

Date: 09-02- 2024

Dear Sir / Madam,

Centre for Environment Education (CEE) is inviting quotation for the Civil Work at **“Material Recovery Facility, Koil Konda x road, Ward no 34, Mahabubnagar resource park, Telangana, 509001”**. Please find all the details attached as **Annexure 1**. Detailed drawings for the work are attached as **Annexure 2**.

The Request for Quotation process shall be as follows:

The interested bidders may proceed to request for the RFQ document by sending an Email to purchase@ceeindia.org.

The email must contain the following:

- The bid should be given on the Company letterhead.
- The Company GST number is to be mentioned.
- The bid should be signed and duly stamped.
- All the applicable taxes should be mentioned in the bid.

You are requested to submit your bid with all necessary documents by 20-02-2024.

For any query please contact Mr. Aashish Kothawade at 7678068415

Thanks & Regards,

Snehal Bhatt

Purchase officer

Annexure 1

Introduction:

At MRFs, the dry waste will be collected by ULB vehicles, local aggregators, and local waste pickers, weighed with help of weighing scales and Movable Weigh Bridge, sorted with help of conveyor belt, Dust removal from the dry waste with help of dust air blower machine and shredding of different fractions of plastics from 2 – 10 mm flakes with help of plastic shredding machine by Safai Mitras.

A. Scope of work:

Centre for Environment Education (CEE) in partnership with Mahbubnagar Municipality and HDFC Bank have established a Material Recovery facility at the “**Material Recovery Facility, Koil Konda x road, Ward no 34, Mahabubnagar resource park, Telangana, 509001**” and Installing machines to promote recycling of plastic waste.

There is a requirement for the construction of an Office and restroom and Chajja work on the Material Recovery Facility constructed by Mahbubnagar Municipality. Since the Electrical work done by Mahbubnagar Municipality is not complete, there is a requirement for rewiring of internal Electrical works. The details of civil and electrical work are attached here in **Annexure 2**.

A. Bidder's Qualification:

- The bidder should have at least 5 years' experience in similar works.
- Bidder should have done a minimum of Rs. 50 Lac works in last 2 financial years.
- Bidder should submit related works completion certificates from a minimum of 3 parties in the last financial year.

B. Duration: The duration of said work in Annexure 1 shall be within a maximum period of 45 days from the date of receipt of the Work Order.

C. Payment Terms & Conditions: The payment schedule is as follows:

- a) CEE shall, upon a written request by the Vendor, allow a maximum of 30 % of the total Contract amount, after the start of work, submission of work plan & material arrival & verified by CEE consultant/ official (*architect/engineer*).
- b) The vendor may submit a request for payment to be paid by the Centre on completion of the chajja work and the start of partition work for the Office and restroom, and we may allow 30% of the total Contract amount and certification of work done by Centre's consultant/ official (*architect/engineer*).
- c) The vendor may submit a request for payment to be paid by the Centre on completion of partition work for the Office and the starting of the Internal Electrical Works, we may allow 30% of the total Contract amount and certification of work done by Centre's consultant/official (*architect/engineer*).

- d) Progress payment (remaining 10%) shall be adjusted by deducting the amount in the Final Bill payment.

D. Liquidated Damages:

Failure to comply with the Terms & Conditions of the contract will result in the payment of corresponding penalties /liquidate damages in the amount equal to 100 % of the cost of the unperformed portion for every day of delay.

SUMMARY		
Sr. No.	Particulars	Amount
1	Shed Work	
2	Electrical Work	
	Sub Total	
	GST @ 18%	
	TOTAL AMOUNT	

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	Door	9.2	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) decorative type, core of block board construction with frame of 1st class hard wood and well matched teak 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters								
		9.20.1	35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws								
			D1	2	1.00		2.1	4.2	sqm		
		9.21	Providing and fixing ISI marked flush door shutters conforming to IS : 2202 (Part I) non-decorative type, core of block board construction with frame of 1st class hard wood and well matched commercial 3 ply veneering with vertical grains or cross bands and face veneers on both faces of shutters:								
		9.21.1	35 mm thick including ISI marked Stainless Steel butt hinges with necessary screws	2	1.00		2.1	4.2	sqm		
			D1								
	Window s	21.3	Providing and fixing glazing in aluminium doors, windows, ventilator shutters and partitions etc. with EPDM rubber/neoprene gasket etc. complete as per the architectural drawings and the directions of engineer-in-charge. (Cost of aluminium snap beading shall be paid in basic items):								
		21.3.3	With float glass panes of 8 mm thickness (weight not less than 20 kg/sqm)								
			W1	2	1.60	1.06		3.4	Sqm		

SINGLE PARTITION WORK

		9.105	Providing and fixing partition upto ceiling height consisting of G.I. frame and required board, including providing and fixing of frame work made of special section power pressed/ roll form G.I. sheet with zinc coating of 120 gms/sqm(both side inclusive), consisting of floor and ceiling channel 50mm wide having equal flanges of 32 mm and 0.50 mm thick, fixed to the floor and ceiling at the spacing of 610 mm centre to centre with dash fastener of 12.5 mm dia meter 50 mm length or suitable anchor fastener or metal screws with nylon plugs and the studs 48 mm wide having one flange of 34 mm and other flange 36 mm and 0.50 mm thick fixed vertically within flanges of floor and ceiling channel and placed at a spacing of 610 mm centre to centre by 6 mm dia bolts and nuts, including fixing of studs along both ends of partition fixed flush to wall with suitable anchor fastener or metal screws with nylon plugs at spacing of 450								
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PROJECT:- PROPOSED MATERIAL RECOVERY FACILITY (MRF) AT MEHBOOBNAGAR						
BILL OF QUANTITIES FOR INTERNAL ELECTRICAL WORKS						
S.No.	ITEM DESCRIPTION	Unit	Qty	Rate	Amount	
A)	POINT WIRING: -					
1	Supplying all materials, storing, handling, fixing, laying, wiring and testing for the following Light Point with 2 x 1.5 + 1 x 1.5 sq.mm FR insulated multistranded copper conductor 1100 volts grade stranded flexible wires in concealed/surface mounted PVC Conduit including cost of cutting & filling chases/ saddle, clamps, inspection/solid bends, sockets etc. and providing and fixing of 6 amps single pole modular flush mounted switch & switch plate in 1.2mm thick & 65mm deep GI box. The cost of circuit wiring with 2 x 2.5 + 1 x 1.5 Sqmm FR insulated multistranded copper conductor 1100 Volts grade wires shall be included in the cost of point wiring. (Cost of fish wire also to be included in the item)					
1.1	Controlled by one 16A Modular Switch:					
a)	First Point	Nos.	1			
b)	Loop Point	Nos.	1			
			2			
1.2	Same as above item no. 1.1 but controlled by two (2) Nos. two way switch.					
a)	First Point	Nos.	1			
b)	Loop Point	Nos.	1			
			2			
1.3	Same as above item no. 1.1 but directly controlled from MCB in DB (Cost of MCB not be included.)					
a)	First Point	Nos.	10			
b)	Loop Point	Nos.	22			
			35			
2	Supplying all materials, storing, handling, fixing, laying, wiring and testing for 6A, 5-pin light plug with FR insulated multistranded copper conductor wire in concealed/surface mounted PVC Conduit including cost of cutting and filling chases as required with fixing of plate, modular type switch socket (6A) and earthing complete with all accessories as required. The first point wiring shall be done with 2 x 2.5 + 1 x 1.5 Sqmm wires and looping shall be done with 2 x 1.5 + 1 x 1.5 Sqmm wires. Only one point to be looped (light plug). (Cost of fish wire also to be included in the item)					
a)	First point	Nos.	2			
b)	loop point	Nos.	2			
			4			
4	Supplying all materials, storing, handling, fixing, laying, wiring and testing for 2 x 6A, 5-pin light plug with FR insulated multistranded copper conductor wire in concealed/surface mounted PVC Conduit including cost of cutting and filling chases as required with fixing of plate, set of 2 Nos. modular type socket (6A) controlled by 1 No. 6A switch and earthing complete with all accessories as required. The first point wiring shall be done with 2 x 2.5 + 1 x 1.5 Sqmm wires and looping shall be done with 2 x 1.5 + 1 x 1.5 Sqmm wires. Only one point and to be looped (UPS Fed). (Cost of fish wire also to be included in the item).					
a)	first point	Nos.	1			
b)	loop point	Nos.	1			
			2			
5	Supplying all materials, storing, handling, fixing laying, wiring and testing for exhaust fan point wiring with 2 x 1.5 + 1 x 1.5 sq.mm FR insulated copper conductor wire in concealed/surface mounted PVC Conduit including cost of cutting and filling chases as required with fixing of 6 amp modular switch and suitable plate on the existing switchboard near door and 6A, 3 pin plug to be provided near exhaust fan (cost of fish wire to be included in the item).	Nos.				
6	Supplying all materials, storing, handling, fixing laying, wiring and testing for ceiling fan point wiring with 2 x 1.5 + 1 x 1.5 sq.mm FR insulated copper conductor wire in concealed/surface mounted PVC Conduit including cost of cutting fixing of 6 amp single pole modular flush mounted switch & switch plate.(cost of fire wire wire to be included in the item).	Nos.	9			

	7	Providing and fixing circular/ Hexagonal MS box for ceiling fan clamp, of internal dia 140 mm, 73 mm height, top lid of 1.5 mm thick MS sheet with its top surface hacked for proper bonding, top lid shall be screwed into the GI box by means of 3.3 mm dia round headed screws, one lock at the corners, clamp shall be made of 12 mm dia M.S. bar bent to shape as per standard drawing.	Nos.			
	8	Supplying and fixing stepped type electronic fan regulator on the existing modular plate switch box including connections but excluding modular plate etc. as required.	Nos.			
	9	Supplying all materials, storing, handling, fixing, laying, wiring and testing for 16 Amp power outlet with FR insulated copper conductor wires in concealed/surface mounted PVC Conduit including cost of cutting and filling chases as required with fixing of 6 pin 16 Amps shuttered modular switch socket, switch plate with internal wiring, earthing of 3rd pin. The wiring shall be done with 2 x 4.0 + 1 x 2.5 Sqmm copper wire and looping shall be done with 2 x 2.5 + 1 x 1.5 Sqmm. (Power Socket). (cost of fire wire wire to be included in the item).				
	a)	First Point	Nos.	6		
	b)	Loop Point	Nos.	6		
				12		
	10	Supplying all materials, storing, handling, fixing, laying, wiring and testing for 20 Amp power outlet for AC with FR insulated copper conductor wires in concealed/surface mounted MS Conduit including cost of cutting and filling chases as required with fixing of 6 pin 16 Amps shuttered modular switch socket, switch plate with internal wiring, earthing of 3rd pin. The wiring shall be done with 2 x 4.0 + 1 x 2.5 Sqmm copper wire and looping shall be done with 2 x 2.5 + 1 x 1.5 Sqmm. (AC Socket). (cost of fire wire wire to be included in the item).	Nos.	0		
	11	Supplying, installation, testing, commissioning of 20 amps, 240 volts, SPN metal clad socket with 2 pole and earth, metal enclosed plug top along with 20 amps "C" curve, SP, MCB in sheet steel enclosure with chained metal cover for the socket out let and complete with connections, testing and commissioning etc. as required (2 x 4.0 + 1 x 2.5 sq.mm wiring have been taken separately). (In Electrical Room, Basement, Stilt and Terrace.)	Nos.	0		
	12	Supplying and fixing following modular switch/ socket on the existing modular plate & switch box including connections but excluding modular plate etc. as required.				
		Bell push	Nos.			
	13	Supplying and fixing modular blanking plate on the existing modular plate & switch box excluding modular plate as required.	Nos.	6		
	14	Supplying and fixing 3 pin, 5 amp ceiling rose on the existing junction box/ wooden block including connection etc as required.	Nos.	0		
	15	Supplying and fixing call bell/ buzzer suitable for single phase, 230 volts, complete as required.	Nos.			
	16	Supply, Installation, testing and commissioning of Multisensor suitable for single phase, 230 volts, complete as required.	Nos.			
	17	Supply, Installation, testing and commissioning of USB Charging socket for single phase, 230 volts, complete as required.	Nos.			
1.21	18	Providing and fixing of following sizes of PVC conduit on surface/recessed including cost of cutting and filling chases as required along with all accessories etc. complete as required (cost of fish wire to be included in the item).				
1.21.2	b)	32mm dia conduit	RM	25		
1.21.3	c)	25mm dia conduit	RM	25		
		TOTAL CARRIED OVER TO SUMMARY				
	Notes	1. All copper wires shall be of FR insulated.				
	-	2. Sizes of conduit/conduit accessories will be as per the maximum nos. of wires to be drawn in the conduit as given in the technical specification/Relevant standard.				

	B)	SUB-MAINS CABLE FOR DBs:-				
		Supplying, installation, testing, Termination and commissioning of XLPE armoured Aluminum cable for submain of DBs suitable size 1100 volts grade as per technical specifications and drawings enclosed with this document				
	a)	2 X 4 sq. mm + 1 X 2.5 sq. mm earth wire	RM			
	b)	2 X 6 sq. mm + 1 X 4 sq. mm earth wire	RM			
	c)	4 X 10 sq. mm + 2 X 6 sq. mm earth wire	RM	15		
		TOTAL CARRIED OVER TO SUMMARY		35		
	C)	LIGHT FIXTURES AND FANS (INSTALATION ONLY):-				
		Installation, testing, commissioning, receiving the lighting fixture and fan including assembling etc. of the following lighting fixtures and Fans including fixing arrangement and with all accessories as required with necessary GI pipe/steel pipe etc. as required for hanging of lighting fixtures and Fan.				
	a)	18W wall mounted LED Batten light. (Make Philips, Model no. :-MASS LED TUBE 1200MM 18W 865 T8) or Equivalent to Wipro & Bajaj.	Nos.	12		
	b)	12W surface mounted circular LED light. (Make Wipro, Model no. :- D641265) or Equivalent to Philips, Bajaj.	Nos.			
	c)	8-10 W LED Mirror Light.	Nos.			
	d)	Supply of 7W LED Wall Bracket Light. Make- Philips, Model- (E27 6500K A60 ND) or Equivalent to Trilux, GE	Nos.			
	e)	Bulk head light. (Make Philips, Model no. :-WT202W LED6S NW PSU S2 PC) or Equivalent to Trilux, GE.	Nos.			
	f)	60 Degree 80W Wipro Alpha Floodlight, IP Rating: IP66, Model Name/Number: LF19-931-060-57-XX	Nos.	35		
	g)	Exit sign Light	Nos.	4		
	h)	Ceiling Fan of 1200mm sweep complete erected in position with all accessories.(Make- Havels) or Equivalent to Orient, Cropton Greave.	Nos.	8		
	i)	Exhaust Fan Heavy duty 230V A.C 50 cycles 375 mm 1400 RPM complete erected in position with all accessories.(Make- Havels)	Nos.			
	Notes					
	1)	The type of fittings/make will be decided after interior designer selects the fittings. However, erection rate quoted shall hold good for a similar type of fittings and no extra charge will be paid on this account.				
	2)	Above item are based on General requirement on the preliminary drawings. Quantity are approximate & may change based on revised layout.				
		TOTAL CARRIED OVER TO SUMMARY				
	D)	LIGHT FIXTURES AND FANS (SUPPLY ONLY):-				
		Supply the lighting fixture and fan including assembling etc. of the following lighting fixtures and Fans including fixing arrangement and with all accessories as required with necessary GI pipe/steel pipe etc. as required for hanging of lighting fixtures and Fan.				
	a)	18W wall mounted LED Batten light. (Make Philips, Model no. :-MASS LED TUBE 1200MM 18W 865 T8) or Equivalent to Wipro & Bajaj.	Nos.	0		

b)	12W surface mounted circular LED light. (Make Wipro, Model no. :- D641265) or Equivalent to Philips, Bajaj.	Nos.			
c)	8-10 W LED Mirror Light.	Nos.			
d)	Supply of 7W LED Wall Bracket Light. Make- Philips, Model- (E27 6500K A60 ND) or Equivalent to Trilux, GE	Nos.			
e)	Bulk head light. (Make Philips, Model no. :-WT202W LED6S NW PSU S2 PC) or Equivalent to Trilux, GE.	Nos.			
f)	60 Degree 80W Wipro Alpha Floodlight, IP Rating: IP66, Model Name/Number: LF19-931-060-57-XX	Nos.	32		
g)	Exit sign Light	Nos.	4		
h)	Ceiling Fan of 1200mm sweep complete erected in position with all accessories.(Make- Havels) or Equivalent to Orient, Cropton Greave.	Nos.	10		
i)	Exhaust Fan Heavy duty 230V A.C 50 cycles 375 mm 1400 RPM complete erected in position with all accessories.(Make- Havels)	Nos.			
	Notes :				
1)	The type of fittings/make will be decided after interior designer selects the fittings. However, erection rate quoted shall hold good for a similar type of fittings and no extra charge will be paid on this account.				
2)	Above item are based on General requirement on the preliminary drawings. Quantity are approximate & may change based on revised layout.				
	TOTAL CARRIED OVER TO SUMMARY				
E)	DISTRIBUTION BOARDS:-				
1	Supply, installation, testing & commissioning of following MCB double door type prewired Distribution boards as per drawing & specification fabricated out of 16 SWG CRCA sheet steel in compartmentalized design as per specification and drawings these distribution boards shall be surface/ recessed in walls. The rate includes the painting, numbering earthing etc. as required. DB shall be suitable for incoming aluminum armoured cable.				
1	8 Way TPN DB (MACHINES AREA)				
	Comprising of following:				
	Incoming:				
	One (1) No. 63A FP MCB (10kA)				
	Three (3) Nos. 40A DP RCBO (100mA)				
	Outgoing:				
	Eighteen (18) Nos. 6-20A SP MCB (10kA)				
	Neutral link:				
	Separate for each outgoing				
	Earthing Terminals:				
	Earthing terminals suitable for outgoing as above.	No.	1		
2	6 Way SPN DB				
	Comprising of following:				
	Incoming:				
	25A DP RCBO (100mA)				
	Outgoing:				
	Four (4) Nos. 6A-25A SP MCB (10kA)				
	Neutral link:				
	Separate for each outgoing				
	Earthing Terminals:				

		Earthing terminals suitable for outgoing as above.	Nos.	0		
		TOTAL CARRIED OVER TO SUMMARY		1		
	F)	SAFETY EQUIPMENTS :				
	1.0	Providing and fixing NO SMOKING & DANGER ZONE signboards.	Nos	3		
	2.0	Supply and fixing of approved shock treatment chart in position & written in English and Hindi. The chart shall be framed using wooden frame and glass.	Nos	4		
	3.0	Insulating Mats				
	3.1	Supply, installation, testing commissioning of Insulating Mats of size 1m x 2m x 2mm for AC rms voltage grade up to 1.1 kV with dielectric strength of C Class, fire retarded complete in all respect.	Nos	3		
		TOTAL CARRIED OVER TO SUMMARY				
	G)	CABLE TRAYS & RACEWAYS:-				
	1	Cable tray				
		Providing and fixing of the following Hot dip Galvanised cable tray alongwith necessary coupler plates, nuts, bolts and washer with the following specifications, including cost of providing and fixing supporting steel structure hanging arrangement as mentioned below along with dash fastners, nuts, bolts and washers etc. for suspending cable trays. (All accessories like tees, bends vertical / horizontal shall be factory fabricated and cost of these to be included in the rate. Site fabricated accessories are not acceptable).				
	1.1	Perforated Type				
	a)	300mm(W) x 40 mm (D)	RM	10		
	b)	200mm(W) x 40 mm (D)	RM	50		
		TOTAL CARRIED OVER TO SUMMARY				
	H)	EARTHING SYSTEM				
	1	EARTHING STATION				
		Body earthing for Bailer Machine, Extruder Machine, Agglome ration Machine, Shredder Machine, Fatka Machine, Segregation Belt Machine.				

1.1	Supply, installation, testing and commissioning of UL listed CPRI Tested maintenance free copper coated earth rod of 3 metre having diameter of 17.2mm with 250 micron copper coating with clamp made of stainless steel or gun metal for terminating cable / flat conductor. Earth enhancing mineral (PROCEM) compound 25 kg tested for Leaching & TCLP with NABL accredited lab. The systems is conforming to IS 3043, IS / IEC 62305, IEC 61643-5-54, UL 467, the rod has to be tested to for dimention, marking, tensile strength, salt mist, coating thickness, electrical resistivity test before and after corresion test etc as per IEC 62561-2.	Set	15		
1.2	Supply, installation, testing and commissioning of Heavy Duty chamber with cover made on polypropylene material with tested to carry 5000 Kg with pulling hook size approx 300x300 mm	Set	0		
2	EARTHING STRIP/WIRES:				
	Supply & laying of hot dipped GI/pure copper earthing strip to connect to the DBS, Poles and equipment's in outdoor yard and also in indoor portion of substation.				
i	25 x 5 mm GI strip	RM	250		
ii	32 x 6 mm GI strip	RM	80		
vi	8 SWG GI wire	RM	50		
	TOTAL CARRIED OVER TO SUMMARY				
I)	LT PANELS & DISTRIBUTION BOARDS				
	FRONT OPERATED PANEL				
	NOTE: ALL ACBs ARE REQUIRED WITH SAFETY SHUTTER, UNDER VOLTAGE RELEASE / SHUNT TRIP				
	General Note for all Panels				
Note 1	The Panels/ Switch-boards shall be fabricated out of (load bearing member of 2mm and non load bearing member 1.6 mm thick) CRCA sheet steel, Compartmentised design, modular construction with Form 4b separation for Main Panels & 3b for remaining, Mounting Plates and Internal Partition shall be made of 1.6/2.0mm Aluzinc sheet for better heat dessipation clear space of 300mm or as approved shall be left at the bottom.The operating handle of the topmost switch shall not be higher than 1800mm from the finished floor and maximum height of panels shall not more than 2400mm.The Panel shall be Powder coated to paint of desired shadend in an approved manner.				
Note 2	Undervoltage Relay (27)				
Note 3	Reverse power RELAY (32)				
Note 4	Inverse Definite minimum time overcurrent earth fault relay				
Note 5	Overvoltage Relay (59)				
Note 6	Bucholz protection (only transformer switch) (63)				
Note 7	Emergency stop on Main panel				
Note 8	All incomers and Bus coupler panel door should be different colour coded for identification and mimic diagram in front of panel should be marks by reflector paints				
Note 9	All ACB terminals shall have vertical-vertical configuration for termination of incoming & outgoing bus links. All MCCB's up to 630A shall be provided with rear stud type terminations.				

	Note 10	Space heater, Thermostat, On/Off switch, LED Lamp , Door operated switch.				
	Note 11	UL Listed Linear pneumatic heat Detection Tube with all necessary fittings & supports.Master Control Unit for controlling each system, complete with pressure switches, buzzers and electronic hooters, including all necessary accessories + electrical Receiving ,fixing and drawing wiring to make each entire system functional including Suitable Cylindar				
	Note 12	All ACBs shall have protection Releases with LSIG.				
	Note 13	All Multifunction meters shall communication on ethernet through ethernet ports and shall have % THD and individual harmonics till 15 order				
	Note 14	ON Indication Light for all Outgoings. with backup MCB (refer SLD)				
	Note 15	All MCCB should be having Thermal Magnetic based Release UP TO 250 Amp and above 250 amp With Microprocessor Release,Ics=100%Icu with Rotary Handle. Fault Level minimum 25KA				
	1.0	MRF PANEL				
	1.01	Fabrication, Supply, Erection, Testing and commissioning of outdoor type cubicle pattern LT Switch-Board with a rupturing capacity of 50 KA at 415 V or as called for in individual items, openable in front and back suitable for 3 phase, 4 wire, 50Hz AC supply at an ambient temperature of 45 C. The cubicle should be outdoor type, dust proof, vermin proof, well ventilated and enclosure protection shall be IP-55 as per IS 2147-1962.or as per CPWD specifications, (Part IV - Sub-station) and IS: 8623 The cubicle should be front operated, floor mounted, free standing with compartments in tier formation, extensible on both sides. The panel to be provided with PVC Sleeved TPN Electrolytic Al. Bus Bar and PVC insulated solid interconnections and also provided with 50x6mm. horizontal tinned copper Earth Bus Bars in each section.				
	A	Main Incomer				
		1 Nos 160A FP MCCB 25kA With Microprocessor Based Release (O/C,S/C,E/F) Protection & all Accessories in each :				
		1 No Under Voltage Relay (27)				
		1 No Over Voltage Relay (59)				
		1 No. Breaker Control Switch				
		1 Nos Multifinction Meter Without RS-485 port				
		1 set C.T's 160/5Amp , CL 1.0, 15VA for meter				
		1 set C.T's 160/5Amp , CL 1.0, 15VA for APFCR				
		1 set Phase Indicating LED Lamps with backup MCB				
		1 ses ON,OFF,TRIP indicating LED Lamps with backup MCB.				
		Control SP MCB				
		1 no emergency stop push button switch (to control whole panel)				
	B	BUSBAR :-				
		FP aluminium bus bars of minimum 200 Amp with heat shrinkable coloured sleeves , Shrouds at Joints and including DMC/SMC bus bars supports at required interval complete for cross section, side supports and their spacing				
	C	OUTGOING				
		Note:				
		All MCCB should be having Thermal Magnetic based Release ,Ics=100%Icu with Rotary Handle. Fault Level minimum 25KA				
		ON,OFF,TRIP Indication Light for all Outgoings. with backup MCB				
		7 Nos. 63Amps TP+N ,MCCB with Thermal Magnetic Release adjustable with rotary handle. One spare				
		Miscellaneous items				
		2 nos door switch				
		2 nos illumination lights with 6 A,10kA MCB				
		ILLUMINATION LED WITH HOLDER & DOOR SWITCH				
		2 nos 6" dia exhaust fan with thermostate & suitable canopy				
		Internal illumination in Cable alleys with Door operated switch.				
		MRF PANEL as described above	set	1		
	3.00	ISOLATOR BOX				

		5 Nos. 63Amps TP+N ,MCCB with Thermal Magnetic Release adjustable with rotary handle. With wheatherproof cubical box	set	6		
		TOTAL CARRIED OVER TO SUMMARY				
	J)	LT CABLES & TERMINATION :				
	1.1	L.T CABLES				
		Supply, laying, testing and commissioning of 1100 Volt grade XLPE insulated extruded PVC inner and outer sheathed armoured cables conforming to IS 7098 amended upto date including the cost of providing required gap between adjacent cables (minimum one cable dia.) and including the cost of providing identification tags etc. complete as per specification, as required.				
	a)	3.5C x 300 sq mm Aluminium	RM			
	b)	3.5C x 240 sq mm Aluminium	RM			
	c)	3.5C x 185 sq mm Aluminium	RM			
	d)	3.5C x 150 sq mm Aluminium	RM			
	e)	3.5C x 50 sq mm Aluminium	RM	50		
	f)	3.5C x 25 sq mm Aluminium	RM			
	g)	4C x 25 sq mm Aluminium	RM			
	h)	4C x 16 sq mm Aluminium	RM	200		
	i)	4C x 10 sq mm Aluminium	RM			
	j)	3C x 10 sq mm Aluminium	RM			
	k)	2C x 6 sq mm Aluminium	RM			
	1.2	Cable termination :				
	1.2.1	Supplying, installation of all materials for terminations of 1.1 KV grade copper/aluminium multicore cables. The work includes cable glanding using brass plated , sizing the core leads, removing insulation, fixing suitable crimping type copper lugs/thimbles by using hydraulic crimping tools with correct size of the dies, shaping the leads and neatly connecting the same to the equipment terminals.				
	a)	3.5C x 300 sq mm Aluminium double compression gland	Set			
	b)	3.5C x 240 sq mm Aluminium double compression gland	Set			
	c)	3.5C x 185 sq mm Aluminium double compression gland	Set			
	d)	3.5C x 150 sq mm Aluminium double compression gland	Set			
	e)	3C x 50 sq mm Aluminium single compression gland	Set	2		
	f)	3.5C x 25 sq mm Aluminium single compression gland	Set			
	g)	4C x 25 sq mm Aluminium single compression gland	Set			
	h)	4C x 16 sq mm Aluminium single compression gland	Set	10		
	i)	4C x 10 sq mm Aluminium single compression gland	Set			
	j)	3C x 10 sq mm Cu single compression gland	Set			
	k)	2C x 6 sq mm Cu single compression gland	Set			
	1.3	HUME PIPE AND CHAMBER:-				
		Providing and laying RCC pipe with collars jointed with stiff mixture of cement mortar in the proportion of 1:2 (1 Cement : 2 Find Sand) including testing of joints etc. complete.				

	a)	300 mm dia	RM	100		
	c)	Masonry chamber 1000 x 1000 x 1000 mm with 2nd class brick work in cement mortar 1 : 5 (1 cement : 5 fine sand) for cable laying with RCC top cover 1 : 2 : 4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) necessary excavation, foundation concrete (1 : 5 : 10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1 : 3 (1 cement : 3 coarse sand) 12 mm thick finished with a coat of neat cement complete with RCC cover. (750 x 750 x 50 mm). (for HT/LT).	Nos			
	d)	Masonry chamber 450 x 450 x 750 mm with 2nd class brick work in cement mortar 1 : 5 (1 cement : 5 fine sand) for cable laying with RCC top cover 1 : 2 : 4 mix (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) necessary excavation, foundation concrete (1 : 5 : 10 (1 cement : 5 fine sand : 10 graded stone aggregate 40 mm nominal size) and inside plastering with cement mortar 1 : 3 (1 cement : 3 coarse sand) 12 mm thick finished with a coat of neat cement complete with RCC cover. (300 x 300 x 50 mm). (for LV).	Nos	1		
		TOTAL CARRIED OVER TO SUMMARY				

