

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India
(MAINTENANCE & SERVICES DEPARTMENT)



NIT- 46627

CORRIGENDUM-1

The due date for the tender with reference to **NIT-46627** is extended upto **28/06/2019**.

The following text in Open Tender Document shall be read as follows:

1. Unit rate has been changed from page 5 to 19 (document attached for references)

SL NO	PAGE NO	EARLIER TEXT	MODIFIED TEXT
1	1	Ref: Enquiry No: 9451900033 Dated 30/05/2019; Due date: 21/06/2019 , 14.00 Hrs.	Ref: Enquiry No: 9451900033 Dated 30/05/2019; Due date: 28/06/2019 , 14.00 Hrs.
2	1	On or 21/06/2019 .	On or 28/06/2019 .
3	2	Last Date for Receipt of Tender: 14.00 Hrs. on 21/06/2019 .	Last Date for Receipt of Tender: 14.00 Hrs. on 28/06/2019
4	2	Date of Technical Bid Opening: 14.30 Hrs. on 21/06/2019	Date of Technical Bid Opening: 14.30 Hrs. on 28/06/2019
5	3	Ref: Enquiry No:9451900033 Dated 30/05/2019; Due date: 21/06/2019 , 14.00 Hrs.	Ref: Enquiry No:9451900033 Dated 30/05/2019; Due date: 28/06/2019 , 14.00 Hrs.
6	26	Ref: Enquiry No:9451900033 Dated 30/05/2019; Due date: 21/06/2019 , 14.00 Hrs.	Ref: Enquiry No:9451900033 Dated 30/05/2019; Due date: 28/06/2019 , 14.00 Hrs.

All other terms & conditions as published in **NIT-46627** remains unaltered.

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 2575010 / 2575123 / e-mail: umadsankar@bhel.in



ISO 9001

ENQ No: 9451900033

Dt. 30.05.2019

SCOPE OF WORK & BILL OF QUANTITIES:

ITEM NO.	SCOPE OF WORK	UOM	QTY	RATE	VALUE
10/10	Electrification of Newly extended Bay 5A as per the detailed specification given below:	AU	1	3556000	3556000
20/10	Electrification of bay 5A office wiring as per the detailed specification given below:	No.	1	1374000	1374000

Detailed Scope of Work

PART-B-Electrification of Newly Extended Bay 5A of Building 50 (ITEM10)

Sl. No.	PARTICULARS	SPECIFICATION DETAILS	QTY	RATE	VALUE	OFFER BY BIDDER
1.0.0	APPLICATION					
1.1.0	Purpose	Electrification of Newly extended Bay 5A of Building 50 located at Trichy, Tamil Nadu.				
2.0.0	Specification					
2.1.0	Supply and laying of 3 runs, 3.5 Core 185 Sqmm XLPE cable in trench	Supply and Laying of 3/2 runs of 3.5 core,185sqmm XLPE cables (1.1kv) in the already excavated/formed trench and closing the trench with the trench cover to make it good. Cable should be of RPG, Polycab, KEI, Paramount, Radiant, Delton, Gloster, Nicco, Universal, Mansfield, Suraj makes only.	Qty : 1000M	857.6	857600	
2.2.0	Supply and laying of Single run, 3.5 Core 95 Sqmm XLPE cable in trench	Supply and Laying of single run of 3.5 core,95sq.mm XLPE cables (1.1kv) in the already excavated/formed trench and closing the trench with the trench cover to make it good. Cable should be of RPG, Polycab, KEI, Paramount, Radiant, Delton, Gloster, Nicco, Universal, Mansfield, Suraj makes only.	Qty : 300 M	478.4	143520	
2.3.0	Supply and laying of Single run, 3.5 Core 50 Sqmm XLPE cable in trench	Supply and Laying of single run of 3.5 core,50sq.mm XLPE cables (1.1kv) in the already excavated/formed trench and closing the trench with the trench cover to make it good. Cable should be of RPG, Polycab, KEI, Paramount, Radiant, Delton, Gloster, Nicco, Universal, Mansfield, Suraj makes only.	Qty : 300 M	307.2	92160	
2.4.0	Supply and laying of Single run, 4 Core 10 Sqmm XLPE cable in trench	Supply and Laying of single run of 4 core,10sq.mm XLPE cables (1.1kv) in the already excavated/formed trench and closing the trench with the trench cover to make it good. Cable should be of RPG, Polycab, KEI, Paramount, Radiant, Delton, Gloster, Nicco, Universal, Mansfield, Suraj makes only.	Qty : 100 M	159.2	15920	
2.5.0	Supply and fixing of Isolator 200	Supply and fixing of sheet steel enclosed fully shrouded, 200A TPN Isolator with suitable adaptor box, and angle iron	2 sets	18400	36800	

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 2575010 / 2575123 / e-mail: umadsankar@bhel.in



ISO 9001

ENQ No: 9451900033

Dt. 30.05.2019

	Amps with adaptor box	frame work on the wall/column/trench. The Isolators should be properly connected to earthing strips. The adaptor box should be painted with one coat of Red oxide paint and two coats of grey colour paint (powder coated). Suitable hole for cable entry should be provided in the adaptor Box. Make of Isolator: GEM, Menco or HAVELLS ONLY SUITABLE. PLEASE QUOTE SPECIFIED MAKE ONLY.				
2.6.0	Supply and fixing of Isolator 100 Amps with adaptor box	Supply and fixing of sheet steel enclosed fully shrouded, 100A TPN Isolator with suitable adaptor box, and angle iron frame work on the wall/column/trench. The Isolators should be properly connected to earthing strips. The adaptor box should be painted with one coat of Red oxide paint and two coats of grey colour paint (powder coated). Suitable hole for cable entry should be provided in the adaptor Box. Make of Isolator: GEM, Menco or HAVELLS ONLY SUITABLE. PLEASE QUOTE SPECIFIED MAKE ONLY.	6 sets	12800	76800	
2.7.0	Supply and fixing of Isolator 400 Amps with adaptor box	Supply and fixing of sheet steel enclosed fully shrouded, 400A TPN Isolator with suitable adaptor box, and angle iron frame work on the wall/column/trench. The Isolators should be properly connected to earthing strips. The adaptor box should be painted with one coat of Red oxide paint and two coats of grey colour paint (powder coated). Suitable hole for cable entry should be provided in the adaptor Box. Make of Isolator: GEM, Menco or HAVELLS ONLY SUITABLE. PLEASE QUOTE SPECIFIED MAKE ONLY.	1 set	29600	29600	
2.8.0	Supply and fixing of Isolator 63 Amps with adaptor box	Supply and fixing of sheet steel enclosed fully shrouded, 63A TPN Isolator with suitable adaptor box, and angle iron frame work on the wall/column/trench. The Isolators should be properly connected to earthing strips. The adaptor box should be painted with one coat of Red oxide paint and two coats of grey colour paint (powder coated). Suitable hole for cable entry should be provided in the adaptor Box. Make of Isolator: GEM, Menco or HAVELLS ONLY SUITABLE. PLEASE QUOTE SPECIFIED MAKE ONLY.	5 Sets.	7280	36400	
2.9.0	Supply and fixing of Isolator 32 Amps with adaptor box	Supply and fixing of sheet steel enclosed fully shrouded, 32A TPN Isolator with suitable adaptor box, and angle iron frame work on the wall/column/trench. The Isolators should be properly connected to earthing strips. The adaptor box should be painted with one coat of Red oxide paint and two coats of grey colour paint (powder coated). Suitable hole for cable entry should be provided in the adaptor Box. Make of Isolator: GEM, Menco or HAVELLS ONLY SUITABLE. PLEASE QUOTE SPECIFIED MAKE ONLY.	5 Sets.	4000	20000	
2.10.0	Supply and fixing of 63A 8way DB	Supply and installation of 8 way 63 A, TPN FDB with 200A Isolator as incomer with suitable adapter box, and angle iron frame work on the wall/column/floor. The FDB should be made up of thick gauge CRCA sheet steel as per IS 2675 and porcelain base HBC type as per IS 2086 and with HBC fuse links, Bus bar suitable for the number of ways and amperage.	2 Sets.	53200	106400	

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 2575010 / 2575123 / e-mail: umadsankar@bhel.in



ISO 9001

ENQ No: 9451900033

Dt. 30.05.2019

		Neutral bus bar and earthing terminal to be provided. Board finished with two coat of Grey enamel paint. Suitable for 3 Phase 415V AC supply. MAKE of FDB and Isolator: GEM, Menco or HAVELLS only suitable.				
2.11.0	Supply and fixing of 32 A 8 way DB	Supply and installation of 8 way 32 A, TPN FDB with 200A Isolator as incomer with suitable adapter box, and angle iron frame work on the wall/column/floor. The FDB should be made up of thick gauge CRCA sheet steel as per IS 2675 and porcelain base HBC type as per IS 2086 and with HBC fuse links, Bus bar suitable for the number of ways and amperage. Neutral bus bar and earthing terminal to be provided. Board finished with two coat of Grey enamel paint. Suitable for 3 Phase 415V AC supply. MAKE of FDB and Isolator: GEM, Menco or HAVELLS only suitable.	1 Set.	29600	29600	
2.12.0	Supply and installation of Earth Pit	Excavation of earth, supply and installation of earth electrode generally conforming to IS: 3043-1987. The electrode should be of cast Iron, 3M long 100mm inner dia, 13mm thick with supply of 50 x 6 mm GI clamp (Hot dipped galvanised flat) with suitable fasteners, back filling of alternate layers of salt and charcoal around the electrode, Construction of masonry chamber (Size 600 x 600mm) and cover etc. Earth resistance value, earth electrode No. and date of inspection are to be painted inside the chamber wall and on the top of the cover. SPECIAL INSTRUCTIONS for making earth pits:- a) Before commencement of work, contractor should consult with Electrical in charge and finalise the location plan for the installation of earth pits. b) After excavation of earth & before closing the same it should be shown to Electrical in charge. c) Contractor should fill charcoal around electrode with presence of Electrical in charge. d) Unique earth pit number should be allotted for every earth pit and same is to be painted with black colour paint on the inside wall of masonry chamber and cover. e) After erection of earth pit, the ohmic value to be measured in the presence of Electrical in charge and final report to be submitted. The value of the earth pit should be less than 2 ohms.	5 Nos.	12000	60000	
3.0.0		DESCRIPTION OF MAIN PANEL BOARD:--				
3.1.0	Supply and installation of MP board	Supply, installation and commissioning of 800 AMP MAIN PANEL BOARD WITH 800 AMPS COPPER BUSBAR ALONG WITH - 800 AMPS INCOMER SS ENCLOSURE WITH FUSE - 1 No - 200 AMPS OUTGOING SS ENCLOSURE WITH FUSE – 2 Nos - 100 AMPS OUTGOING SS ENCLOSURE WITH FUSE -3 Nos - 400 AMPS OUTGOING SS ENCLOSURE WITH FUSE - 1 Nos SPECIFICATION FOR MAIN POWER BOARD: --	1 SET	388000	388000	

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 2575010 / 2575123 / e-mail: umadsankar@bhel.in



ISO 9001

ENQ No: 9451900033

Dt. 30.05.2019

Supply and installation of Medium Voltage Floor mounting free standing Industrial type panel board.

- The panel shall be fabricated from 50x50x6mm M.S Angle for vertical and 40x40x6mm for horizontal.
- The cable supports shall be fabricated from 50x6mm M.S Flat.
- The switches shall be mounted at a suitable operating height which should not exceed 2000mm from the floor.
- The bottom of the switch fuse unit should be atleast 600mm above the floor level and the panel overall height not exceed 2200mm.
- All the adopter boxes should have the cable entries from the bottom side of the box for cable termination/ complete inter connections. The space between switches shall not less than **150mm for easy and free operation of switch handles.**
All the switches shall be provided with 2Nos of 25x3mm copper earth bus. Fabrication of doors, bus bar chamber, and adopter boxes shall be used with 2mm thick CRCA sheet.
- After fabrication, the panel should be painted with one coat of red-oxide paint, 2 coats of grey enamel ACID PROOF paint. The panel should be provided with 440 volt danger boards. Out going, incoming and switch fuse unit rating should be encarving made of perfix sheet or equivalent material should be provided. All required materials confirming to IS 375/1963.

BUSBAR:--

The busbar should be extensible for future extension with proper coupling arrangement of buses of suitable additional length shall be provided. The bus bar chamber shall be provided with 2 or 3 section of door covers with neoprene gasket all around. 800 Amps, 3phase, 415volts and neutral Electrolytic copper bus of suitable size and fixed with insulating spacers and bus bar supports etc., with phase indication lamps red, yellow and blue of siemens/L&T make. volt meter 0-500 volts L&T/siemens make with selector switch kaycee/L&T 3nos, CT800/5amps, Ammeter selector switch, kilo watt hour meter digital type L&T/Energon/MECO or equivalent make acceptable to BHEL, 3phase 4wire system with control fuses. Heat shrinkable sleeves should be provided for bus bars.

INCOMER:--

One No. 630Amps GE/L&T make TPN fuse switch unit in sheet steel enclosure. 3Nos of cable cut out suitable for 185sqmm shall be provided with suitable adopter box.

OUTGOING:--

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 2575010 / 2575123 / e-mail: umadsankar@bhel.in



ISO 9001

ENQ No: 9451900033

Dt. 30.05.2019

		<p>1 Nos of 400 Amps , 2Nos of 200Amps & 3Nos of 100amps GE/L&T make combination fuse switch unit in Sheet Steel enclosure. 2Nos of cable cut out suitable for 185sqmm for each switches shall be provided with suitable adopter box.</p> <p>THE FOLLOWING SWITCHES TO BE MOUNTED ON THE ABOVE MP BOARD</p> <p>1.800AMS INCOMER WITH SUITABLE ADOPTER BOX</p> <p>2.200AMPS SWITCHES 2 NOS, IN THE BOTTOM ROW WITH ADOPTER BOX</p> <p>3.100AMPS SWITCHES 3 NOS ON THE TOP ROW WITH ADOPTER BOX</p> <p>4. 400AMPS SWITCHES 1 NOS ON THE Bottom ROW WITH ADOPTER BOX</p> <p>5.ALL SWITCHES TO BE PROVIDED WITH SUITABLE ADOPTER BOXES.</p> <p>Note:</p> <p>1. Inspection will be done by BHEL Engineers at site before dispatch.</p> <p>2. All the items are under supplier's scope.</p> <p>3. Drawing will be approved by BHEL Engineers before fabrication of MP Board.</p> <p>4. Installation of above mentioned MP boards inside the factory. All materials including frame work, adaptor box and fixing are under contractor scope.</p>				
3.1.1	Supply and installation of MP board	<p>Supply installation and commissioning of 800 Amps with 800 Amps copper busbar along with</p> <ul style="list-style-type: none"> - 650 AMPS INCOMER SS ENCLOSURE WITH FUSE - 1 No - 200 AMPS OUTGOING SS ENCLOSURE WITH FUSE – 2 Nos - 100 AMPS OUTGOING SS ENCLOSURE WITH FUSE -3 Nos - 350 AMPS OUTGOING SS ENCLOSURE WITH FUSE - 1 Nos <p>Specification for main power board:--</p> <p><u>Supply of Medium Voltage Floor mounting free standing Industrial type panel board.</u></p> <ul style="list-style-type: none"> • The panel shall be fabricated from 50x50x6mm M.S Angle for vertical and 40x40x6mm for horizontal. • The cable supports shall be fabricated from 50x6mm M.S Flat. • The switches shall be mounted at a suitable operating height which should not exceed 2000mm from the floor. • The bottom of the switch fuse unit should be atleast 600mm above the floor level and the panel overall height not exceed 2200mm. • All the adopter boxes should have the cable entries from the bottom side of the box for cable termination/ complete inter connections. The space between switches shall not less than 150mm for easy and free operation of switch handles. <p>All the switches shall be provided with 2Nos of</p>	1 SET	388000	388000	

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 2575010 / 2575123 / e-mail: umadsankar@bhel.in



ISO 9001

ENQ No: 9451900033

Dt. 30.05.2019

		<p>25x3mm copper earth bus. Fabrication of doors, bus bar chamber, and adopter boxes shall be used with 2mm thick CRCA sheet.</p> <ul style="list-style-type: none"> After fabrication, the panel should be painted with one coat of red-oxide paint, 2 coats of grey enamel ACID PROOF paint. The panel should be provided with 440 volt danger boards. Out going, incoming and switch fuse unit rating should be encarving made of perfix sheet or equivalent material should be provided. All required materials confirming to IS 375/1963. <p><u>BUSBAR:--</u> The busbar should be extensible for future extension with proper coupling arrangement of buses of suitable additional length shall be provided. The bus bar chamber shall be provided with 2 or 3 section of door covers with neoprene gasket all around. 800 Amps, 3phase, 415volts and neutral Electrolytic copper bus of suitable size and fixed with insulating spacers and bus bar supports etc., with phase indication lamps red, yellow and blue of siemens/L&T make. volt meter 0-500 volts L&T/siemens make with selector switch kaycee/L&T 3nos, CT800/5amps, Ammeter selector switch, kilo watt hour meter digital type L&T/Energon/MECO or equivalent make acceptable to BHEL, 3phase 4wire system with control fuses. Heat shrinkable sleeves should be provided for bus bars.</p> <p><u>INCOMER:--</u> One No. 630Amps GE/L&T make TPN fuse switch unit in sheet steel enclosure. 2Nos of cable cut out suitable for 300sqmm shall be provided with suitable adopter box.</p> <p><u>OUTGOING:--</u> 1 No of 350 Amps , 2Nos of 200Amps & 3Nos of 100amps GE/L&T make combination fuse switch unit in cast iron / Sheet Steel enclosure. 2Nos of cable cut out suitable for 185sqmm for each switches shall be provided with suitable adopter box.</p> <p>THE FOLLOWING SWITCHES TO BE MOUNTED ON THE ABOVE MP BOARD</p> <ol style="list-style-type: none"> 1. 650AMS INCOMER WITH SUITABLE ADOPTER BOX 2. 200AMPS SWITCHES 2 NOS, IN THE BOTTOM ROW WITH ADOPTER BOX 3. 100AMPS SWITCHES 3 NOS ON THE TOP ROW WITH ADOPTER BOX 4. 350AMPS SWITCHES 1 NOS ON THE Bottom ROW WITH ADOPTER BOX 5. ALL SWITCHES TO BE PROVIDED WITH SUITABLE ADOPTER BOXES. <p>Note: 1. Inspection will be done by BHEL Engineers at site before</p>				
--	--	--	--	--	--	--

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 2575010 / 2575123 / e-mail: umadsankar@bhel.in



ISO 9001

ENQ No: 9451900033

Dt. 30.05.2019

		dispatch. 2. All the items are under supplier's scope. 3. Drawing will be approved by BHEL Engineers before fabrication of MP Board. Installation of above mentioned MP boards inside the factory. All materials including frame work, adaptor box and fixing are under contractor scope.				
3.1.2	Supply and laying of GI flat (50mm x 6 mm)	Supply and laying of 50 mm x 6 mm GI Earth flat on the floor/formed trench/ excavated trench/wall by fixing/ welding and to be connected the both ends to Main existing earth connection/Earth pit/Electrical Equipments / MP(or) ML boards and other accessories. All items like screws and clamps etc., should be supplied by the contractor. Clamp should be painted with one coat of red oxide paint.	80 Metre	360	28800	
3.1.3	End Termination of 185 Sq. MM	Making end termination of the following 3.5 core, XLPE, Armoured, medium voltage cables with supply of suitable copper lugs, glands and earthing clamp. Size: 185 sq.mm. Note: All materials including glands, lugs, earthing clamps etc., are under the scope of the contractor.	12 Nos.	1600	19200	
3.1.4	End Termination of 95 Sq. MM	Making end termination of the following 3.5 core, XLPE, Armoured, medium voltage cables with supply of suitable copper lugs, glands and earthing clamp. Size: 95 sq.mm. Note: All materials including glands, lugs, earthing clamps etc., are under the scope of the contractor.	18 Nos.	1440	25920	
3.1.5	End Termination of 50 Sq. MM	Making end termination of the following 3.5 core, XLPE, Armoured, medium voltage cables with supply of suitable copper lugs, glands and earthing clamp. Size: 50 sq.mm. Note: All materials including glands, lugs, earthing clamps etc., are under the scope of the contractor.	10 Nos.	960	9600	
3.1.6	Supply and laying of 14 SWG	Supply and laying of 14 SWG copper wire in various equipment for earthing purpose as required.	200 Meters	24	4800	
3.1.7	Supply and laying of 8 SWG	Supply and installation of 8 SWG copper wire in various equipment for earthing purpose as required.	100 Meters	80	8000	
3.1.8	Supply and Installation of Earth Cable 16 SWG	Supply and Installation of No. 16 SWG copper wire in the trench/wall/ column/truss and connect the both ends with earth points/body of the Electrical equipments /Accessories.	200 meters	24	4800	
3.1.9	End Termination of 10 Sq. MM	Making end termination of the following 3.5 core, XLPE, Armoured, medium voltage cables with supply of suitable copper lugs, glands and earthing clamp. Size: 10 sq.mm. Note: All materials including glands, lugs, earthing clamps etc., are under the scope of the contractor.	10 Nos.	400	4000	
3.1.10	Painting and Marking	Neat Painting and marking of MP board incoming and outgoing, isolators, DPs. For easy identification of cable routing. All painting materials are contractor scope.	1 Set	32000	32000	
3.1.11	Supply and Fixing of Lightning Arrester	Supply and Fixing of new 5 spikes copper lightning conductor with complete set of 4 feet copper tube, one number bowl, one number copper base plate on the top of the factory building to a height of 15 M to 33 M.	1 Nos	16000	16000	

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 2575010 / 2575123 /e-mail: umadsankar@bhel.in



ISO 9001

ENQ No: 9451900033

Dt. 30.05.2019

		Note: All items are to be supplied by the contractor. Before fixing the Lightning arresters tighten the all accessories of the same.				
3.1.12	Supply and fixing 16 A MCB	Supply and Fixing of Single pole 16 amps MCB's in the Sheet metal box on the wall/column with supply of 20 x 3 mm MS flat.	20 Nos	960	19200	
3.1.13	Supply and fixing 32 A MCB	Supply and Fixing of Four pole 32 amps MCB's in the Sheet metal box on the wall/column/ with supply of 20 x 3 mm MS flat.	4 Nos	3600	14400	
3.1.14	Supply and fixing of MCB 63Amps 4-pole	Supply and Fixing of four pole 63 amps MCB's in the Sheet metal box on the wall/column with supply of 20 x 3 mm MS flat. All other materials are to be supplied by the contractor.	3 Nos	960	2880	
3.1.15	Supply and Installation of 8way 16Amps 4-pole DL	Assembly, fixing and testing of 8 ways 16 A MCB Lighting distribution Boards with 100A, 4 pole MCB as incomer. Each phase to be controlled with 100 A DP ELCB .The MCB DB (DL) should be provided with necessary angle iron frame work on the wall / column. Necessary cable adopter boxes for both incoming & outgoing, support channels with required fasteners are to be supplied by the contractor. Note:- All the other materials required including 8 ways 16 A TPN MCB Lighting distribution Boards(DL), adopter boxes, support channels fasteners multi strand copper cable etc. for carrying out the work will be in the scope of the contractor.	2 Nos.	8000	16000	
3.1.16	Supply and Installation of 100Amps 4-pole DL Timer boxes	Fixing of roof light timer boxes on column near by the MCB DL boards in the shop floors. The timer boxes should be fixed on the 25 mm x 6 mm MS flat with suitable bolts and nuts. Note:- All other materials including the DL timer boxes, welding machines, 25 mm x 6 mm MS flat and fasteners are under contactor's scope.	2 Nos	16000	32000	
3.1.17	Supply and installation of Roof lights 200W	Supply and installation of 200W Induction Luminaire: 1. Integral housing. 2. Suitable for Medium bay and it should be designed to counter heavy vibration and continuous burning hrs which is more than 12 hrs per day. 3. Reflector made of anodised aluminium. 4. Electronic control gear with THD of less than 10% 5. Accessories mounted on a serviceable gear tray 6. Provision of safety chain from luminary to the roof hook. 7. Heavy duty Eyebolt with anti-vibration rubber bushing provided on housing for suspension 8. The luminaire should perform in the input voltage range of 180-250 V. 9. 200W induction lamp suitable for the luminaire. General Note: 01).EOT crane will be provided/spared free of cost for roof light installation where ever available. The contractor has to	30 Nos	32000	960000	

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 2575010 / 2575123 / e-mail: umadsankar@bhel.in



ISO 9001

ENQ No: 9451900033

Dt. 30.05.2019

		<p>arrange their own facility (Ladder, welding machine etc.) for gaining access to the fittings in the annex bldgs./high bays/low bays. Contractor has to arrange for personal protective equipment like safety belt, helmet, safety shoes etc. Necessary welding of hooks for mounting the Induction luminaire is contractor scope. All materials are contractor scope.</p> <p>02). Contractors are requested to strictly comply the work permit system while doing the works at height. The safe work permit has to be obtained as directed by the Electrical Engineer in-charge.</p> <p>03). Prior permission should be obtained from M&S, Production and Safety Dept. Necessary safety precautions should be adhered strictly.</p> <p>04) The contractor shall ensure removal of all accessories such as ladders, safety belts, tools, nuts, bolts etc from the top of the EOT crane after completion of each cycle of work.</p>				
3.1.18	Supply and installation of Roof lights of 8 runs 2.5sqmm cable	<p>Supply and wiring with 8 runs of 2.5sqmm stranded copper conductor unsheathed cable in the medium quality, 1.5mm thick, 25/32mm dia, pvc conduit pipe with continuous running of 8 SWG copper wire as earthing on the steel structural members of the roof with suitable clamping (8x100 = 800 Meter cable). One running meter of wiring consist of 1m PVC conduit, 1m earth wire and 8 runs of 1m copper wire with suitable clamps.</p> <p>NOTE:</p> <p>1. The contractor should produce the samples of PVC conduit and PVC insulated copper conductor (unsheathed) cables and get the approval from the Electrical Incharge. The makes FINOLUX/HAVELLS/RPG /DELTON only acceptable.</p> <p>2) All the PVC conduit pipe should be of AVONPLAST/FINOLUX make only acceptable.</p> <p>3) Necessary materials like Tees, L bends, Clamps, PVC flexible conduits required for the wiring are under contractor's scope.</p> <p>4) EOT crane will be provided/spared free of cost for roof light installation where ever available. The contractor has to arrange their own facility (Ladder etc.) for gaining access to the fittings in the annex blgs/high bays/low bays. Contractor has to arrange for personal protective equipments like safety belt, helmet, safety shoes etc.</p> <p>5) Wiring should be done from the nearest Lighting MCB DB.</p>	100 meter (8x100M = 800 Meter cable)	440	44000	
3.1.19	Supply and installation of Roof lights of 6 runs 2.5sqmm cable	<p>Supply and wiring with 6 runs of 2.5sqmm stranded copper conductor unsheathed cable in the medium quality, 1.5mm thick, 25mm dia, pvc conduit pipe with continuous running of 8 SWG copper as earthing on the steel structural members of the roof with suitable clamping . (6x100 = 600 M cable)</p> <p>One running meter of wiring consist of 1m PVC conduit, 1m earth wire and 6 runs of 1m copper wire with suitable</p>	100 meters (6x100 = 600 M cable)	336	33600	

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 2575010 / 2575123 / e-mail: umadsankar@bhel.in



ISO 9001

ENQ No: 9451900033

Dt. 30.05.2019

		<p>clamps.</p> <p>NOTE:</p> <p>1.The contractor should produce the samples of PVC conduit and PVC insulated copper conductor (unsheated) cables and get the approval from the Electrical Incharge. The makes FINOLUX/HAVELLS/RPG /DELTON only acceptable.</p> <p>2) All the PVC conduit pipe should be of AVONPLAST/FINOLUX make only acceptable.</p> <p>3) Necessary materials like Tees,L bends, Clamps,PVC flexible conduits required for the wiring are under contractor's scope.</p> <p>4) EOT crane will be provided/spared free of cost for roof light installation where ever available. The contractor has to arrange their own facility(Ladder etc.) for gaining access to the fittings in the annex blgs/high bays/low bays. Contractor has to arrange for personal protective equipments like safety belt, helmet, safety shoes etc.</p> <p>5)Wiring should be done from the nearest Lighting MCB DB.</p>				
		PART-C -OFFICE ANNEXE BUILDING ELECTRICAL WIRING (ITEM-20)				
3.2.1	Supply and Fixing of 32Amps /12way MCB DB	Supply and installation of Double door with IP42 protection, 415 V,12 way, 32 amps TPN MCB DB with 100AMPS Phase control DP RCCB (7 segment DB) with 100 amps input 4 pole RCCB / RCBO as incomer ELCB (300mA) DB ,all MCBs are LEXIC D curve -10KA ,MS adaptor box(14SWG sheet steel) for incoming ,outgoing supply cables and suitable fabricated wall mounted iron frame made with 35mmx35x3mm size L angle and connect incoming and outgoing supply cables with proper clamping, cable glands and earthing etc. surface mounting type TPN Seven Segment Distribution Board along with supply of required MCCB and ELM & MCBs, double doored with IP42 protection metal door and 12 Way (on each phase). Outgoing: 32A SP MCBs (36 Modules; 12 for each phase) Sub incomer: Each phase controlled by 63 Amps (10ka Icu-D Curve) double pole MCB. Incomer: one number of 100Amps, 4pole, 16ka Icu MCCB with 300mA ELM attached unit duly wired with insulated copper conductors/busbars and terminal ends are terminated with suitable current rating copper lugs, two neutral and earth bars with top and bottom cable end boxes. Preferable makes:- Siemens/ L&T (HAGER)/ ABB/ LEGRAND only.	1 Nos	40800	40800	
3.2.2	Supply and Fixing of 16 Amps /8 way MCB DB	Supply, assembly, fixing and testing of surface mounting 7 segment 8 Way, 16 A MCB DB (IP 42 protection type), duly wired with copper conductors/ busbars, supply and fixing of adaptor boxes at top & bottom of DB and fixing on the wall/ column with supply of suitable MS angle iron frame work and commissioning the DB including earthing. 63 amps input 4 pole RCCB / RCBO as incomer ELCB (300mA) DB ,all MCBs are 10KA ,MS adoptor box(14SWG sheet steel) for incoming	72 Nos	17600	35200	

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 2575010 / 2575123 / e-mail: umadsankar@bhel.in



ISO 9001

ENQ No: 9451900033

Dt. 30.05.2019

		,outgoing supply cables and suitable fabricated wall mounted iron frame made with suitable 3mm thick size L angle and connect incoming and outgoing supply cables with proper clamping, cable glands and earthing etc . surface mounting type TPN Seven Segment Distribution Board along with supply of required RCBO & MCBs, double doored with IP42 protection metal door and 8Way (on each phase). Outgoing: 16A SP MCBs (24 Modules; 8 for each phase) Sub incomer: Each phase controlled by 40 Amps (10ka Icu-C Curve)double pole MCB. Incomer: one number of 63 Amps, 4 pole TPN 10ka Icu-C CURVE RCBO(300mA).Provided with 100A copper busbar for each phase, neutral busbar & earth busbar, duly wired with stranded copper conductor cables and terminal ends are terminated with suitable current rating copper lugs along with supply and providing of cable end boxes at the incoming and out going side of the DB.				
3.2.3	Supply and installation of 12Way 16A SPN MCB	Supply and fixing of 12 Way Single row, Flush mounting type MCB DB with Double Door concealed on the wall. Incomer: 32A, DP MCB, 10KA - 1 no Outgoing: 16A, SP MCB - 10kA - 10 nos. Installation: 1)Supply of top & bottom cable adaptor box,suitable MS angle iron frame work (35x35x3 mm), earthing etc. and necessary fasteners are under contractor scope 2) 12 Way SPN MCB Double Door DB, with metal double door are contractor scope	10 Nos	5760	57600	
3.2.4	Supply and Fixing of AC Points 20Amps	Supply and Fixing of 20Amps Sockets with plug controlled by suitable rated SP MCB in the flush mounting box metal plate top of sheet metal box with necessary interconnections and including earth connection. All materials are under contractor's scope. Preferable makes:- Siemens/ L&T (HAGER)/ ABB/ LEGRAND only.	8 Nos	1920	15360	
3.2.5	Supply and laying of 4 Sqmm copper cable.	Supply and laying of 2 run of 4 sq.mm FRLS, single core, stranded copper conductor unsheathed cable in the medium quality,1.5mm thick,20mm dia,pvc conduit pipe with continuous running of 12 SWG copper as earthing on 1.5mm thick,20mm dia, pvc conduit pipe with continuous running of 12 SWG copper wire in concealed wall. All masonry work are contractor's scope. (2Rx125M=250M) Make: Delton, Finolex, BCH, L&T, RRRkabel, Havells, Siechem. These makes are only suitable. NOTE: 1.The contractor should produce the samples of PVC conduit and PVC insulated copper conductor (unsheathed) cables and get the approval from the Electrical In-charge. Grade: 650/1100 Volts grade. 2)All the PVC conduit pipe should be of AVONPLAST/FINOLUX make only acceptable. 3)Necessary materials like Tees, L bends, Clamps, PVC	250 M	130	32500	

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 2575010 / 2575123 / e-mail: umadsankar@bhel.in



ISO 9001

ENQ No: 9451900033

Dt. 30.05.2019

		flexible conduits, copper wire required for the wiring are under contractor's scope.				
3.2.6	Supply and fixing of 35W BLDC Ceiling fans	Supply, Assembling, fixing and commissioning of 1200 sweep less than 35W BLDC ceiling fan with standard MS down rod/0.5 M long on the existing hook on the ceiling. All other materials are under contractor's scope. Remotes has to be handed over to supervisor incharge. BLDC Fan make – Super fan / Orient electric / Atomberg	35 Nos	4400	154000	
3.2.7	Supply and fixing of heavy duty 'U' type clamp	Supply and fixing of heavy duty 'U' type clamp with two fastener bolts on the roof for ceiling fans with proper fixing arrangements. Note: - All required materials are under contractor's scope.	35 Nos	160	5600	
3.2.8	Supply and wiring of 6 Sq. Mm copper cable	Supply and laying of Single core, unsheathed, FRLS annealed bare high conductivity, flexible stranded copper conductor, Wiring (concealed on the wall) with 2runs of 6.0sq.mm pvc insulated unsheathed stranded copper wire in 20 mm dia pvc gray colour high quality rigid, 2.2mm wall thick conduit pipe along with continuous running of single run of 14 SWG bare copper wire for earthing, on the wall/column/ceiling and connecting to the wiring points.(2x50M=100M). Make: Delton, Finolex, BCH, L&T, RRkabel, Havells, Siechem. These makes are only suitable. NOTE: 1.The contractor should produce the samples of PVC conduit and PVC insulated copper conductor (unsheathed) cables and get the approval from the Electrical In-charge. Grade: 650/1100 Volts grade. 2) All the PVC conduit pipe should be of AVONPLAST/FINOLUX make only acceptable. 3) Necessary materials like Tees, L bends, Clamps, PVC flexible conduits, copper wire, masonry work required for the wiring are under contractor's scope.	100 M	150	15000	
3.2.9	Supply and wiring of 10 Sq. Mm copper cable	Supply and wiring (concealed on the wall) with 2runs of 10.0sq.mm Single core, pvc insulated (FRLS) unsheathed stranded copper wire in 20 mm dia pvc gray colour high quality rigid, 2.2mm wall thick conduit pipe along with contineous running of single run of 16 SWG bare copper wire for earthing, on the wall/column/ceiling and connecting to the wiring points. (2 x 100M = 200 M). Make: Delton, Finolex, BCH, L&T, RRkabel, Havells, Siechem. These makes are only suitable. (200 M) NOTE: 1.The contractor should produce the samples of PVC conduit and PVC insulated copper conductor (unsheathed) cables and get the approval from the Electrical In-charge. Grade: 650/1100 Volts grade. 2)All the PVC conduit pipe should be of AVONPLAST/FINOLUX make only acceptable. 3)Necessary materials like Tees, L bends, Clamps, PVC	200 M	190	38000	

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 2575010 / 2575123 / e-mail: umadsankar@bhel.in



ISO 9001

ENQ No: 9451900033

Dt. 30.05.2019

		flexible conduits, copper wire, masonry work required for the wiring are under contractor's scope.				
3.2.10	Supply and wiring of 2.5 Sqmm cable	Supply and Wiring (concealed on the wall) with 2 runs of 2.5sq.mm FRLS, pvc insulated unsheathed stranded copper wire in 20 mm dia pvc gray colour high quality rigid ,2.2mm wall thick conduit pipe along with continuous running of single run of 8 SWG bare copper wire for earthing, on the wall/column/ceiling and connecting to the wiring points. (1000Mx2R = 2000M) Make: Delton, Finolex, BCH, L&T, RRkabel, Havells, Siechem. These makes are only suitable. NOTE: 1.The contractor should produce the samples of PVC conduit and PVC insulated copper conductor (unsheathed) cables and get the approval from the Electrical In-charge. Grade: 650/1100 Volts grade. 2) All the PVC conduit pipe should be of AVONPLAST/FINOLUX make only acceptable. 3) Necessary materials like Tees, L bends, Clamps, PVC flexible conduits, copper wire, masonry work required for the wiring are under contractor's scope..	2000 M	122	244000	
3.2.11	Supply and wiring of 1.5 Sqmm cable	Supply and wiring of 2 run of 1.5 sq.mm Single core FRLS, stranded copper conductor unsheathed cable in the medium quality, 1.5mm thick,20mm dia, PVC conduit pipe with continuous running of 8 SWG copper as earthing on 1.5mm thick,20mm dia,pvc conduit pipe with continuous running of 8 SWG copper wire in concealed wall. All masonry work are contractor's scope. (1750 Mx2 runs=3500M). Cable make: Delton, Finolex, BCH, L&T, RR kabel, Havells, Siechem. These makes are only suitable. NOTE: 1.The contractor should produce the samples of PVC conduit and PVC insulated copper conductor (unsheathed) cables and get the approval from the Electrical Incharge. Grade: 650/1100 Volts grade. 2) All the PVC conduit pipe should be of AVONPLAST/FINOLUX make only acceptable. 3)Necessary materials like Tees,L bends, Clamps,PVC flexible conduits, copper wire required for the wiring are under contractor's scope.	3500 M	114	399000	
3.2.12	Supply and Fixing of LED Tube Lights 18 Watts	Supply and Fixing of 18 Watts LED Tube Lights fitting on the wall / ceiling T.W round blocks, All materials including tubelight fitting, tube light, nuts, screws etc.,) are under contractor's scope. Make of tube lights: - Philips, Crompton, Syska, havells.	60 Nos	960	57600	
3.2.13	Supply and installation of Exhaust Fan 380mm 1 ph	HEAVY DUTY EXHAUST FAN. With 1 Ph Assembly and fixing of 380mm sweep Heavy-duty exhaust fan with suitable fixing clamp on the wall of the toilet. SWEEP SIZE: 380 MM,	2 Nos.	6000	12000	

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt.of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 2575010 / 2575123 /e-mail: umadsankar@bhel.in



ISO 9001

ENQ No: 9451900033

Dt. 30.05.2019

		RPM : 1400, VOLT : 230v- 1Ph, 50Hz. Make:-ORIENT, CROMPTON-GREEVES, KHAITAN & ALMONARD MAKES ONLY SUITABLE. The vendor has to assemble and test the exhaust fans at BHEL, Trichy after supply. All materials including masonry work, bolts and nuts, fixing clamp etc. for carrying out the work will be in the scope of the contractor. required for installation contractor scope.				
3.2.14	Supply and Fixing of Junction Box 5/15A Amps	RAW POWER CIRCUIT MAINS: Supply, wiring, testing & commissioning to the 5/15A Plug Points with switches using 2R 2.5 sq.mm for phase in R Y B colours and neutral in black colour and 1R2.5 sq.mm for earth in Green colour PVC unsheathed, PVC insulated multi-strand flexible copper wire (FRLS) drawn in a suitable ISI make PVC conduit with all necessary laid in partition / wall / ceiling in a concealed system. Supply of 3 pin, 5 A/ 15 A modular type socket, controlled by 15 A modular type SPT switch housed in suitable size modular flush mounted metal box with cover plate, duly wired, assembling, inter connecting and concealing on the wall and connecting to the general power supply. Note: 1) All materials are under contractor's scope. 2)The 3 pin, 5 A/ 15 A modular type sockets to be fixed in various ancillary & annex buildings Acceptable Makes: - Legrand/Siemens/ RR Connect/Goldmedal.	30 Nos	3600	108000	
		UPS CIRCUIT MAINS: Supply, wiring , testing & commissioning to the 5/15A Plug Points with switches using 2R2.5sq.mm for phase in R Y B colours and neutral in black colour and 1R2.5sq.mm for earth in Green colour PVC unsheathed ,PVC insulated multi-strand flexible copper wire (FRLS) drawn in a suitable ISI make PVC conduit with all necessary laid in partition / wall / ceiling in a concealed system. 2/3 pin combined, 5 A modular type socket, controlled by 5 A modular type SPT switch housed in suitable size modular flush mounted metal box with cover plate, duly wired, assembling, inter connecting and concealing on the wall and connecting to the general power supply.Note: 1) All materials are under contractor's scope. Acceptable Makes: -Legrand/Siemens/Anchor				
3.2.15	Supply and installation of LT 4 Core 50 Sqmm cable	Supply and Laying of 4 core XLPE/armoured cables in the already excavated trench / Wall of building. Size: 50 sq.mm. Note: Cables laying inside the factory. Opening the trench cover at required interval, laying /removing of 4 core XLPE armoured cables in the trench and closing the trench cover to make good / with clamps Confirming to IS 7098/Part-1/1988. (Size:4core - 50sq.mm.) Make of the cable: RPG, Polycab, KEI, Paramount, Radiant,	Qty : 150 M	338	50700	

BHARAT HEAVY ELECTRICALS LIMITED

(A Govt. of India Undertaking)

High Pressure Boiler Plant, Tiruchirappalli 620 014, India

MAINTENANCE & SERVICES

☎: (0431) 2575010 / 2575123 / e-mail: umadsankar@bhel.in



ISO 9001

ENQ No: 9451900033

Dt. 30.05.2019

		Delton, Gloster, Nicco, Universal, Mansfield, Suraj only. Qty : 150 M				
3.2.16	End Termination of 50 Sq. MM (main)	Making end termination of the following 3.5 core, XLPE, Armoured, medium voltage cables with supply of suitable copper lugs, glands and earthing clamp. Size: 50 sq.mm. Note: All materials including glands, lugs, earthing clamps etc., are under the scope of the contractor.	8 Nos.	965	7720	
3.2.17	Supply and Fixing of 32 Amps 2-Pole MCB + ELCB	Supply and Fixing of two pole 32 amps MCB's + ELCB's in the Sheet metal box on the wall/column with supply of 20 x 3 mm MS flat. All other materials are to be supplied by the contractor.	5 Nos	1600	8000	
3.2.18	Supply and installation of 12 Modular switches.	Supply, assembling and fixing of Modular mechanism 12 module on the flush type metal box, grouting on the wall after making necessary pockets on the wall, fixing module frame cover with required 6 Amps switches 12 nos., making necessary inter connections and connecting to the wiring points including earthing. (For fans and lights) Note: 1. Metal box, switches & plates are contractor scope. Anchor/Havells/ Siemens/ L&T (HAGER)/ ABB/ LEGRAND only. 2. Masonary work and all other wiring materials are under contractor's scope.	10 Nos	2400	24000	
3.2.19	Supply and installation of 4 Modular switches.	Supply, assembling and fixing of Modular mechanism 4 module on the flush type metal box, grouting on the wall after making necessary pockets on the wall, fixing module frame cover with required 6 Amps switches 4 nos., making necessary inter connections and connecting to the wiring points including earthing. (For fans and lights) Note: 1. Metal box, switches & plates are contractor scope. Anchor/Havells/ Siemens/ L&T (HAGER)/ ABB/ LEGRAND only. 2. Masonary work and all other wiring materials are under contractor's scope.	20 Nos	1800	36000	
3.2.20	Supply and installation of 2 Modular switches.	Supply, assembling and fixing of Modular mechanism 2 module on the flush type metal box, grouting on the wall after making necessary pockets on the wall, fixing module frame cover with required 6 Amps switches 2 nos., making necessary inter connections and connecting to the wiring points including earthing. (For fans and lights) Note: 1. Metal box, switches & plates are contractor scope. Anchor/Havells/ Siemens/ L&T (HAGER)/ ABB/ LEGRAND only. 2. Masonary work and all other wiring materials are under contractor's scope.	20 Nos	646	12920	
3.2.21	Supply and installation of 8 Modular switches.	Supply, assembling, fixing and commissioning Modular mechanism 8 module flush type metal box flush with the wall (after making necessary pockets on the wall and fixing module frame Consists of three nos of 6 amps shuttered type sockets with One no. of 20Amps Double pole switch to	10Nos	2000	20000	