poles/SST poles/ wall of service buildings or at place as directed by authorized representative of Sr.DEE(RS&G)/BSP. Connection to the fittings shall be done through 2 core un-armoured 2.5 sq. mm. copper cable or 4 sq. mm aluminium cable drawn from junction boxes or from overhead line as per directives of site engineer. Any other minor items required for execution of above work shall be supplied by the contractor.
13	Supply of class A MS pipe/MS clamp for clamping the light fitting at suitable design and size.	The price shall cover supply of Class A MS pipe of suitable dia. For fixing in street light fittings & Supply of MS clamps size 25mm x 5mm. The quantity of MS pipe of suitable dia. & MS clamps shall be decided by the authorized representative of Sr.DEE (RS&G)/BSPs. The work also includes the fabrication works required for fixing the fittings into poles. After fabrication of pipe & clamps it shall be painted with red oxide primer &Aluminium paint.
14	Construction of Cement Concrete foundation containing cement concrete on the proportion 1:3:6 of cement, sand & ballst size of 40mm.	The price shall cover excavation, supply & handling of all materials & accessories temporary arrangement for excavation in hard soil and concrete/masonry drains/walls requiring use of chisel & hammer, shoring where necessary casting concrete including frame work where necessary

8
M. Kulkarni

	<p>tamping of concrete, grouting of poles and finishing the top of concrete foundation. The price also includes the dismantling of all connected temporary arrangements, backfilling with earth & compacting the same to required height & width as per directive of authorized representative of SR.DEE (RS&G)/BSP. The authorized representative of SR.DEE (RS&G)/BSP shall certify the use of chisel & hammer if necessary. The price shall be paid on the basis of total volume of the concrete foundation. The depth of excavation shall be measured from the formation level to the maximum excavated point. Cement concrete on the proportion 1:3:6 of cement sand & ballast size of 40mm. The Cement concrete foundations may be for gate support pillars, fencing angle foundations, mulling & concreting of existing structures and foundation for SST pole etc. SST poles/Rail poles as per the directive of the authorized representative of SR.DEE (RS&G)/BSP. The proper curing work shall be done by the contractor. Preferably suitable scroll of PVC pipe or G.I. pipe to be used during foundation casting for pole erection after sufficient time for setting.</p>
--	---

SCHEDULE-2

Electrical portion of works "Construction of 05 units Type-II and 04 units Type-III quarter on replacement ground of old and dilapidated quarters under jurisdiction of ADEN/Settl-I/BSP"

A: Type-II quarters (per qrtr)

Item No.	Description of Items	Detailed technical specification/ Scope of work of items appearing in schedule- 2
1	Supply of Crosslinked Polyethylene Insulated Armoured Cable 4x16sqmm with Aluminium conductor, suitable for rated voltage at 1100 volts grade, as per IS 7098 (Part 1): 1988 latest	Supply of Crosslinked Polyethylene Insulated Armoured Cable 4x16 sqmm with Aluminium conductor, suitable for rated voltage at 1100 volts grade, as per IS:7098 (Part 1): 1988 latest. Make: Polycab, Havells, KEL, Finolex, RR Kabel, Ultracab, Vishal Cables, or equivalent makes conforming to BIS standards shall be accepted.
2	Laying of cable of lower size (upto 4x35 Sq. mm) in Polythene (HDPE) pipe without digging of earth dressing of land including supply of HDPE pipe & all materials [HDPE pipe 50 mm Diameter, PN 6 or above, conforming to IS 4984 : 2016 or relevant IS standard type: coil/straight as per requirement]	The cable of lower size upto 4x35 sq.mm (supplied by Railway) shall be laid in cable trenches along the road/track/ yard without digging in all sorts of soil with/without HDPE Pipe including supply of HDPE pipe & all materials. [HDPE pipe 50 mm Diameter, PN 6 or above, conforming to IS 4984: 2016 or relevant IS standard type: coil/straight as per requirement] as per site conditions requirements. The cable laying shall be done and back filling and properly dressing of land there after laying of cable with cement concrete/ Bitumen properly to the original condition. More than one cable be laid on the same trench if required. The path and type of cable to be laid on that path shall be decided by authorized representative of Sr.DEE/ RS&G/BSP at site. If anything, get damaged/partially damaged the same shall be repaired as far as possible to original by the contractor. Cable shall be supplied by Railway. Cable

		route marker shall be provided at appropriate distance on cable route by contractor after cable laying.
3	Trenching/Digging of earth 1 mtr deep for cable laying	The work consists of Trenching/Digging of earth 1mtr deep for cable laying. The trenching /digging shall be done in all sort of soil as per the directive of the authorized representative of Sr.DEE (RS&G)/BSP. If anything gets damaged/partially damaged during trenching /digging the same shall be repaired as far as possible to original. During course of digging if depth of 1 meter is not feasible due to technical reason then the depth may be reduced & payment will be done on pro rata basis
4	Laying of cable of in GI pipe including supply of all materials (including tG.I. Pipe & except Cable). With supply of G.I. pipe dia 50mm thickness min. 2mm	This item includes Laying of cable of in GI pipe including supply of all materials. With supply of G.I. pipe dia. 50mm thickness min. 2 mm. The Cable laying across the road /track/yard should be done minimum one-meter-deep trench only through GI pipe of suitable diameter & wall thickness. Each cable should be laid through separate GI pipe. If any road/platform is cut for trenching, the same shall be restored after laying of cable with cement, bitumen properly to the original condition. GI pipe shall be used. All supporting materials shall be supplied by the contractor except cable. For underground cable laying cable route marker at appropriate distance shall be provided by contractor after cable laying. The work shall be carried out according to relevant IS std. and as per directive of authorized representative of Sr. DEE(RS&G)/BSP. If anything gets damaged/partially damaged the same shall be repaired as far as possible to original. The depth of cable trench may be varying as per site conditions. During course of digging if depth of 1 meter is not feasible due to technical reason then the depth may be reduced & payment will be done on pro rata basis.
5	Laying of cable in open air/concealed in wall with supply of all material.	Laying of cables (supplied by Railway) in open air/ concealed, should be supported with G.I. wire if laid in between two structure (Pole to Pole), such that there should not be any mechanical load on cable. Laying of cable should be supported with proper size of 'U. clamp & nut bolts, 1mtr apart, if laid with support of walls. Laying of cable should be properly supported if laid under MS structure/Shelter etc. Laying of cable in open air consists of terminating it to the DB fixed on a SST Poles/Mast or any other supporting structure with proper lugs and glands. The cable shall be laid through class A GI pipes (supplied by Railway) of 40mm dia. or other size, 3 Mtr./ 2 mm long on the vertical runs over the pole/walls. The cable & the pipe shall be properly clamped to the pole/walls with clamps made out of MS flat iron of 25mm x 5mm and painted to be supplied by the contractor. All materials shall be supplied by the contractor. The work shall be shall be done as per the directive of the authorized representative of Sr.DEE (RS&G)/BSP.
6	Earthing arrangement	Supply & Laying of earth cone with supply of all materials including GI strip. The earth cone supplied shall be fabricated from Class-B. G.I. pipe conforming to IS: 3043 - 1987 (Reaffirmed 2006) amended up to date or relevant IS standard and as per CEE/GRC drawing No. CEE/A4/P-105. The Earth

		<p>pipe should have outer dia. 60.2 mm, inner dia. 54.4 mm & thickness 2.9 mm. (aprx.) (Make for GI pipe: SAIL, JINDAL, Surya, TATA, Prakash, PSST or equivalent makes conforming to BIS standards shall be accepted.). The Earth Cone shall be erected as per CEE/GRC's drawing No. CEE/G/A3/P-134 including supply of all materials. The Earth cone shall be connected by the contractor to the DBs / Poles as described in the erection/installation of the respective materials with GI Strip of size 25 mm x 3 mm (minimum) (or as specified) with hot-dip galvanization of uniform coating. Make for GI strip: SAIL/Jindal/Surya/TATA/Prakash/PSST or equivalent approved make. The location for earth cones shall be indicated by the authorized representative of SR.DEE (RS&G)/ BSP. Earth values after meggering to be written on the earth pit. M.S. Cover plate 3 mm thick/concrete to be provided on earth pit. All joints shall be properly cleaned. The work shall be carried out according to relevant IS std. and as per directive of authorized representative of Sr.DEE(RS&G)/BSP.</p>
7	Supply of electronic KWH meter (energy meter) 5-30 amps AC static 230 volt accuracy class-I	<p>The price shall cover Supply of single phase AC static electronic kWh energy meter, current rating 5-30 Amps, operating voltage 230V $\pm 20\%$, accuracy Class-I, conforming to IS 13779 / IEC standards, LCD display with backlight, LED indicators for energy pulse, tamper-proof polycarbonate enclosure, suitable for wall mounting, with facility for recording tamper events, complete in all respects.</p> <p>Makes: HPL, Secure Meters, Genus Power, Schneider Electric, L&T Electrical & Automation, C&S ELECTRIC or equivalent makes conforming to BIS standards shall be accepted.</p>
8	Fixing, connection & commissioning of above supplied	<p>The cost covers fixing, connection and commissioning of single phase electronic kWh energy meter (supplied against item no. 7 of schedule 2A) including mounting on meter board/panel, making proper electrical terminations with suitable lugs, tightening of connections, providing necessary hardware, testing for proper functioning, sealing as per standard practice and handing over the installation in fully operational condition, complete in all respects. This also includes transportation of the material at site.</p>
9	Plug and socket with mcb 25A metal clad box with metal plug and top	<p>Supply of AC starter unit suitable for outdoor/indoor use, comprising 25A/16A, 230V, single-phase industrial type metal clad/polycarbonate plug and socket, complete with 16A/25A SP MCB of reputed make (such as Anchor/Havells/Schneider or equivalent), housed in IP55/IP65 rated weatherproof enclosure, with all necessary accessories, conforming to relevant IS/IEC standards and as per site requirements."</p>




10	Fixing connection & commissioning of above	Installation/fixing of AC starter unit (supplied against item no. 9 of schedule 2A) including mounting on wall/structure, cable termination with glands/lugs, earthing, dressing of wiring, and testing for proper operation, complete as per the directive of the authorized representative of Sr.DEE (RS&G)/BSP
11	Supply of SPN Distribution board confirms to IS-13032 DBs are phosphatised and painted with epoxy polyester based powder paint, neutral link earth terminal & bus-bar single door 6 way	The price shall cover supply of SPN Distribution Board, 240V, single-phase, single-door, 6-way type, conforming to IS:13032 and IS:8623 (Part 1), fabricated from CRCA sheet steel duly phosphatised and powder coated with epoxy polyester paint, complete with neutral link, earth terminal, tinned copper bus-bar, and provision for incoming and outgoing MCBs, suitable for flush or surface mounting, complete in all respects as per directive of the authorized representative of Sr.DEE (RS&G)/BSP. Make: - Havells, Legrand, Anchor, BCH, L&T, Finolex, Wipro, Schneider Electric, ABB, IndoAsian, Hager or equivalent makes conforming to BIS standards shall be accepted
12	Supply of Double pole isolator 40Amp	The price shall cover supply of Double pole isolator 40Amp Conformity of the specification: as per IS/IEC IS/IEC 60947-3 or latest No. of pole: 2 Rated voltage (in Volts): 240 V, AC Rated Current (in Ampere): 40 Instantaneous tripping current type: C Rated Short circuit capacity (in Ampere): 10000 Make: Siemens, Schneider, Havells, GE, Standard, Indoasian, Control & Switchgear, Legrand, HPL, Hager, L&T/ Lauritz Knudsen, ABB, Anchor by Panasonic, Polycab or equivalent makes conforming to BIS standards shall be accepted.
13	Supply of MCB SP 6-32 A capacity	Supply of Miniature Circuit Breaker (MCB), Single Pole (SP), rated current 6A to 32A, suitable for 240V, single-phase, 50 Hz AC supply, with rated breaking capacity not less than 10 kA at 230V, conforming to IS/IEC 60898-1 (latest). Make: Siemens, Schneider, Havells, Standard, GE, Standard, Indoasian, Control & Switchgear, Legrand, Hager, L&T (Lauritz Knudsen), Sigma, Eaton, ABB or equivalent makes conforming to BIS standards shall be accepted.
14	Fixing, connection & commissioning of DB/bus-bar chamber supplied above.	The DB supplied (against item No: 11 of Schedule 2A) will be fixed with help of fixers supplied by the tenderer. The fixers must be painted with corrosion resistant paint & should have thickness at least 5 mm, & 30 mm wide, suitable length & enough strength to withstand the weight of the DBs for a long period. The nut bolts used for fixing should have 10 mm dia or as per requirement & be strong enough to withstand the load of the DB. The work include termination of the incoming &

		<p>outgoing cables inside the DB with proper size of lugs supplied & fixed by the contractor. The crimping of lugs must be done using a crimping tool with perfect finish. All the material & labor required to complete the above work shall be supplied by the contractor & as per the directive of the authorized representative of Sr.DEE (RS&G)/BSP</p>
15	Supply of 9W LED retrofit lamp B22 holder base with polycarbonate body	<p>The price shall cover supply of 9W LED Retrofit Lamp, B22 holder type, rated for 220-240V AC, 50Hz, with polycarbonate diffuser housing and aluminium heat sink, minimum efficacy ≥ 100 lm/W, PF ≥ 0.9, THD $\leq 20\%$, and average life $\geq 25,000$ burning hours</p> <p>Make - Philips, Osram, Havells, Wipro, Syska, Oreva, Orient, Surya, Halonix or equivalent makes conforming to BIS standards shall be accepted.</p>
16	Supply of ELCB 32 amps. 2 pole 300 MA sensitivity	<p>The price shall cover Supply of Earth Leakage Circuit Breaker (ELCB) 32A 2P 300mA, double pole, 32 Amps rating, 230V AC, 50Hz, with sensitivity of 300 mA, complete with DIN rail mounting, suitable enclosure, interconnections, accessories and all necessary hardware, conforming to relevant IS/IEC standards, as required at site.</p> <p>Make: Siemens, Schneider, Havells, Standard, Crabtree, GE, Indoasian, Control & Switchgear, Legrand, Hager, L&T, Eaton, ABB or equivalent makes conforming to BIS standards shall be accepted.</p>
17	Fixing of ELCB 32 Amps. 2 pole 300 MA sensitivity	<p>The ELCBs/RCCB (supplied against item nos. 16 of schedule-2A) shall be fixed at the location identified by authorized representative of Sr. DEE(RS&G)/BSP by the use of suitable bolts etc. supplied by the contractor. The connection & testing shall be done by contractor. All wires shall be connected with the use of proper lugs and proper connection with earth continuity conductor of 18 SWG PVC copper wire shall be made as per directives of authorized representative of Sr.DEE(RS&G)/BSP.</p>
18	Concealed wiring for the 6 Amps. Light, fan & 5 Amps socket with 1.5 sqmm. FRLS copper wire including supply of all materials	<p>The Concealed wiring for lights & fan, 5Amps socket & 6A plug points shall be through PVC Pipe, heavy type ISI marked of size 20/25/32 mm. The wiring shall be done with PVC insulated stranded copper conductor 1.5 sq. mm 650/1100 volt grade FRLS type ISI marked as per directives of authorized representative of Sr.DEE (RS&G)/BSP. The wiring through walls shall pass through PVC pipes 20/25/32 mm size & heavy type ISI marked. Switch socket and board shall be supplied by the contractor. An earth continuity conductor of 18 SWG PVC copper wire shall be run all along the piping and shall be connected. For convenience, wiring for light & fan points shall be done through common PVC pipe & Earthing should be provided in earth point of 3/5 pin plugpoint.</p> <p>Make for PVC pipe- Polycub/Anchor/Finolex/Bajaj/Precision/Richa or equivalent makes conforming to BIS</p>

		<p>standards shall be accepted.</p> <p>Make for Switch/Socket - Havells brands L&T/ Legrand/ Anchor/ ROMA/HPL. or equivalent makes conforming to BIS standards shall be accepted.</p> <p>Make for copper or equivalent makes conforming to BIS standards shall be accepted. wire Polycab/Havells/KEI/Finolex/RR Kabel/Ultracab or equivalent makes conforming to BIS standards shall be accepted.</p>
19	Concealed Wiring for 6-16Amps plug points with PVC Pipe and PVC insulated copper conductor 2.5 sq. mm. size with supply of all materials.	<p>The concealed wiring for 6-16 A plug points, individual or combined switch, socket & fuse shall be through PVC pipe 20/25/32mm size/dia as required. PVC pipe shall be heavy type ISI marked with provision of suitable Tees, bends, elbows, junction boxes as required. The wiring shall be with PVC insulated stranded individual copper conductor 2.5 sq.mm for one socket, 4 Sq. mm if 2 to 3 sockets, 6 Sq. mm if 4 to 5 sockets in a board. The wires should be 650/1100 volt grade FRLS type of ISI marked with additional properties of FRLS. A separate circuit should be drawn from the main board for the plug point. An earth continuity conductor of 18 SWG PVC copper shall be run from the main board to the plug socket and connected to the earth terminal of the plug socket. Wherever convenient, wiring for light, fan & Plug points shall be done through common pipe. All materials shall be supplied by the contractor.</p> <p>The work shall be done as per the directive of the authorized representative of Sr.DEE (RS&G)/BSP.</p> <p>Make for PVC pipe- Polycab/Anchor/Finolex/Bajaj/Precision /Richa or equivalent makes conforming to BIS standards shall be accepted.</p> <p>Make for Switch/Socket - Havells brands/L&T/ Legrand/ Anchor/ ROMA/HPL. or equivalent makes conforming to BIS standards shall be accepted.</p> <p>Make for copper wire: Polycab/Havells/KEI/Finolex/RR Kabel/Ultracab. or equivalent makes conforming to BIS standards shall be accepted.</p>
20	Concealed Wiring for Sub-circuits.	<p>The Concealed/Casing capping wiring from main switch boards to distribution switch boards & from one room to another room, from DB supplied & fixed up to the main board is referred to as sub-circuit. The sub-circuits shall be run through Casing capping /PVC Pipe of different size as required. Casing capping /PVC Pipe shall be heavy type ISI marked (Make- Polycab/Anchor/Finolex/Bajaj/Precision/ Richa or equivalent makes conforming to BIS standards shall be accepted.). The wiring through walls shall pass through Casing capping /PVC pipes. PVC insulated copper stranded conductor 6.0</p>

		<p>sq. mm size, 650 – 1100 volts 7 grade of ISI marked FRLS type shall be used. A number of sub-circuits may be run through one Casing capping /PVC pipe for convenience of wiring. One sub- circuit shall consist of two wires one phase & one neutral. Rate for one meter length of the sub circuit shall be taken 01 meter of phase wire & 01 meter neutral wire. Suitable Tees, bends, elbows, junction boxes etc for both surface & concealed wiring as required shall be supplied & fixed by the contractor. In no case the PVC pipe shall be bend to change the direction of wiring .An earth continuity conductor of 1mm PVC copper wire shall be run along the sub-circuit wires & shall be connected to DBs.</p> <p>Make for copper wire: Polycab/Havells/KEI/Finolex/RR Kabel/Ultracab. or equivalent makes conforming to BIS standards shall be accepted.</p>
21	Supply of LED Inverter Batten 20 W 6500 K Tubelight polycarbonate body	<p>Supply of LED Inverter Batten 20 W, 6500 K (Tube light type) (+/-500 K) with high-efficiency SMD LEDs, polycarbonate body and diffuser, minimum IP65 protection ,minimum efficacy ≥ 100 lm/W, CRI ≥ 80, operating voltage 140–270 V AC, with inbuilt rechargeable battery for minimum 3 hours backup during power failure, surge protection ≥ 2.5 kV, power factor ≥ 0.9, THD $\leq 10\%$, complete with mounting accessories. The product shall be BIS/ISI marked and conform to relevant IS standards.</p> <p>Report to be mandatory submitted along with the offer LM 79& Test report in respect of the luminaries test certificates should be from Central Government LAB /NABL/ILAC accredited manufacturer/LAB. LM 80 Test report in respect of the LED used in the offered luminaries should be from Central Government LAB /NABL/ILAC accredited manufacturer/LAB.</p> <p>Make – Philips ,Osram ,Havells ,Wipro, Syska ,Oreva ,Polycab, Orient , Surya, Halonix or equivalent makes conforming to BIS standards shall be accepted.</p>
22	Supply of 20W LED tube light supply voltage 230V 50Hz built in electronic driver	<p>Supply of 20W LED tube light fittings complete with all accessories. Supply voltage 230V 50Hz built in electronic driver. Detailed technical specification is enclosed as Annexure-I</p> <p>Make – Philips ,Osram ,Havells ,Wipro, Syska ,Oreva ,Polycab, Orient , Surya, Halonix, or equivalent makes conforming to BIS standards shall be accepted.</p>
23	Supply of Electric Ceiling Fan BLDC Type Sweep Size (mm):1200, rating 5star, type of regulator: Electronic/remote	<p>Supply of Electric Ceiling Fan BLDC Type Sweep Size (mm):1200, rating: 5 star, type of regulator: Electronic/remote , with 5 year warranty.</p> <p>Make: Khaitan, Havells, Crompton Greaves, Usha, Philips ,Halonix, Polycab, bajaj or equivalent makes conforming to BIS standards shall be accepted.</p>

24	Fixing of lights/fans supplied as above with supply of flexible wire to connection the nearest ceiling rose.	The retrofit lamp, bulkhead, recessed light, inverter batten, tubelight, ceiling fan, exhaust fan, call bell & other LED light (supplied against item no. 15, 21, 22, 23, 25, 26, 32 of schedule 2A) shall be fixed at location mentioned by Sr. DFE (RS&G)/ Bilaspur 's authorized representative at site with use of proper size of P.K. screws & PVC sleeves shall be connected to supply through PVC pipe/PVC casing capping wiring piercing across the wall. The fitting shall thus be connected to the nearest ceiling rose by the use of 0.75 sq.mm. FRLS flexible wire. The fan regulators shall also be fitted on the switch board. An earth continuity conductor of 18 SWG PVC copper wire shall be run all along the piping and shall be connected to the down rod of the fan. Make for Ceiling Rose- Polycab/Anchor/Panasonic/Finox/ Bajaj / Precision /Richa or equivalent makes conforming to BIS standards shall be accepted. Make for Switch/Socket/modular board- Havells brands/L&T/ Anchor/ Legrand/ ROMA/HPL. Or equivalent makes conforming to BIS standards shall be accepted. Make for copper wire: Polycab/Havells/KEI/Finox/RR Kabel/Ultracab or equivalent makes conforming to BIS standards shall be accepted.
25	Supply of ding dong type call bell.	The ding dong call bell shall be suitable for use with 220 volt, 50 Hz. AC supply. one bell push shall be supplied along with the ding dong bell. Make: Anchor Roma, Legrand, GM Modular, Orient or equivalent makes conforming to BIS standards shall be accepted.
26	Supply of Exhaust fan 300 mm sweep complete with accessories.	Supply of Exhaust Fan non-Capacitor Type Sweep Size (mm): 300, No. of pole: 4, Insulation of material class: B or better. Make: Khaitan, Havells, Crompton Greaves, Usha, Philips, Polycab or equivalent makes conforming to BIS standards shall be accepted. Warranty period - 2 yr
27	Supply of DP MCB 16 A flush mounting MCB complete with sheet steel enclosure, powder painted for use as main switch.	Supply of Miniature Circuit Breaker (MCB) DP 16 Amps penta flush mounting with sheet metal enclosure powder painted for use as main switch with ratings 250 Volts AC 50 Hz with breaking capacity 10 KA as per IS 8828-1996 IEC-60898-1 (To be furnished by manufacturer) having facilities for termination of Aluminum cable, fixing arrangement for mounting on steel/DIN rail. Make: Siemens, Schneider, Havells, Standard, Crabtree, GE, Standard, Indoasian, Control & Switchgear, Legrand, Hager, L&T, Eaton or equivalent makes conforming to BIS standards shall be accepted.
28	Fixing and connection of MCB DB supplied as above with supply of all material.	The MCB DB supplied (supplied against item no. 27 of Schedule-2A) shall be fixed at the location identified by site engineer by the use of 04 nos. bolts size 100mmx6mm supplied by the contractor. The connection & testing shall be done by contractor. All wires shall be

[Handwritten signatures and initials]

29	Concealed wiring for 20 Amps plug points with PVC pipe & PVC insulator copper conductor 4 sq mm size with supply of all material	connected with the use of copper lugs & clamping kits. The concealed wiring for 20A plug points, shall be through PVC pipe of suitable size as required. PVC pipe shall be heavy type ISI marked. The wiring shall be with PVC insulated stranded individual copper conductor 4 sq. mm. The wires should be 650/1100 volt grade FRLS type of ISI marked, conforming to IS-694. A separate circuit should be drawn from the outgoing of a 20 Amps F.T. fuse provided on the main board for the plug point. An earth continuity conductor of 18 SWG PVC copper shall be run from the main board to the plug socket and connected to the earth terminal of the plug socket. Suitable Tees, bends, elbows, junction boxes as required shall be supplied and fixed by the contractor. Wherever required, wiring for light, fan & Plug points shall be done through common pipe. All materials shall be supplied by the contractor. In no case the PVC pipe shall be bend to change the direction of wiring. The work shall be done as per the directive of the authorized representative of Sr.DFE (RS&G)/BSP. Make for PVC pipe- Polycab/Anchor/Finolex/Bajaj/Precision/Richa or equivalent makes conforming to BIS standards shall be accepted Make for Switch/Socket - Havells brands/L&T/ Legrand/Anchor/ ROMA/HPL or equivalent makes conforming to BIS standards shall be accepted Make for copper wire: Polycab/Havells/KEI/Finolex/RR Kabel/Ultracab or equivalent makes conforming to BIS standards shall be accepted
30	Supply of ELECTRIC WATER HEATER-GEYSER - Tank Capacity 25 Liter, 5star rated Material of Inner Container: Stainless Steel, Material of Outer Container: ABS, warranty: 3year,	The cost covers supply of ELECTRIC WATER HEATER-GEYSER - Tank Capacity 25 Liter, 5star rated Material of Inner Container: Stainless Steel, Material of Outer Container: ABS, warranty: 3year. It should have, thermostat, indicating lamp, thermal cut out, drain plug, provision for vent pipe/pressure relief valve, non return valve & other accessories. Make- Orient, kenstar, Bajaj, Usha, Havells or equivalent makes conforming to BIS standards shall be accepted
31	Fixing of storage type geyser 25litrs capacity.	Fixing, installation and connection of 25-litre storage type electric geyser (supplied against item no. 30 of Schedule-2A) including wall mounting with suitable brackets/anchor fasteners, making plumbing and electrical connections with approved materials, testing for proper operation and ensuring leak-free performance, complete in all respects.
32	Supply of Mirror/decorative/bracket light 20W	The cost covers Supply of 20W Mirror / Decorative / Bracket type LED light fitting (as per requirement), Color Temperature 6500K (+/-500 K), System Efficacy ≥ 100 lm/W, Power Factor ≥ 0.95 , CRI ≥ 80 , THD $\leq 10\%$, Input

8

Ludhiana

		<p>Voltage 140V-270V AC, 50Hz. with inbuilt electronic driver, high-efficiency LED module, minimum IP20 protection, polycarbonate/metal body, warm white / cool white light as required, complete with all mounting accessories, conforming to relevant IS standards.</p> <p>Make – Philips ,Osram ,Havells ,Wipro, Oрева ,Polycab, Orient , Surya, Halonix,Syska or equivalent makes conforming to BIS standards shall be accepted</p>
--	--	--

B:Type-III quarters (per qrtr)

1	<p>Supply of Crosslinked Polyethylene Insulated Armoured Cable 4x16sqmm with Aluminium conductor , suitable for rated voltage at 1100 volts grade, as per IS.7098 (Part 1). 1988 latest.</p>	<p>Supply of Crosslinked Polyethylene Insulated Armoured Cable 4x16sqmm with Aluminium conductor , suitable for rated voltage at 1100 volts grade, as per IS:7098 (Part 1). 1988 latest</p> <p>Make: Polycab, Havells, KEI, Finolex, RR Kabel, Ultracab, Vishal Cables, or equivalent makes conforming to BIS standards shall be accepted.</p>
2	<p>Laying of cable of lower size (upto 4x35 Sq. mm) in Polythene (HDPE) pipe without digging of earth dressing of land including supply of HDPE pipe & all materials</p> <p>[HDPE pipe 50 mm Diameter, PN 6 or above, conforming to IS 4984 : 2016 or relevant IS standard type, coil/straight as per requirement]</p>	<p>The cable of lower size upto 4x35 sq.mm (supplied by Railway) shall be laid in cable trenches along the road/track/ yard without digging in all sorts of soil with/without HDPE Pipe including supply of HDPE pipe & all materials. [HDPE pipe 50 mm Diameter, PN 6 or above, conforming to IS 4984: 2016 or relevant IS standard type: coil/straight as per requirement] as per site conditions requirements. The cable laying shall be done and back filling and properly dressing of land there after laying of cable with cement concrete/ Bitumen properly to the original condition. More than one cable be laid on the same trench if required. The path and type of cable to be laid on that path shall be decided by authorized representative of Sr.DEE/ RS&G/BSP* at site. If anything, get damaged/partially damaged the same shall be repaired as far as possible to original by the contractor. Cable shall be supplied by Railway. Cable route marker shall be provided at appropriate distance on cable route by contractor after cable laying.</p>
3	<p>Trenching/Digging of earth 1 mtr deep for cable laying.</p>	<p>The work consists of Trenching/Digging of earth 1mtr deep for cable laying. The trenching /digging shall be done in all sort of soil as per the directive of the authorized representative of Sr.DEE (RS&G)/BSP. If anything gets damaged/partially damaged during trenching /digging the same shall be repaired as far as possible to original. During course of digging if depth of 1 meter is not feasible due to technical reason then the depth may be reduced & payment will be done on pro rata basis</p>
4	<p>Laying of cable of in GI pipe including supply of all materials (including t.G.I. Pipe & except Cable). With supply of G.I. pipe dia. 50mm thickness min. 2mm</p>	<p>This item includes Laying of cable of in GI pipe including supply of all materials. With supply of G.I. pipe dia. 50mm thickness min. 2 mm. The Cable laying across the road /track/yard should be done minimum one-meter-deep trench only through GI pipe of suitable diameter & wall thickness. Each cable should be laid through separate GI pipe. If any road/platform is cut for trenching, the same shall be restored after laying of cable with cement, bitumen properly to the original condition.GI pipe shall be used. All supporting materials</p>

8

[Handwritten signature]

		shall be supplied by the contractor except cable. For underground cable laying cable route marker at appropriate distance shall be provided by contractor after cable laying. The work shall be carried out according to relevant IS std. and as per directive of authorized representative of Sr. DEE(RS&G)/BSP. If anything gets damaged/partially damaged the same shall be repaired as far as possible to original. The depth of cable trench may be varying as per site conditions. During course of digging if depth of 1 meter is not feasible due to technical reason then the depth may be reduced & payment will be done on pro rata basis.
5	Laying of cable in open air/concealed in wall with supply of all material.	Laying of cables (supplied by Railway) in open air/ concealed, should be supported with G.I. wire if laid in between two structure (Pole to Pole), such that there should not be any mechanical load on cable. Laying of cable should be supported with proper size of 'U' clamp & nut bolts, 1mtr apart, if laid with support of walls. Laying of cable should be properly supported if laid under MS structure/Shelter etc. Laying of cable in open air consists of terminating it to the DB fixed on a SST Poles/Mast or any other supporting structure with proper lugs and glands. The cable shall be laid through class A GI pipes (supplied by Railway) of 40mm dia. or other size, 3 Mtr/ 2 mm long on the vertical runs over the pole/walls. The cable & the pipe shall be properly clamped to the pole/walls with clamps made out of MS flat iron of 25mm x 5mm and painted to be supplied by the contractor. All materials shall be supplied by the contractor. The work shall be done as per the directive of the authorized representative of Sr.DEE (RS&G)/BSP.
6	Earthing arrangement	Supply & Laying of earth cone with supply of all materials including GI strip. The earth cone supplied shall be fabricated from Class-B, G.I. pipe conforming to IS: 3043 - 1987 (Reaffirmed 2006) amended up to date or relevant IS standard and as per CEE/GRC drawing No. CEE/A4/P-105. The Earth pipe should have outer dia. 60.2 mm, inner dia. 54.4 mm & thickness 2.9 mm. (aprx.) (Make for GI pipe: SAIL, JINDAL, Surya, TATA, Prakash, PSST or equivalent makes conforming to BIS standards shall be accepted.). The Earth Cone shall be erected as per CEE/GRC's drawing No. CEE/G/A3/P-134 including supply of all materials. The Earth cone shall be connected by the contractor to the DBs / Poles as described in the erection/installation of the respective materials with GI Strip of size 25 mm x 3 mm (minimum) (or as specified) with hot-dip galvanization of uniform coating. Make for GI strip: SAIL/Jindal/Surya/TATA/Prakash/PSST or equivalent approved make. The location for earth cones shall be indicated by the authorized representative of SR.DEE (RS&G)/ BSP. Earth values after meggering to be written on the earth pit, M.S. Cover plate 3 mm thick/concrete to be provided on earth pit. All joints shall be properly cleaned. The work shall be carried out according to relevant IS std. and as per directive of authorized representative of Sr.DEE(RS&G)/BSP.

7	Supply of electronic KWH meter (energy meter) 5-30 amps AC static 230 volt accuracy class-I	<p>The price shall cover Supply of single phase AC static electronic kWh energy meter, current rating 5-30 Amps, operating voltage 230V $\pm 20\%$, accuracy Class-I, conforming to IS 13779 / IEC standards, LCD display with backlight, LED indicators for energy pulse, tamper-proof polycarbonate enclosure, suitable for wall mounting, with facility for recording tamper events, complete in all respects.</p> <p>Makes: HPL, Secure Meters, Genus Power, Schneider Electric, L&T Electrical & Automation, C&S ELECTRIC or equivalent makes conforming to BIS standards shall be accepted</p>
8	Fixing, connection & commissioning of above supplied	<p>The cost covers fixing, connection and commissioning of single phase electronic kWh energy meter (supplied against item no. 7 of schedule 2B) including mounting on meter board/panel, making proper electrical terminations with suitable lugs, tightening of connections, providing necessary hardware, testing for proper functioning, sealing as per standard practice and handing over the installation in fully operational condition, complete in all respects. This also includes transportation of the material at site.</p>
9	Plug and socket with mcb 25A metal clad box with metal plug and top	<p>Supply of AC starter unit suitable for outdoor/indoor use, comprising 25A/16A, 230V, single-phase industrial type metal clad/polycarbonate plug and socket, complete with 16A/25A SP MCB of reputed make (such as Anchor/Havells/Schneider or equivalent), housed in IP55/IP65 rated weatherproof enclosure, with all necessary accessories, conforming to relevant IS/IEC standards and as per site requirements.</p>
10	Fixing connection & commissioning of above	<p>Installation/fixing of AC starter unit (supplied against item no. 9 of schedule 2B) including mounting on wall/structure, cable termination with glands/lugs, earthing, dressing of wiring, and testing for proper operation, complete as per the directive of the authorized representative of Sr.DEE (RS&G)/BSP.</p>
11	Supply of SPN Distribution board conforms to IS-13032 DBs are phosphatised and painted with epoxy polyester based powder paint, neutral link earth terminal & bus-bar single door 6 way.	<p>The price shall cover supply of SPN Distribution Board, 240V, single-phase, single-door, 6-way type, conforming to IS:13032 and IS:8623 (Part 1), fabricated from CRCA sheet steel duly phosphatised and powder coated with epoxy polyester paint, complete with neutral link, earth terminal, tinned copper bus-bar, and provision for incoming and outgoing MCBs, suitable for flush or surface mounting, complete in all respects as per directive of the authorized representative of Sr.DEE (RS&G)/BSP.</p> <p>Make: Havells, Legrand, Anchor, BCH, L&T, Finolex, Wipro, Schneider Electric, ABB, IndoAsian, Hager or equivalent makes conforming to BIS standards shall be accepted</p>
12	Supply of Double pole isolator 40Amp	<p>The price shall cover supply of Double pole isolator 40Amp Conformity of the specification: as per IS/IEC IS/IEC 60947-3 or latest</p> <p>No. of pole: 2</p>

		<p>Rated voltage (in Volts): 240 V, AC Rated Current (in Ampere): 40 Instantaneous tripping current type: C Rated Short circuit capacity (in Ampere): 10000 Make: Siemens, Schneider, Havells, GE, Standard, Indoasian, Control & Switchgear, Legrand, HPL, Hager, L&T/ Lauritz Knudsen, ABB, Anchor by Panasonic, Polycab or equivalent makes conforming to BIS standards shall be accepted.</p>
13	Supply of MCB SP 6-32 A capacity	<p>Supply of Miniature Circuit Breaker (MCB), Single Pole (SP), rated current 6A to 32A, suitable for 240V, single-phase, 50 Hz AC supply, with rated breaking capacity not less than 10 kA at 230V, conforming to IS/IEC 60898-1 (latest).</p> <p>Make: Siemens, Schneider, Havells, Standard, GE, Standard, Indoasian, Control & Switchgear, Legrand, Hager, L&T (Lauritz Knudsen), Sigma, Eaton, ABB or equivalent makes conforming to BIS standards shall be accepted.</p>
14	Fixing, connection & commissioning of DB/bus-bar chamber supplied above	<p>The DB supplied (against item No: 11 of Schedule 2B) will be fixed with help of fixers supplied by the tenderer. The fixers must be painted with corrosion resistant paint & should have thickness at least 5 mm, & 30 mm wide, suitable length & enough strength to withstand the weight of the DBs for a long period. The nut bolts used for fixing should have 10 mm dia or as per requirement & be strong enough to withstand the load of the DB. The work include termination of the incoming & outgoing cables inside the DB with proper size of lugs supplied & fixed by the contractor. The crimping of lugs must be done using a crimping tool with perfect finish. All the material & labor required to complete the above work shall be supplied by the contractor & as per the directive of the authorized representative of Sr.DEE (RS&G)/BSP.</p>
15	Supply of 9W LED retrofit lamp B22 holder base with polycarbonate body.	<p>The price shall cover supply of 9W LED Retrofit Lamp, B22 holder type, rated for 220-240V AC, 50Hz, with polycarbonate diffuser housing and aluminium heat sink, minimum efficacy ≥ 100 lm/W, PF ≥ 0.9, THD $\leq 20\%$, and average life $\geq 25,000$ burning hours.</p> <p>Make – Philips, Osram, Havells, Wipro, Syska, Oreva, Orient, Surya, Halonix or equivalent makes conforming to BIS standards shall be accepted.</p>
16	Supply of ELCB 32 amps, 2 pole 300 MA sensitivity.	<p>The price shall cover Supply of Earth Leakage Circuit Breaker (ELCB) 32A 2P 300mA, double pole, 32 Amps rating, 230V AC, 50Hz, with sensitivity of 300 mA, complete with DIN rail mounting, suitable enclosure, interconnections, accessories and all necessary hardware, conforming to relevant IS/IEC standards, as required at site.</p> <p>Make: Siemens, Schneider, Havells, Standard, Crabtree, GE, Indoasian, Control & Switchgear, Legrand, Hager,</p>

17	Fixing of ELCB 32 Amps. 2 pole 300 MA sensitivity	<p>L&T, Eaton, ABB or equivalent makes conforming to BIS standards shall be accepted.</p> <p>The ELCBs/RCCB (supplied against item nos. 16 of schedule-2B) shall be fixed at the location identified by authorized representative of Sr. DEE(RS&G)/BSP by the use of suitable bolts etc. supplied by the contractor. The connection & testing shall be done by contractor. All wires shall be connected with the use of proper lugs and proper connection with earth continuity conductor of 18 SWG PVC copper wire shall be made as per directives of authorized representative of Sr. DEE(RS&G)/BSP.</p>
18	Concealed wiring for the 6 Amps. Light, fan & 5 Amps socket with 1.5 sqmm. FRLS copper wire including supply of all materials	<p>The Concealed wiring for lights & fan, 5Amps socket & 6A plug points shall be through PVC Pipe, heavy type ISI marked of size 20/25/32 mm. The wiring shall be done with PVC insulated stranded copper conductor 1.5 sq. mm 650/1100 volt grade FRLS type ISI marked as per directives of authorized representative of Sr. DEE (RS&G)/BSP. The wiring through walls shall pass through PVC pipes 20/25/32 mm size & heavy type ISI marked. Switch socket and board shall be supplied by the contractor. An earth continuity conductor of 18 SWG PVC copper wire shall be run all along the piping and shall be connected. For convenience, wiring for light & fan points shall be done through common PVC pipe & Earthing should be provided in earth point of 3/5 pin plug point.</p> <p><i>Make for PVC pipe- Polycab Anchor Finolex Bajaj Precision /Richa or equivalent makes conforming to BIS standards shall be accepted.</i></p> <p><i>Make for Switch/Socket - Havells brands L&T Legrand/ Anchor/ ROMA/HPL. or equivalent makes conforming to BIS standards shall be accepted.</i></p> <p><i>Make for copper or equivalent makes conforming to BIS standards shall be accepted. wire, Polycab/Havells/KEI/Finolex/RR Kabel/Uttracab or equivalent makes conforming to BIS standards shall be accepted.</i></p>
19	Concealed Wiring for 6-16Amps plug points with PVC Pipe and PVC insulated copper conductor 2.5 sq. mm. size with supply of all materials.	<p>The concealed wiring for 6-16 A plug points, individual or combined switch, socket & fuse shall be through PVC pipe 20/25/32mm size/dia as required. PVC pipe shall be heavy type ISI marked with provision of suitable Tees, bends, elbows, junction boxes as required. The wiring shall be with PVC insulated stranded individual copper conductor 2.5 sq.mm for one socket, 4 Sq. mm if 2 to 3 sockets, 6 Sq. mm if 4 to 5 sockets in a board. The wires should be 650/1100 volt grade FRLS type of ISI marked with additional properties of FRLS. A separate circuit should be drawn from the main board for the plug point. An earth continuity conductor of 18 SWG PVC copper shall be run from the main board to the plug socket and connected to the earth terminal of the plug socket. Wherever convenient, wiring for light, fan & Plug points shall be done through</p>

		<p>common pipe. All materials shall be supplied by the contractor.</p> <p>The work shall be done as per the directive of the authorized representative of Sr.DEE (RS&G)/BSP.</p> <p>Make for PVC pipe- Polycab/Anchor/Finolex/Bajaj/Precision /Richa or equivalent makes conforming to BIS standards shall be accepted.</p> <p>Make for Switch/Socket - Havells brands/L&T/ Legrand/Anchor/ ROMA/HPL. or equivalent makes conforming to BIS standards shall be accepted.</p> <p>Make for copper wire: Polycab/Havells/KEI/Finolex/RR Kabel/Ultracab. or equivalent makes conforming to BIS standards shall be accepted.</p>
20	Concealed Wiring for Sub-circuits.	<p>The Concealed/Casing capping wiring from main switch boards to distribution switch boards & from one room to another room, from DB supplied & fixed up to the main board is referred to as sub-circuit. The sub-circuits shall be run through Casing capping /PVC Pipe of different size as required. Casing capping /PVC Pipe shall be heavy type ISI marked (Make- Polycab/Anchor/Finolex/Bajaj/Precision/ Richa or equivalent makes conforming to BIS standards shall be accepted.). The wiring through walls shall pass through Casing capping /PVC pipes. PVC insulated copper stranded conductor 6.0 sq. mm size, 650 – 1100 volts 7 grade of ISI marked FRLS type shall be used. A number of sub-circuits may be run through one Casing capping /PVC pipe for convenience of wiring. One sub- circuit shall consist of two wires one phase & one neutral. Rate for one meter length of the sub circuit shall be taken 01 meter of phase wire & 01 meter neutral wire. Suitable Tees, bends, elbows, junction boxes etc for both surface & concealed wiring as required shall be supplied & fixed by the contractor. In no case the PVC pipe shall be bend to change the direction of wiring .An earth continuity conductor of 1mm PVC copper wire shall be run along the sub-circuit wires & shall be connected to DBs.</p> <p>Make for copper wire: Polycab/Havells/KEI/Finolex/RR Kabel/Ultracab. or equivalent makes conforming to BIS standards shall be accepted.</p>
21	Supply of LED Inverter Batten 20 W 6500 K Tubelight polycarbonate body	<p>Supply of LED Inverter Batten 20 W, 6500 K (Tube light type) (+/-500 K)with high-efficiency SMD LEDs, polycarbonate body and diffuser, minimum IP65 protection ,minimum efficacy ≥ 100 lm/W, CRI ≥ 80, operating voltage 140-270 V AC, with inbuilt rechargeable battery for minimum 3 hours backup during power failure, surge protection ≥ 2.5 kV, power factor ≥ 0.9, THD $\leq 10\%$.</p>

		<p>complete with mounting accessories. The product shall be BIS/ISI marked and conform to relevant IS standards. Report to be mandatory submitted along with the offer LM 79& Test report in respect of the luminaries test certificates should be from Central Government LAB /NABL/ILAC accredited manufacturer/LAB. LM 80 Test report in respect of the LED used in the offered luminaries should be from Central Government LAB /NABL/ILAC accredited manufacturer/LAB.</p> <p>Make – Philips ,Osram ,Havells ,Wipro, Syska ,Oreva ,Polycab, Orient , Surya, Halonix or equivalent makes conforming to BIS standards shall be accepted.</p>
22	Supply of 20W LED tube light supply voltage 230V 50Hz built in electronic driver .	<p>Supply of 20W LED tube light fittings complete with all accessories. Supply voltage 230V 50Hz built in electronic driver. Detailed technical specification is enclosed as Annexure-I</p> <p>Make – Philips ,Osram ,Havells ,Wipro, Syska ,Oreva ,Polycab, Orient , Surya, Halonix, or equivalent makes conforming to BIS standards shall be accepted.</p>
23	Supply of Electric Ceiling Fan BLDC Type Sweep Size (mm):1200, rating: 5star, type of regulator: Electronic/remote	<p>Supply of Electric Ceiling Fan BLDC Type Sweep Size (mm):1200, rating: 5 star, type of regulator: Electronic/remote , with 5 year warranty.</p> <p>Make: Khaitan, Havells, Crompton Greaves, Usha, Philips , Halonix,Polycab, bajaj or equivalent makes conforming to BIS standards shall be accepted.</p>
24	Fixing of lights/fans supplied as above with supply of flexible wire to connection the nearest ceiling rose.	<p>The retrofit lamp,bulkhead,recessed light,inverter batten,tube light,ceiling fan,exhaust fan,call bell & other LED light (supplied against item no. 15,21,22,23,25,26,32 of schedule 2B) shall be fixed at location mentioned by Sr. DEE (RS&G)/ Bilaspur 's authorized representative at site with use of proper size of P.K. screws & PVC sleeves shall be connected to supply through PVC pipe/PVC casing capping wiring piercing across the wall .The fitting shall thus be connected to the nearest ceiling rose by the use of 0.75 sq.mm. FRLS flexible wire The fan regulators shall also be fitted on the switch board. An earth continuity conductor of 18 SWG PVC copper wire shall be run all along the piping and shall be connected to the down rod of the fan. Make for Ceiling Rose- Polycab/Anchor/Panasonic/Finolex/ Bajaj / Precision /Richa or equivalent makes conforming to BIS standards shall be accepted . Make for Switch/Socket/modular board- Havells brands/L&T/ Anchor/ Legrand/ ROMA/HPL. Or equivalent makes conforming to BIS standards shall be accepted Make for copper wire: Polycab/Havells/KEI/Finolex/RR Kabel/Ultracab or equivalent makes conforming to BIS standards shall be accepted</p>

25	Supply of ding dong type call bell.	The ding dong call bell shall be suitable for use with 220 volt 50 Hz. AC supply, one bell push shall be supplied along with the ding dong bell. Make: Anchor Roma, Legrand, GM Modular, Orient or equivalent makes conforming to BIS standards shall be accepted.
26	Supply of Exhaust fan 300 mm sweep complete with accessories.	Supply of Exhaust Fan non-Capacitor Type Sweep Size (mm): 300, No. of pole: 4, Insulation of material class: B or better Make: Khaitan, Havells, Crompton Greaves, Usha, Philips, Polycab or equivalent makes conforming to BIS standards shall be accepted. Warranty period - 2 yr.
27	Supply of DP MCB 16 A flush mounting MCB complete with sheet steel enclosure powder painted for use as main switch.	Supply of Miniature Circuit Breaker (MCB) DP 16 Amps penta flush mounting with sheet metal enclosure powder painted for use as main switch with ratings 250 Volts AC 50 Hz with breaking capacity 10 KA as per IS 8828-1996 IEC-60898-1 (To be furnished by manufacturer) having facilities for termination of Aluminum cable, fixing arrangement for mounting on steel/DIN rail. Make: Siemens, Schneider, Havells, Standard, Crabtree, GE, Standard, Indoasian, Control & Switchgear, Legrand, Hager, L&T, Eaton or equivalent makes conforming to BIS standards shall be accepted.
28	Fixing and connection of MCB DB supplied as above with supply of all material.	The MCB DB supplied (supplied against item no. 27 of Schedule-2B) shall be fixed at the location identified by site engineer by the use of 04 nos. bolts size 100mmx6mm supplied by the contractor. The connection & testing shall be done by contractor. All wires shall be connected with the use of copper lugs & clamping kits.
29	Concealed wiring for 20 Amps plug points with PVC pipe & PVC insulator copper conductor 4 sq mm size with supply of all material.	The concealed wiring for 20A plug points, shall be through PVC pipe of suitable size as required. PVC pipe shall be heavy type ISI marked. The wiring shall be with PVC insulated stranded individual copper conductor 4 sq. mm. The wires should be 650/1100 volt grade FRLS type of ISI marked, conforming to IS-694. A separate circuit should be drawn from the outgoing of a 20 Amps F.T. fuse provided on the main board for the plug point. An earth continuity conductor of 18 SWG PVC copper shall be run from the main board to the plug socket and connected to the earth terminal of the plug socket. Suitable Tees, bends, elbows, junction boxes as required shall be supplied and fixed by the contractor. Wherever required, wiring for light, fan & Plug points shall be done through common pipe. All materials shall be supplied by the contractor. In no case the PVC pipe shall be bend to change the direction of wiring. The work shall be done as per the directive of the authorized representative of Sr. DEE (RS&G)/BSP. Make for PVC pipe- Polycab/Anchor/Finolex/Bajaj/Precision/Richa or equivalent makes conforming to BIS standards shall be accepted.

8

20/11/2023

		<p>Make for Switch/Socket - Havells brands/L&T/ Legrand/ Anchor/ ROMA/HPL or equivalent makes conforming to BIS standards shall be accepted</p> <p>Make for copper wire: Polycab/Havells/KEI/Finolex/RR Kabel/Ultracab or equivalent makes conforming to BIS standards shall be accepted</p>
30	Supply of ELECTRIC WATER HEATER-GEYSER - Tank Capacity 25 Liter, 5star rated Material of Inner Container: Stainless Steel, Material of Outer Container: ABS, warranty: 3year.	<p>The cost covers supply of ELECTRIC WATER HEATER-GEYSER - Tank Capacity 25 Liter, 5star rated Material of Inner Container: Stainless Steel, Material of Outer Container: ABS, warranty: 3year. It should have, thermostat, indicating lamp, thermal cut out, drain plug, provision for vent pipe/pressure relief valve, non return valve & other accessories.</p> <p>Make- Orient, kenstar, Bajaj, Usha, Havells or equivalent makes conforming to BIS standards shall be accepted</p>
31	Fixing of storage type geyser 25litrs capacity.	Fixing, installation and connection of 25-litre storage type electric geyser (supplied against item no. 30 of Schedule-2B) including wall mounting with suitable brackets/anchor fasteners, making plumbing and electrical connections with approved materials, testing for proper operation and ensuring leak-free performance, complete in all respects.
32	Supply of Mirror/decorative/bracket light 20W	<p>The cost covers Supply of 20W Mirror / Decorative / Bracket type LED light fitting (as per requirement), Color Temperature 6500K (+/-500 K), System Efficacy ≥ 100 lm/W, Power Factor ≥ 0.95, CRI ≥ 80, THD $\leq 10\%$, Input Voltage 140V-270V AC, 50Hz, with inbuilt electronic driver, high-efficiency LED module, minimum IP20 protection, polycarbonate/metal body, warm white / cool white light as required, complete with all mounting accessories, conforming to relevant IS standards.</p> <p>Make - Philips, Osram, Havells, Wipro, Oreva, Polycab, Orient, Surya, Halonix, Syska or equivalent makes conforming to BIS standards shall be accepted</p>
C: Other electrical requirements for settlement area of quarters		
1	Supply of 7 mtrs height hot deep galvanized octagonal pole (single arm)	<p>The rate includes supply of 7 mtr height hot dip galvanized octagonal pole with single arm bracket as per IS:2629/IS:2633/IS:4759 standards having sheet thickness of 3 MM of make- Vakrangee, Bajaj/ Zenieth/TATA/Arya/Zenco Industrial Corpn/Shah Phylon/Philips or equivalent makes conforming to BIS standards shall be accepted. The single arm bracket of length 1500MM along with spigot shall be hot dip galvanized. The internal and external surface of the pole shall be galvanized with minimum coating thickness of 65 microns. The pole shall have camouflaged junction box having necessary terminal board with compression gland for termination of incoming & outgoing supply cable. The pole</p>

P

Rudra

		shall have approximately top and bottom dia of 70/130 MM respectively and shall also supplied with foundation bolts 04 nos 'J' type of size 20 MM (EN8 grade). Anchor plate shall be of 3MM thickness, base plate of size 220X220X12MM approximate
2	Excavation of earth, provision of Foundation and erection of hot deep galvanized octagonal poles with aluminium & red oxide paint	The price shall cover the cost of transportation of 7 mtr height hot deep galvanized octagonal pole(supplied above) to the work site and casting of concrete foundation for erection of pole with aluminium& red oxide paint. The rate includes excavation of earth pit in any kind of soil and casting of PCC foundation (1000x1000x100 MM) ratio 1:4:8 at the bottom and over which RCC foundation (350x350x1200MM) ratio 1:2:4 shall be done. The top portion of the foundation shall be 300MM above the ground level. The J bolts shall be fixed in the RCC foundation as per the template size of the octagonal pole as per the direction of site in charge. The price shall also include back filling and dressing of earth and debris cleaning after completion of work in all respect.
3	Supply of junction box 300x350x125 mm size material thickness 1.5mm with 1 no. 6A HRC fuse with base and 1 no. TPN terminal block stud type suitable for 25 sqmm cable.	The street light junction box to be supplied shall be made out of 1.5 mm thick CRCA sheet steel powder coated exterior, with gasket, hinged door with IP-55 protection or better, mounting plate made of 2mm thick CRCA sheet steel, cable gland plate 2mm thick provided at bottom, with cam type locking arrangement & with brackets for pole mounting. The junction box should contain 1 no. 6A HRC fuse with base and 1 no. TPN terminal block stud type suitable for 25 sq mm cable. The dimension of the DB is 300 mm x350 mm x125 mm (WxHxD). The internal wiring shall be done by 2.5 sq-mm FRLS wire.
4	Fixing & connection of junction boxes	The street light junction box (supplied against item no. 3 of schedule-2 C) shall be fitted on the street light pole(s) at the place identified by the authorized representative of Sr. DEE(RS&G) BSP. The work include connection of incoming & outgoing cables on the terminals of the DB. All materials &labour required for fixing shall be supplied by the contractor. Make for copper wire: Polycab/Havells/KEI/Finolex/RR Kabel/Ultracab orequivalent makes conforming to BIS standards shall be accepted
5	Supply of LED street light Luminaries 45W complete with all accessories.	Supply of LED street light Luminaries 45W complete with all accessories. Detailed technical specification is enclosed as Annexure- II. Make -Philips, Osram, Havells, Wipro, Syska, Oreva, Polycab, Orient, Surya, Halonix, or equivalent makes conforming to BIS standards shall be accepted
6	Fixing & connection of street light luminaire supplied above.	The luminaries (supplied against item No. 5 of schedule-2C) shall be fixed on existing/newly erected Rail poles/SST poles/ wall of service buildings or at place as directed by authorized representative of

		Sr.DEE(RS&G)/BSP. Connection to the fittings shall be done through 2 core un-armoured 2.5 sq. mm. copper cable or 4 sq. mm aluminium cable drawn from junction boxes or from overhead line as per directives of site engineer. Any other minor items required for execution of above work shall be supplied by the contractor.
7	Supply of class A MS pipe/MS clamp for clamping the light fitting at suitable design and size.	The price shall cover supply of Class A MS pipe of suitable dia. For fixing in street light fittings & Supply of MS clamps size 25mm x 5mm. The quantity of MS pipe of suitable dia. & MS clamps shall be decided by the authorized representative of Sr.DEE (RS&G)/BSPs. The work also includes the fabrication works required for fixing the fittings into poles. After fabrication of pipe & clamps it shall be painted with red oxide primer & Aluminium paint.
8	Trimming of big branches above 15 cm.	Trimming of Big branches above 15 CM Diameter with contractor's labour & tools with sufficient protection not to damage any other railway material. The branches to be cut have to be decided by site engineer. The tree branches to be collected by the contractor & to be deposited at the place identified by the site engineer.
9	Trimming of small branches dia. Above 5 CM & less than 15 cm.	Trimming of small branches diameter Above 5 CM & less than 15 CM with contractor's labour & tools with sufficient protection not to damage any other railway material. The branches to be cut have to be decided by site engineer. The tree branches to be collected by the contractor & to be deposited at the place identified by the site engineer.
10	Disconnection of existing wiring.	The work consists of disconnection and removal of wiring/cable/box etc & handing over the materials to concerned authorized representative of Sr.DEE (RS&G)/BSP. Necessary care should be taken during Disconnection & dismantling work so that the cable may be obtained in its maximum length & in good condition. Boxes, DB shall be removed in such a manner that the usable component may not be damaged.
11	Construction of Cement Concrete foundation containing cement concrete on the proportion 1:3:6 of cement, sand & ballist size of 40mm.	The price shall cover excavation, supply & handling of all materials & accessories temporary arrangement for excavation in hard soil and concrete/masonry drains/walls requiring use of chisel & hammer, shoring where necessary casting concrete including frame work where necessary tamping of concrete, grouting of poles and finishing the top of concrete foundation. The price also includes the dismantling of all connected temporary arrangements, backfilling with earth & compacting the same to required height & width as per directive of authorized representative of SR.DEE (RS&G)/BSP. The authorized representative of SR.DEE (RS&G)/BSP shall certify the use of chisel & hammer if necessary. The price shall be paid on the basis of total volume of the concrete foundation. The depth of excavation shall be measured from the formation level to

		the maximum excavated point. Cement concrete on the proportion 1:3:6 of cement sand & ballast size of 40mm. The Cement concrete foundations may be for gate support pillars, fencing angle foundations, muffing & concreting of existing structures and foundation for SST pole etc. SST poles/Rail poles as per the directive of the authorized representative of SR.DEE (RS&G)/BSP. The proper curing work shall be done by the contractor. Preferably suitable scroll of PVC pipe or G.I. pipe to be used during foundation casting for pole erection after sufficient time for setting.
12	Supply of DB containing one TP MCCB 100 Amps as incoming & 2 nos 63 Amps TP MCBs as outgoing complete with neutral bar din rail etc enclosed in a powder painted metallic enclosure	Supply of DB with enclosure made out of CRCA steel sheet 1.2 mm thick mounting plate made using 2 mm thick CRCA sheet steel, cable gland plate 2 mm thick provided at the bottom, Cam locking arrangement, Single door, pole mounting bracket supplied separately, containing one 100 Amps TP MCCB breaking capacity 25 KA as incoming & 2 nos TP MCB 63 Amps breaking capacity 10 KA. The DB should have suitable dimension to carry above items. The DB shall contain cable entry holes for cables. The DB shall also contain the cable terminal links, neutral link & earth bar. Make for MCB/MCCB: Siemens, Schneider, Havells, GE, Standard, Indoasian, Control & Switchgear, Legrand, HPL, Hager, L&T or equivalent makes conforming to BIS standards shall be accepted
13	Fixing of above DB.	The DB (supplied under item no. 12 of Schedule-2C) shall be fixed as per directive of authorized representative of Sr.DEE/RS&G/BSP. The incoming cable & outgoing cables shall be connected to the terminals & from the terminals to the incoming of the MCCB/MCBs. The material & labour required for fixing all above items shall be supplied by the contractor. The method of fixing & cable termination shall be done as per the directive of the authorized representative of SR.DEE (RS&G)/BSP. Make for copper wire: Polycab/Havells/KEI/Finolex/RR Kabel/Ultracab or equivalent makes conforming to BIS standards shall be accepted

SCHEDULE-3

Electrical portion of works "Bilaspur Division: Construction of Type IV six unit Quarters for staff on replacement account under SSE/Work/South in the jurisdiction of Sr. DEN/Sett/Bilaspur"

A: Type IV (per qtr)		Detailed technical specification/ Scope of work of items appearing in schedule- 3
Item No.	Description of Items	

1	Supply of Crosslinked Polyethylene Insulated Armoured Cable 4x25sqmm with Aluminium conductor, suitable for rated voltage at 1100 volts grade, as per IS:7098 (Part 1): 1988 latest.	Supply of Crosslinked Polyethylene Insulated Armoured Cable 4x25sqmm with Aluminium conductor, suitable for rated voltage at 1100 volts grade, as per IS:7098 (Part 1): 1988 latest. Make: Polycab, Havells, KEL, Finolex, RR Kabel, Ultracab, Vishal Cables, or equivalent makes conforming to BIS standards shall be accepted.
2	Laying of cable of lower size (upto 4x35 Sq. mm) in Polythene (HDPE) pipe without digging of earth dressing of land including supply of HDPE pipe & all materials [HDPE pipe 50 mm Diameter, PN 6 or above, conforming to IS 4984 : 2016 or relevant IS standard type: coil/straight as per requirement]	The cable of lower size upto 4x35 sq.mm (supplied by Railway) shall be laid in cable trenches along the road/track/ yard without digging in all sorts of soil with/without HDPE Pipe including supply of HDPE pipe & all materials.[HDPE pipe 50 mm Diameter, PN 6 or above, conforming to IS 4984: 2016 or relevant IS standard type: coil/straight as per requirement] as per site conditions requirements. The cable laying shall be done and back filling and properly dressing of land there after laying of cable with cement concrete/ Bitumen properly to the original condition. More than one cable be laid on the same trench if required. The path and type of cable to be laid on that path shall be decided by authorized representative of Sr.DEE/ RS&G/BSP at site. If anything, get damaged/partially damaged the same shall be repaired as far as possible to original by the contractor. Cable shall be supplied by Railway. Cable route marker shall be provided at appropriate distance on cable route by contractor after cable laying.
3	Trenching/Digging of earth 1 mtr deep for cable laying.	The work consists of Trenching/Digging of earth 1mtr deep for cable laying. The trenching /digging shall be done in all sort of soil as per the directive of the authorized representative of Sr.DEE (RS&G)/BSP. If anything gets damaged/partially damaged during trenching /digging the same shall be repaired as far as possible to original. During course of digging if depth of 1 meter is not feasible due to technical reason then the depth may be reduced & payment will be done on pro rata basis
4	Laying of cable of in GI pipe including supply of all materials (including t.G.I. Pipe & except Cable). With supply of G.I. pipe dia. 50mm thickness min. 2mm	This item includes Laying of cable of in GI pipe including supply of all materials. With supply of G.I. pipe dia. 50mm thickness min. 2 mm. The Cable laying across the road /track/yard should be done minimum one-meter-deep trench only through GI pipe of suitable diameter & wall thickness. Each cable should be laid through separate GI pipe. If any road/platform is cut for trenching, the same shall be restored after laying of cable with cement, bitumen properly to the original condition. GI pipe shall be used. All supporting materials shall be supplied by the contractor except cable. For underground cable laying cable route marker at appropriate distance shall be provided by contractor after cable laying. The work shall be carried out according to relevant IS std. and as per directive of authorized representative of Sr. DEE(RS&G)/BSP. If anything gets damaged/partially damaged the same shall be repaired as far as possible to original. The depth of cable trench may be varying as per site conditions. During course of digging if depth of 1 meter is not feasible due to technical reason then the depth may be reduced & payment will be done on pro rata basis.

5	Laying of cable in open air/concealed in wall with supply of all material.	Laying of cables (supplied by Railway) in open air/ concealed, should be supported with G.I. wire if laid in between two structure (Pole to Pole), such that there should not be any mechanical load on cable. Laying of cable should be supported with proper size of 'U' clamp & nut bolts, 1mtr apart, if laid with support of walls. Laying of cable should be properly supported if laid under MS structure/Shelter etc. Laying of cable in open air consists of terminating it to the DB fixed on a SST Poles/Mast or any other supporting structure with proper lugs and glands. The cable shall be laid through class A GI pipes (supplied by Railway) of 40mm dia. or other size, 3 Mtr/ 2 mm long on the vertical runs over the pole/walls. The cable & the pipe shall be properly clamped to the pole/walls with clamps made out of MS flat iron of 25mm x 5mm and painted to be supplied by the contractor. All materials shall be supplied by the contractor. The work shall be done as per the directive of the authorized representative of Sr.DEE (RS&G)/BSP.
6	Earthing arrangement	Supply &Laying of earth cone with supply of all materials including GI strip. The earth cone supplied shall be fabricated from Class-B, G.I. pipe confirming to IS: 3043 - 1987 (Reaffirmed 2006) amended up to date or relevant IS standard and as per CEE/GRC drawing No. CEE/A4/P-105. The Earth pipe should have outer dia. 60.2 mm, inner dia. 54.4 mm & thickness 2.9 mm. (aprx.) (Make for GI pipe: SAIL, JINDAL, Surya, TATA, Prakash, PSST or equivalent makes conforming to BIS standards shall be accepted.). The Earth Cone shall be erected as per CEE/GRC's drawing No. CEE/G/A3/P-134 including supply of all materials. The Earth cone shall be connected by the contractor to the DBs / Poles as described in the erection/installation of the respective materials with GI Strip of size 25 mm x 3 mm (minimum) (or as specified) with hot-dip galvanization of uniform coating. Make for GI strip: SAIL/Jindal/Surya/TATA/Prakash/PSST or equivalent approved make. The location for earth cones shall be indicated by the authorized representative of SR.DEE (RS&G)/ BSP. Earth values after meggering to be written on the earth pit. M.S. Cover plate 3 mm thick/concrete to be provided on earth pit. All joints shall be properly cleaned. The work shall be carried out according to relevant IS std. and as per directive of authorized representative of Sr.DEE(RS&G)/BSP.
8	Supply of electronic KWH meter (energy meter) 5-30 amps AC static 230 volt accuracy class-I	The price shall cover Supply of single phase AC static electronic kWh energy meter, current rating 5-30 Amps, operating voltage 230V $\pm 20\%$, accuracy Class-I, conforming to IS 13779 / IEC standards, LCD display with backlight, LED indicators for energy pulse, tamper-proof polycarbonate enclosure, suitable for wall mounting, with facility for recording tamper events, complete in all respects. Makes: HPL, Secure Meters, Genus Power, Schneider Electric, L&T Electrical & Automation, C&S ELECTRIC or equivalent makes conforming to BIS standards shall be

f

Datta

		accepted
10	Fixing connection & commissioning of above supplied	The cost covers fixing, connection and commissioning of single phase electronic kWh energy meter (supplied against item no. 8 of schedule 3A) including mounting on meter board/panel, making proper electrical terminations with suitable lugs, tightening of connections, providing necessary hardware, testing for proper functioning, sealing as per standard practice and handing over the installation in fully operational condition, complete in all respects. This also includes transportation of the material at site.
11	Plug and socket with mcb 25A metal clad box with metal plug and top	Supply of AC starter unit suitable for outdoor/indoor use, comprising 25A/16A, 230V, single-phase industrial type metal clad/polycarbonate plug and socket, complete with 16A/25A SP MCB of reputed make (such as Anchor/Havells/Schneider or equivalent), housed in IP55/IP65 rated weatherproof enclosure, with all necessary accessories, conforming to relevant IS/IEC standards and as per site requirements."
12	Fixing connection & commissioning of above	Installation/fixing of AC starter unit (supplied against item no. 11 of schedule 3A) including mounting on wall/structure, cable termination with glands/lugs, earthing, dressing of wiring, and testing for proper operation, complete as per the directive of the authorized representative of Sr.DEE (RS&G)/BSP
11	Supply of SPN Distribution board confirms to IS-13032 DBs are phosphatised and painted with epoxy polyester based powder paint, neutral link, earth terminal & bus-bar single door 8 way	Supply of SPN (Single Pole & Neutral) Distribution Board, 8-way, suitable for 240V, single-phase, 50 Hz AC supply, complete with tinned copper busbar, neutral link, and earth terminal. The DB shall be fabricated from CRCA sheet steel, duly phosphatised and finished with epoxy polyester powder coating for corrosion resistance. The enclosure shall be single door type including detachable gland plate, and suitable for wall mounting. It shall conform to IS 13032 and relevant IS/IEC standards. Make: - Havells, Anchor, L&T, Sigma, Finolex, Wipro, Schneider Electric, ABB, Legrand, IndoAsian or equivalent makes conforming to BIS standards shall be accepted.
12	Supply of Double pole isolator 40Amp	The price shall cover supply of Double pole isolator 40Amp Conformity of the specification: as per IS/IEC IS/IEC 60947-3 or latest No. of pole: 2 Rated voltage (in Volts): 240 V, AC Rated Current (in Ampere): 40 Instantaneous tripping current type: C Rated Short circuit capacity (in Ampere): 10000 Make: Siemens, Schneider, Havells, GE, Standard, Indoasian, Control & Switchgear, Legrand, HPL, Hager, L&T/ Lauritz Knudsen, ABB, Anchor by Panasonic, Polycab or equivalent makes conforming to BIS standards shall

		be accepted.
13	Supply of MCB SP 6-32 A capacity.	Supply of Miniature Circuit Breaker (MCB). Single Pole (SP), rated current 6A to 32A, suitable for 240V, single-phase, 50 Hz AC supply, with rated breaking capacity not less than 10 kA at 230V, conforming to IS/IEC 60898-1 (latest). Make: Siemens, Schneider, Havells, Standard, GE, Standard, Indoasian, Control & Switchgear, Legrand, Hager, L&T (Lauritz Knudsen), Sigma, Eaton, ABB or equivalent makes conforming to BIS standards shall be accepted.
14	Fixing, connection & commissioning of DB/bus-bar chamber supplied above.	The DB supplied (against item No: 11 of Schedule 3A) will be fixed with help of fixers supplied by the tenderer. The fixers must be painted with corrosion resistant paint & should have thickness at least 5 mm, & 30 mm wide, suitable length & enough strength to withstand the weight of the DBs for a long period. The nut bolts used for fixing should have 10 mm dia or as per requirement & be strong enough to withstand the load of the DB. The work include termination of the incoming & outgoing cables inside the DB with proper size of lugs supplied & fixed by the contractor. The crimping of lugs must be done using a crimping tool with perfect finish. All the material & labor required to complete the above work shall be supplied by the contractor & as per the directive of the authorized representative of Sr.DEE (RS&G)/BSP
15	Supply of 9W LED retrofit lamp B22 holder base with polycarbonate body.	The price shall cover supply of 9W LED Retrofit Lamp, B22 holder type, rated for 220-240V AC, 50Hz, with polycarbonate diffuser housing and aluminium heat sink, minimum efficacy ≥ 100 lm/W, PF ≥ 0.9 , THD $\leq 20\%$, and average life $\geq 25,000$ burning hours. Make -Philips, Osram, Havells, Wipro, Syska, Oreva, Orient, Surya, Halonix or equivalent makes conforming to BIS standards shall be accepted.
16	Supply of ELCB 32 amps. 2 pole 300 MA sensitivity.	The price shall cover Supply of Earth Leakage Circuit Breaker (ELCB) 32A 2P 300mA, double pole, 32 Amps rating, 230V AC, 50Hz, with sensitivity of 300 mA, complete with DIN rail mounting, suitable enclosure, interconnections, accessories and all necessary hardware, conforming to relevant IS/IEC standards, as required at site. Make: Siemens, Schneider, Havells, Standard, Crabtree, GE, Indoasian, Control & Switchgear, Legrand, Hager, L&T, Eaton, ABB or equivalent makes conforming to BIS standards shall be accepted.
17	Fixing of ELCB 32 Amps. 2 pole 300 MA sensitivity.	The ELCBs/RCCB (supplied against item nos. 16 of schedule-3A) shall be fixed at the location identified by authorized representative of Sr. DEE(RS&G)/BSP by the use of suitable bolts etc. supplied by the contractor. The connection & testing shall be done by contractor. All wires

		shall be connected with the use of proper lugs and proper connection with earth continuity conductor of 18 SWG PVC copper wire shall be made as per directives of authorized representative of Sr.DEE(RS&G)/BSP.
18	Concealed wiring for the 6 Amps. Light, fan & 5 Amps socket with 1.5 sqmm. FRLS copper wire including supply of all materials	<p>The Concealed wiring for lights & fan, 5Amps socket & 6A plug points shall be through PVC Pipe, heavy type ISI marked of size 20/25/32 mm. The wiring shall be done with PVC insulated stranded copper conductor 1.5 sq. mm 650/1100 volt grade FRLS type ISI marked as per directives of authorized representative of Sr.DEE (RS&G)/BSP. The wiring through walls shall pass through PVC pipes 20/25/32 mm size & heavy type ISI marked. Switch socket and board shall be supplied by the contractor. An earth continuity conductor of 18 SWG PVC copper wire shall be run all along the piping and shall be connected. For convenience, wiring for light & fan points shall be done through common PVC pipe & Earthing should be provided in earth point of 3/5 pin plugpoint.</p> <p><i>Make for PVC pipe- Polycab/Anchor/Finolex/Bajaj/Precision/Richa or equivalent makes conforming to BIS standards shall be accepted.</i></p> <p><i>Make for Switch/Socket - Havells brands/L&T/Legrand/Anchor/ROMA/HPL, or equivalent makes conforming to BIS standards shall be accepted.</i></p> <p><i>Make for copper or equivalent makes conforming to BIS standards shall be accepted. wire. Polycab/Havells/KEI/Finolex/RR Kabel/Ultracab, or equivalent makes conforming to BIS standards shall be accepted.</i></p>
19	Concealed Wiring for 6-16Amps plug points with PVC Pipe and PVC insulated copper conductor 2.5 sq. mm. size with supply of all materials	<p>The concealed wiring for 6-16 A plug points, individual or combined switch, socket & fuse shall be through PVC pipe 20/25/32mm size/dia as required. PVC pipe shall be heavy type ISI marked with provision of suitable Tees, bends, elbows, junction boxes as required. The wiring shall be with PVC insulated stranded individual copper conductor 2.5 sq.mm for one socket, 4 Sq. mm if 2 to 3 sockets, 6 Sq. mm if 4 to 5 sockets in a board. The wires should be 650/1100 volt grade FRLS type of ISI marked with additional properties of FRLS. A separate circuit should be drawn from the main board for the plug point. An earth continuity conductor of 18 SWG PVC copper shall be run from the main board to the plug socket and connected to the earth terminal of the plug socket. Wherever convenient, wiring for light, fan & Plug points shall be done through common pipe. All materials shall be supplied by the contractor.</p> <p>The work shall be done as per the directive of the authorized representative of Sr.DEE (RS&G)/BSP.</p> <p>Make for PVC pipe- Polycab/Anchor/Finolex/Bajaj/Precision/Richa or equivalent makes conforming to BIS standards shall be accepted.</p>

		<p>Make for Switch/Socket - Havells brands/L&T/ Legrand/ Anchor/ ROMA/HPL, or equivalent makes conforming to BIS standards shall be accepted.</p> <p>Make for copper wire: Polycab/Havells/KEI/Finolex/RR Kabel/Ultracab, or equivalent makes conforming to BIS standards shall be accepted.</p>
20	Concealed Wiring for Sub-circuits	<p>The Concealed/Casing capping wiring from main switch boards to distribution switch boards & from one room to another room, from DB supplied & fixed up to the main board is referred to as sub-circuit. The sub-circuits shall be run through Casing capping /PVC Pipe of different size as required. Casing capping /PVC Pipe shall be heavy type ISI marked (Make- Polycab/Anchor/Finolex/Bajaj/Precision/ Richa or equivalent makes conforming to BIS standards shall be accepted.). The wiring through walls shall pass through Casing capping /PVC pipes. PVC insulated copper stranded conductor 6.0 sq. mm size, 650 – 1100 volts 7 grade of ISI marked FRLS type shall be used. A number of sub-circuits may be run through one Casing capping /PVC pipe for convenience of wiring. One sub- circuit shall consist of two wires one phase & one neutral. Rate for one meter length of the sub circuit shall be taken 01 meter of phase wire & 01 meter neutral wire. Suitable Tees, bends, elbows, junction boxes etc for both surface & concealed wiring as required shall be supplied & fixed by the contractor. In no case the PVC pipe shall be bend to change the direction of wiring. An earth continuity conductor of 1mm PVC copper wire shall be run along the sub-circuit wires & shall be connected to DBs.</p> <p>Make for copper wire: Polycab/Havells/KEI/Finolex/RR Kabel/Ultracab, or equivalent makes conforming to BIS standards shall be accepted.</p>
21	Supply of LED Inverter Batten 20 W 6500 K Tubelight polycarbonate body	<p>Supply of LED Inverter Batten 20 W, 6500 K (Tube light type) (+/-500 K) with high-efficiency SMD LEDs, polycarbonate body and diffuser, minimum IP65 protection, minimum efficacy ≥ 100 lm/W, CRI ≥ 80, operating voltage 140–270 V AC, with inbuilt rechargeable battery for minimum 3 hours backup during power failure, surge protection ≥ 2.5 kV, power factor ≥ 0.9, THD $\leq 10\%$, complete with mounting accessories. The product shall be BIS/ISI marked and conform to relevant IS standards. Report to be mandatory submitted along with the offer LM 79& Test report in respect of the luminaries test certificates should be from Central Government LAB /NABL/ILAC accredited manufacturer/LAB. LM 80 Test report in respect of the LED used in the offered luminaries should be</p>



		from Central Government LAB /NABL/ILAC accredited manufacturer/LAB. Make – Philips ,Osram ,Havells ,Wipro, Syska ,Oreva ,Polycab, Orient , Surya, Halonix or equivalent makes conforming to BIS standards shall be accepted.
22	Supply of 20W LED tube light supply voltage 230V 50Hz built in electronic driver .	Supply of 20W LED tube light fittings complete with all accessories. Supply voltage 230V 50Hz built in electronic driver. Detailed technical specification is enclosed as Annexure-I Make – Philips ,Osram ,Havells ,Wipro, Syska ,Oreva ,Polycab, Orient , Surya, Halonix, or equivalent makes conforming to BIS standards shall be accepted.
23	Supply of Electric Ceiling Fan BLDC Type Sweep Size (mm):1200, rating: 5star, type of regulator: Electronic/remote	Supply of Electric Ceiling Fan BLDC Type Sweep Size (mm):1200, rating: 5 star , type of regulator: Electronic/remote , with 5 year warranty. Make: Khaitan, Havells, Crompton Greaves, Usha, Philips ,Halonix,Polycab, bajaj or equivalent makes conforming to BIS standards shall be accepted.
24	Fixing of lights/fans supplied as above with supply of flexible wire to connection the nearest ceiling rose.	Theretrofit lamp, bulkhead, recessedlight, inverterbatten, tubelight,ceilingfan,exhaustfan,call bell & other LED light (supplied against item no. 15,21,22,23,25,26,32 of schedule 3A) shall be fixed at location mentioned by Sr. DEE (RS&G)/ Bilaspur 's authorized representative at site with use of proper size of P.K. screws & PVC sleeves shall be connected to supply through PVC pipe/PVC casing capping wiring piercing across the wall .The fitting shall thus be connected to the nearest ceiling rose by the use of 0.75 sq.mm. FRLS flexible wire The fan regulators shall also be fitted on the switch board. An earth continuity conductor of 18 SWG PVC copper wire shall be run all along the piping and shall be connected to the down rod of the fan. Make for Ceiling Rose- Polycab/Anchor/Panasonic/Finox/ Bajaj / Precision /Richa or equivalent makes conforming to BIS standards shall be accepted . Make for Switch/Socket/modular board- Havells brands/L&T/ Anchor/ Legrand/ ROMA/HPL. Or equivalent makes conforming to BIS standards shall be accepted Make for copper wire: Polycab/Havells/KEI/Finox/RR Kabel/Ultracab or equivalent makes conforming to BIS standards shall be accepted
25	Supply of ding dong type call bell.	The ding dong call bell shall be suitable for use with 220 volt ,50 Hz. AC supply , one bell push shall be supplied along with the ding dong bell. Make: Anchor Roma, Legrand, GM Modular,Orient or equivalent makes conforming to BIS standards shall be accepted.
26	Supply of Exhaust fan 300 mm sweep complete with accessories.	Supply of Exhaust Fan non-Capacitor Type Sweep Size (mm):300, No.of pole: 4, Insulation of material class: B or better Make: Khaitan , Havells, Crompton Greaves, Usha, Philips , Polycab or equivalent makes conforming to BIS standards shall

		be accepted. Warranty period -2 yr
27	Supply of DP MCB 16 A flush mounting MCB complete with sheet steel enclosure powder painted for use as main switch.	Supply of Miniature Circuit Breaker (MCB) DP 16 Amps penta flush mounting with sheet metal enclosure powder painted for use as main switch with ratings 250 Volts AC 50 Hz with breaking capacity 10 KA as per IS 8828-1996 IEC-60898-1 (To be furnished by manufacturer) having facilities for termination of Aluminum cable, fixing arrangement for mounting on steel/DIN rail. Make: Siemens, Schneider, Havells, Standard, Crabtree, GE, Standard, Indoasian, Control & Switchgear, Legrand, Hager, L&T, Eaton or equivalent makes conforming to BIS standards shall be accepted.
28	Fixing and connection of MCB DB supplied as above with supply of all material.	The MCB DB supplied (supplied against item no. 27 of Schedule-3A) shall be fixed at the location identified by site engineer by the use of 04 nos. bolts size 100mmx6mm supplied by the contractor. The connection & testing shall be done by contractor. All wires shall be connected with the use of copper lugs & clamping kits.
29	Concealed wiring for 20 Amps plug points with PVC pipe & PVC insulator copper conductor 4 sq mm size with supply of all material.	The concealed wiring for 20A plug points, shall be through PVC pipe of suitable size as required. PVC pipe shall be heavy type ISI marked. The wiring shall be with PVC insulated stranded individual copper conductor 4 sq. mm. The wires should be 650/1100 volt grade FRLS type of ISI marked, conforming to IS-694. A separate circuit should be drawn from the outgoing of a 20 Amps F.T. fuse provided on the main board for the plug point. An earth continuity conductor of 18 SWG PVC copper shall be run from the main board to the plug socket and connected to the earth terminal of the plug socket. Suitable Tees, bends, elbows, junction boxes as required shall be supplied and fixed by the contractor. Wherever required, wiring for light, fan & Plug points shall be done through common pipe. All materials shall be supplied by the contractor. In no case the PVC pipe shall be bend to change the direction of wiring. The work shall be done as per the directive of the authorized representative of Sr.DEE (RS&G)/BSP. Make for PVC pipe- Polycab/Anchor/Finolex/Bajaj/Precision/Richa or equivalent makes conforming to BIS standards shall be accepted Make for Switch/Socket - Havells brands/L&T/ Legrand/Anchor/ ROMA/HPL or equivalent makes conforming to BIS standards shall be accepted Make for copper wire: Polycab/Havells/KEI/Finolex/RR Kabel/Ultracab or equivalent makes conforming to BIS standards shall be accepted
30	Supply of ELECTRIC WATER HEATER-GEYSER - Tank Capacity 25 Liter, 5star	The cost covers supply of ELECTRIC WATER HEATER-GEYSER - Tank Capacity 25 Liter, 5star rated Material of

	rated Material of Inner Container: Stainless Steel, Material of Outer Container: ABS, warranty: 3year.	Inner Container: Stainless Steel, Material of Outer Container: ABS, warranty: 3year. It should have, thermostat, indicating lamp, thermal cut out, drain plug, provision for vent pipe/pressure relief valve, non return valve & other accessories. Make- Orient, kenstar, Bajaj, Usha, Havells or equivalent makes conforming to BIS standards shall be accepted
31	Fixing of storage type geyser 25litrs capacity.	Fixing, installation and connection of 25-litre storage type electric geyser (supplied against item no. 30 of Schedule-3A) including wall mounting with suitable brackets/anchor fasteners, making plumbing and electrical connections with approved materials, testing for proper operation and ensuring leak-free performance, complete in all respects.
32	Supply of Mirror/decorative/bracket light 20W	The cost covers Supply of 20W Mirror / Decorative Bracket type LED light fitting (as per requirement), Color Temperature 6500K (+/-500 K), System Efficacy ≥ 100 lm/W, Power Factor ≥ 0.95 , CRI ≥ 80 , THD $\leq 10\%$, Input Voltage 140V-270V AC, 50Hz, with inbuilt electronic driver, high-efficiency LED module, minimum IP20 protection, polycarbonate/metal body, warm white / cool white light as required, complete with all mounting accessories, conforming to relevant IS standards. Make - Philips, Osram, Havells, Wipro, Oreva, Polycab, Orient, Surya, Halonix, Syska or equivalent makes conforming to BIS standards shall be accepted

B: Other electrical requirements for settlement area of quarters

1	Supply of 7 mtrs height hot deep galvanized octagonal pole (single arm)	The rate includes supply of 7 mtr height hot dip galvanized octagonal pole with single arm bracket as per IS:2629/IS:2633/IS:4759 standards having sheet thickness of 3 MM of make- Vakrangee, Bajaj, Zenieth/TATA/Arya/Zenco Industrial Corpn/Shah Phylon/Philips or equivalent makes conforming to BIS standards shall be accepted. The single arm bracket of length 1500MM along with spigot shall be hot dip galvanized. The internal and external surface of the pole shall be galvanized with minimum coating thickness of 65 microns. The pole shall have camouflaged junction box having necessary terminal board with compression gland for termination of incoming & outgoing supply cable. The pole shall have approximately top and bottom dia of 70/130 MM respectively and shall also supplied with foundation bolts 04 nos 'J' type of size 20 MM (EN8 grade). Anchor plate shall be of 3MM thickness, base plate of size 220X220X12MM approximate
2	Excavation of earth, provision of Foundation and erection of hot deep galvanized octagonal poles with	The price shall cover the cost of transportation of 7 mtr height hot deep galvanized octagonal pole (supplied above) to the work site and casting of concrete foundation for

	aluminium & red oxide paint	erection of pole with aluminium & red oxide paint. The rate includes excavation of earth pit in any kind of soil and casting of PCC foundation (1000x1000x100 MM) ratio 1:4:8 at the bottom and over which RCC foundation (350x350x1200MM) ratio 1:2:4 shall be done. The top portion of the foundation shall be 300MM above the ground level. The J bolts shall be fixed in the RCC foundation as per the template size of the octagonal pole as per the direction of site in charge. The price shall also include back filling and dressing of earth and debris cleaning after completion of work in all respect.
3	Supply of junction box 300x350x125 mm size material thickness 1.5mm with 1 no. 6A HRC fuse with base and 1 no. TPN terminal block stud type suitable for 25 sqmm cable.	The street light junction box to be supplied shall be made out of 1.5 mm thick CRCA sheet steel powder coated exterior, with gasket, hinged door with IP-55 protection or better, mounting plate made of 2mm thick CRCA sheet steel, cable gland plate 2mm thick provided at bottom, with cam type locking arrangement & with brackets for pole mounting. The junction box should contain 1 no. 6A HRC fuse with base and 1 no. TPN terminal block stud type suitable for 25 sq mm cable. The dimension of the DB is 300 mm x 350 mm x 125 mm (WxHxD). The internal wiring shall be done by 2.5 sq-mm FRLS wire.
4	Fixing & connection of junction boxes	The street light junction box (supplied against item no. 3 of schedule-3 B) shall be fitted on the street light pole(s) at the place identified by the authorized representative of Sr. DEE(RS&G)/BSP. The work include connection of incoming & outgoing cables on the terminals of the DB. All materials & labour required for fixing shall be supplied by the contractor. Make for copper wire: Polycab/Havells/KEI/Finolex/RR Kabel/Ultrecab orequivalent makes conforming to BIS standards shall be accepted
5	Supply of LED street light Luminaries 45W complete with all accessories.	Supply of LED street light Luminaries 45W complete with all accessories. Detailed technical specification is enclosed as Annexure- II . Make -Philips, Osram, Havells, Wipro, Syska, Oreva, Polycab, Orient, Surya, Halonix, or equivalent makes conforming to BIS standards shall be accepted
6	Fixing & connection of street light luminaire supplied above.	The luminaries (supplied against item No: 5 of schedule-3B) shall be fixed on existing/newly erected Rail poles/SST poles/ wall of service buildings or at place as directed by authorized representative of Sr.DEE(RS&G)/BSP. Connection to the fittings shall be done through 2 core un-armoured 2.5 sq. mm. copper cable or 4 sq. mm aluminium cable drawn from junction boxes or from overhead line as per directives of site engineer. Any other minor items required for execution of above work shall be supplied by the contractor.
7	Supply of class A MS pipe/MS clamp for clamping the light fitting at suitable	The price shall cover supply of Class A MS pipe of suitable dia. For fixing in street light fittings & Supply of MS clamps size

	design and size.	25mm x 5mm. The quantity of MS pipe of suitable dia. & MS clamps shall be decided by the authorized representative of Sr.DEE (RS&G)/BSPs. The work also includes the fabrication works required for fixing the fittings into poles. After fabrication of pipe & clamps it shall be painted with red oxide primer & Aluminium paint.
8	Trimming of big branches above 15 cm.	Trimming of Big branches above 15 CM Diameter with contractor's labour & tools with sufficient protection not to damage any other railway material. The branches to be cut have to be decided by site engineer. The tree branches to be collected by the contractor & to be deposited at the place identified by the site engineer.
9	Trimming of small branches dia. Above 5 CM & less than 15 cm.	Trimming of small branches diameter Above 5 CM & less than 15 CM with contractor's labour & tools with sufficient protection not to damage any other railway material. The branches to be cut have to be decided by site engineer. The tree branches to be collected by the contractor & to be deposited at the place identified by the site engineer.
10	Disconnection of existing wiring.	The work consists of disconnection and removal of wiring/cable/box etc & handing over the materials to concerned authorized representative of Sr.DEE (RS&G)/BSP. Necessary care should be taken during Disconnection & dismantling work so that the cable may be obtained in its maximum length & in good condition. Boxes, DB shall be removed in such a manner that the usable component may not be damaged.
11	Construction of Cement Concrete foundation containing cement concrete on the proportion 1:3:6 of cement, sand & ballst size of 40mm.	The price shall cover excavation, supply & handling of all materials & accessories temporary arrangement for excavation in hard soil and concrete/masonry drains/walls requiring use of chisel & hammer, shoring where necessary casting concrete including frame work where necessary tamping of concrete, grouting of poles and finishing the top of concrete foundation. The price also includes the dismantling of all connected temporary arrangements, backfilling with earth & compacting the same to required height & width as per directive of authorized representative of SR.DEE (RS&G)/BSP. The authorized representative of SR.DEE (RS&G)/BSP shall certify the use of chisel & hammer if necessary. The price shall be paid on the basis of total volume of the concrete foundation. The depth of excavation shall be measured from the formation level to the maximum excavated point. Cement concrete on the proportion 1:3:6 of cement sand & ballast size of 40mm. The Cement concrete foundations may be for gate support pillars, fencing angle foundations, mulling & concreting of existing structures and foundation for SST pole etc. SST poles/Rail poles as per the directive of the authorized representative of SR.DEE (RS&G)/BSP. The proper curing work shall be done by the contractor. Preferably suitable

		scroll of PVC pipe or G.I. pipe to be used during foundation casting for pole erection after sufficient time for setting.
12	Supply of DB containing one TP MCCB 100 Amps as incoming & 2 nos 63 Amps TP MCBs as outgoing complete with neutral bar din rail etc enclosed in a powder painted metallic enclosure	Supply of DB with enclosure made out of CRCA steel sheet 1.2 mm thick mounting plate made using 2 mm thick CRCA sheet steel, cable gland plate 2 mm thick provided at the bottom, Cam locking arrangement, Single door, pole mounting bracket supplied separately, containing one 100 Amps TP MCCB breaking capacity 25 KA as incoming & 2 nos. TP MCB, 63 Amps breaking capacity 10 KA. The DB should have suitable dimension to carry above items. The DB shall contain cable entry holes for cables. The DB shall also contain the cable terminal links, neutral link & earth bar. Make for MCB/MCCB: Siemens, Schneider, Havells, GE, Standard, Indoasian, Control & Switchgear, Legrand, HPL, Hager, L&T or equivalent makes conforming to BIS standards shall be accepted
13	Fixing of above DB.	The DB (supplied under item no. 12 of Schedule-3B) shall be fixed as per directive of authorized representative of Sr.DEE/RS&G/BSP. The incoming cable & outgoing cables shall be connected to the terminals & from the terminals to the incoming of the MCCB/MCBs. The material & labour required for fixing all above items shall be supplied by the contractor. The method of fixing & cable termination shall be done as per the directive of the authorized representative of SR.DEE (RS&G)/BSP. Make for copper wire: Polycab/Havells/KEI/Finolex, RR Kabel/Ultracab or equivalent makes conforming to BIS standards shall be accepted

SCHEDULE-4

Electrical portion of works "Construction of 05 units Type-II and 04 units Type-III quarter, 02 units Type-IV quarters on replacement ground of old and dilapidated quarters under jurisdiction of ADEN/Settl-II/BSP"

A: Type-II quarters (per qrtr)		Detailed technical specification/ Scope of work of items appearing in schedule- 4
Item No.	Description of Items	
1	Supply of Crosslinked Polyethylene Insulated Armoured Cable 4x16sqmm with Aluminium conductor, suitable for rated voltage at 1100 volts grade, as per IS:7098 (Part 1): 1988 latest.	Supply of Crosslinked Polyethylene Insulated Armoured Cable 4x16sqmm with Aluminium conductor, suitable for rated voltage at 1100 volts grade, as per IS:7098 (Part 1): 1988 latest Make: Polycab, Havells, KEI, Finolex, RR Kabel, Ultracab, Vishal Cables, or equivalent makes conforming to BIS standards shall be accepted.
2	Laying of cable of lower size (upto 4x35 Sq. mm) in Polythene (HDPE) pipe without digging of earth dressing of land	The cable of lower size upto 4x35 sq.mm (supplied by Railway) shall be laid in cable trenches along the road/track/ yard without digging in all sorts of soil with/without HDPE Pipe including

[Handwritten signatures]