



रजिस्टर्ड ए.डी. द्वारा/By Regd. A.D.

सं.सं. भाविप्रा/भोपाल/उप.म.प्र.(अभि.-वि.)/का.आ.-08/2022-23
Ref. No: AAI/BPL/DGM(E-E)/WO-08/2022-23

दिनांक: 06.07.2022

Date: 06.07.2022

सेवा में,

मेसर्स रास कांटेक्टर एंड और इंजीनियर्स,
302, तीसरी मंजिल, ए-14,
देविका चेंबर आरडीसी,
राज नगर, गाजियाबाद - 201001
ई-मेल: rass.engineer@gmail.com

M/s RASS CONTRACTOR AND ENGINEERS,
302, 3rd Floor, A-14,
Devika Chamber RDC,
Raj Nagar, Ghaziabad - 201001
E-mail: rass.engineer@gmail.com

विषय : "राजा भोज हवाई अड्डा, भोपाल में एटीसी टावर सह तकनीकी ब्लॉक का निर्माण।
उपशीर्ष: सबस्टेशन एवं अलाइड वर्क्स।"

Subject: "Construction of ATC Tower cum Technical Block at Raja Bhoj Airport, Bhopal.
SH: Substation & Allied works."

संदर्भ : 1) आपकी निविदा दिनांक 30.06.2022 और रिवर्स ऑक्शन दिनांक 01.07.2022 को खोली गई।

Ref.: 1) Your tender opened on dt: 30.06.2022 and Reversed Auction dt: 01.07.2022.

महोदय/Dear Sir,

- 1- उल्लेखित कार्य हेतु आपकी ई-निविदा आपके द्वारा उद्धृत कुल **रु. 3,34,48,400/-** (रु. तीन करोड़ चौतीस लाख अड़तालीस हजार चार सौ मात्र) की नियत मद दर पर अध्यक्ष, भारतीय विमानपत्तन प्राधिकरण की ओर से एतद् द्वारा स्वीकृत की जाती है, जो कि ई-निविदा की अनुमानित लागत **रु. 3,59,91,880/-** (रु. तीन करोड़ उनसठ लाख इक्यानबे हजार आठ सौ अस्सी मात्र) से **7.07 % कम** है।

Your E-Tender for the work mentioned above is hereby accepted on behalf of the Chairman, Airports Authority of India at the item rates quoted by you totaling to **Rs. 3,34,48,400.00 (Rupees Three Crore Thirty Four Lakh Forty Eight Thousand Four Hundred only)** which is **7.07% below** the estimated cost put to E-Tender of **Rs. 3,59,91,880.00 (Rupees Three Crore Fifty Nine Lakh Ninety One Thousand Eight Hundred Eighty Only)**.

- 2- उप. महाप्रबंधक (अभि.-विद्युत), भारतीय विमानपत्तन प्राधिकरण, राजा भोज विमानतल, भोपाल इस कार्य के इंजीनियरिंग प्रभारी होंगे। आपसे निवेदन है कि आप संविदा करार पर हस्ताक्षर करने एवं उसे पूरा करने हेतु **01.08.2022** तक उप. महाप्रबंधक (अभि.-विद्युत), भारतीय विमानपत्तन प्राधिकरण, भोपाल विमानपत्तन के कार्यालय में उपस्थित हो। संविदा करार **रु. 500/-** (पाँच सौ रुपये) के न्यायिकेतर (नॉन - ज्युडिशियल) स्टॉप पेपर पर बनाया जायगा तथा स्टॉप पेपर की लागत आपके द्वारा वहन की जाएगी।

Dy. Gen. Manager (Engg.-Elect.), Airports Authority of India, Raja Bhoj Airport, Bhopal shall be the Engineer-In-Charge of the work. You are requested to attend the office of the Dy. Gen. Manager (Engg.-Elect.), Airports Authority of India, Raja Bhoj Airport, Bhopal by **01.08.2022** to sign and complete the contract agreement. The contract agreement shall be executed on a non-judicial stamp paper of value **Rs. 500/- (Rupees Five Hundred only)** and the cost of the stamp paper shall be borne by you.

Contd...2

- 3- कृपया इस पत्र के जारी होने के 10 दिनों के अंदर प्रतिभूति जमा के रूप में रु. 33,44,840/- (रु. तैंतीस लाख चौवालीस हजार आठ सौ चालीस मात्र) की राशि इस कार्यालय में जमा करा दें अन्यथा करारनामों की संविदा की सामान्य शर्त के पृष्ठ संख्या - 15 पर दी गई शर्त 1ए के अनुसार उक्त राशि आपके बिल से काट ली जाएगी ।

Please deposit **Rs. 33,44,840/- (Rupees Thirty Three Lakh Forty Four Thousand Eight Hundred Forty Only)** towards Security Deposit within 10 days from the date of issue of this letter, failing which, the same will be deducted as per condition of Clause 1A on page 15 of the contract document.

- 4- आपसे अनुरोध है कि आप ठेका श्रमिक (विनियम एवं उन्मूलन) अधिनियम 1970 के उपबंधों का अनुपालन करें । साथ ही ठेका श्रमिक (विनियम एवं उन्मूलन) केन्द्रीय नियमावली 1971 एवं केन्द्रीय एवं राज्य सरकारों के न्यूनतम वेतन तथा उससे संबंधित अन्य नियमों का पालन करें ।

You are requested to comply with the provisions of contract Labour (Regulation and Abolition) Act 1970 and Contract Labour (Regulation and Abolition) Central rules 1971 and minimum wages Act and rules thereof Central and State Governments.

- 5- आपको सहायक महाप्रबंधक (अभि.-वि.), भारतीय विमानपत्तन प्राधिकरण, राजा भोज विमानतल, भोपाल से तत्काल संपर्क करने का भी निर्देश दिया जाता है । आपको कार्यस्थल (साइट) सौंपने का कार्य उनके द्वारा किया जाएगा ।

You are also directed to contact Asstt. Gen. Manager (Engg.-Elect.), AAI, Bhopal Airport immediately who will arrange to hand over the site to you.

- 6- कृपया नोट करे की कार्य पूरा करने के लिए आपको **06 (छह) माह** का समय प्रदान किया जाता है । यह समय इस पत्र के जारी करने की तिथि के 10वे दिन से माना जाएगा ।

Please note that the time allowed for carrying out the work shall be **06 (Six) Months**. The same shall be reckoned from 10th day from date of issue of this letter.

- 7- इस ठेके से संबंधित किसी भी प्रकार के पत्र व्यवहार के लिए उप महाप्रबंधक (अभि.-विद्युत), भा.वि.प्रा., राजा भोज विमानतल भोपाल - 462036 को संबोधित करें ।

Any further correspondence in connection with the contract should normally be addressed to the Dy. Gen. Manager (Engg.-Elect.), Airports Authority of India, R. B. Airport, Bhopal - 462036.

- 8- कृपया इस पत्र की प्राप्ति की सूचना दें तथा इसके साथ अनुलग्न अनुप्रति पर हस्ताक्षर करके टोकन के प्रतिग्रहण के रूप में अधोहस्ताक्षरी को वापस भेज दें ।

Please acknowledge the receipt and return the duplicate copy of this letter enclosed herewith after signing it to the undersigned as a token of acceptance.

- 9- यदि कोई विसंगति पाई जाती है तो अंग्रेजी भाषा ही मान्य होगी ।

In case any discrepancy is found, then English version will be taken as correct.

भवदीय / Yours Faithfully



(रामजी अवस्थी / Ramjee Awasthi)

उप महाप्रबंधक (अभि.-विद्युत)

Dy. Gen. Manager (Engg.-Elect.)

भा.वि.प्रा., राजा भोज विमानतल, भोपाल - 462036

AAI, Raja Bhoj Airport, Bhopal - 462036.

कृते तथा ओर से, अध्यक्ष,

For and on behalf of Chairman,

भारतीय विमानपत्तन प्राधिकरण.

Airports Authority of India.

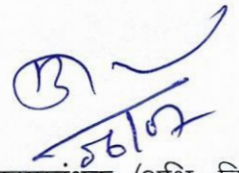
N.O.O. / मूल प्रतिलिपि पर नहीं

Copy to/ प्रतिलिपि प्रेषित :-

1. संयुक्त महाप्रबंधक (सतर्कता), भा.वि.प्रा
पश्चिमी क्षेत्र, सी.एस.आई. एयरपोर्ट, मुंबई-99. (निविदा प्रपत्र के शेड्यूल 'A' कि कॉपी सहित)
Jt. General Manager (Vigilance) AAI.
Western Region, C.S.I. Airport, Mumbai-99 (Along with copy of Schedule 'A' of tender document)
2. आयकर आयुक्त
आयकर कार्यालय, होशंगाबाद रोड,
मैदा मिल के सामने, भोपाल।
Commissioner of Income Tax,
Income Tax office, Hoshangabad Road, Opposite Maida Mill, Bhopal.

आंतरिक/ INTERNAL

1. कार्यपालक निदेशक, पश्चिमी क्षेत्र, भा.वि.प्रा., राजीव गांधी भवन, सफ़दरजंग एयरपोर्ट, नई दिल्ली - 110003
..... जानकारी हेतु।
Executive Director, Western Region, AAI, Rajiv Gandhi Bhawan, Safdarjung Airport, New Delhi - 110003
..... for information please
2. महाप्रबंधक (अभि), भा.वि.प्रा, दुमना विमानतल, जबलपुर - 482005
..... जानकारी हेतु।
General Manager (Engg.), AAI, Dumna Airport, Jabalpur - 482005
..... for information please
3. विमानपत्तन निदेशक, भा.वि.प्रा, राजा भोज विमानतल, भोपाल-462036
..... जानकारी हेतु।
Airport Director, AAI, R.B. Airport, Bhopal - 462036.
..... for information please
4. संयुक्त महाप्रबंधक (अभि.-सि), भा.वि.प्रा, राजा भोज विमानतल, भोपाल-462036
..... जानकारी हेतु।
Jt. Gen. Manager (Engg.-Civil), AAI, R.B. Airport, Bhopal - 462036
..... for information please
5. सहायक महाप्रबंधक (वित्त), भा.वि.प्रा, राजा भोज विमानतल, भोपाल-462036
..... जानकारी हेतु।
Asstt. Gen. Manager (Finance), AAI, R.B. Airport, Bhopal - 462036
..... for information please
6. सहायक महाप्रबंधक (अभि- विद्युत), भा.वि.प्रा, राजा भोज विमानतल, भोपाल-462036
..... कार्यस्थल सौंपने एवं
उचित कार्यवाही हेतु।
Asstt. Gen. Manager (Engg.-Elect.), AAI, R.B. Airport, Bhopal - 462036
..... To handover the site and
necessary action.
7. प्रबंधक (अभि- विद्युत), भा.वि.प्रा, राजा भोज विमानतल, भोपाल-462036
..... ठेका करारानुसार कार्य
निष्पादन हेतु।
Manager (Engg.-Elect.), AAI, R.B. Airport, Bhopal - 462036
..... To Supervise the work as per
contract agreement.
8. करार प्रति/Agreement Copy.
9. कार्य फाईल/Works File.



उप महाप्रबंधक (अभि.-विद्युत)
Dy. Gen. Manager (Engg.-Elect.)

Validate

Print

Help

Item Rate BoQ

Tender Inviting Authority: AGM(E-E), AAI, R.B. Airport, Bhopal

Name of Work: Construction of ATC Tower cum Technical Block at RAJA BHOJ AIRPORT BHOPAL. SH: Substation & Allied works.

Contract No: AAI/BPL/ENGG(E)/NIT-05/2022-23

Name of the Bidder/
Bidding Firm /
Company : RASS CONTRACTOR & ENGINEERS

PRICE SCHEDULE

(This BOQ template must not be modified/replaced by the bidder and the same should be uploaded after filling the relevant columns, else the bidder is liable to be rejected for this tender. Bidders are allowed to enter the Bidder Name and Values only)

NUMBER #	TEXT #	NUMBER #	TEXT #	NUMBER #	NUMBER #	TEXT #
Sl. No.	Item Description	Quantity	Units	BASIC RATE In Figures To be entered by the Bidder (Without GST) Rs. P	TOTAL AMOUNT in Rs. P	TOTAL AMOUNT In Words
1	2	4	5	13	53	55
1.00	Supplying, installation, testing & commissioning of indoor type floor mounted metal clad, 33 KV, 31.5 kA/ 3Sec VCB panel with 4 Nos. VCBs (2 Incomer + 2 Outgoing), totally enclosed & fully interlocked, horizontal drawout, horizontal/ vertical isolation type breaker as per IS 13118, as amended up to date and additional specifications, having capacities as mentioned below, single break, trip free mechanism, manually charged and auto/manually closing breaker suitable for use on 33 KV, 3 Phase, 50 Hz A.C. supply with short circuit fault level of 350 MVa, complete with self contained, fully interlocked, rack in and rack out mechanism, air insulated but encapsulated copper bus bars of 630 Amps capacity, breaker featured with mechanical ON/OFF indicator with hand trip device, spring release coil, shunt trip coil and auxiliary switch of 4 NO+4NC and equipped with following switchgears and accessories i/c connections suitable for 3 x 300 sq. mm. XLPE 33 KV cable (cable entry from bottom side) complete etc as required.					

B

NUMBER #	TEXT #	NUMBER #	TEXT #	NUMBER #	NUMBER #	TEXT #
Sl. No.	Item Description	Quantity	Units	BASIC RATE In Figures To be entered by the Bidder (Without GST) Rs. P	TOTAL AMOUNT in Rs. P	TOTAL AMOUNT In Words
1	2	4	5	13	53	55
1.01	Incomer a) 630 Amp, 3 Pole, 33 KV, 31.5 kA / 3Sec Vacuum Circuit Breaker (VCB) Horizontal Isolation and Horizontal draw out type - 02 No. b) 33 KV / 110 Volts PT Class 0.5 accuracy and 100 VA burden with 1 No. Voltmeter (0 - 33 KV), digital type with inbuilt selector switch for voltmeter and protection MCB for HT metering upto 33 KV on Incomer - 2 Set (c) (0-300 A) dual scale Ammeter digital type with inbuilt selector switches for Ammeters - 02 Set (d) Microprocessor based numerical IDMT relay with O/L, E/F and S/C protection - 02 Set (e) Set of dual core dual ratio 3 CTs 300/150/5/5 A of 15 VA burden and accuracy Class – 0.5 for metering and class 5P10 for protection - 02 Set (f) Multifunction meter class CL-1 with RS 485 port - 02 Set (g) 7 AH Power pack 220 VAC / 110 VDC (h) RYB phase indicating LED lamp (i) Trip circuit healthy indicating LED lamp (j) Control T-N-C (Trip, Neutral, Close) breaker control switch with indication arrangement (k) Space heater with thermo state for moisture absorption (l) Emergency trip push button (m) All control wiring with protection & test terminal block as required (n) Toggle switch with LED lamp each bay (o) 33 KV HT danger plate and feeder details plate					
1.02	Outgoing (a) 630 Amp, 3 Pole, 33 KV, 31.5 kA / 3Sec Vacuum Circuit Breaker (VCB) Horizontal isolation and Horizontal draw out type - 02 Nos. b) (0-100 A) Ammeters, dual scale digital type & selector switches for Ammeters - 2 Set (c) Microprocessor based numerical IDMT relays with O/L, E/F & S/C protections - 02 Set (d) Set of dual core dual ratio 3 CTs 200/ 100/5/5 A of 15 VA burden and accuracy Class-1.0 for metering and class 5P10 for protection - 02 Set (e) Multifunction meter class CL-1 with RS 485 port - 02 Set (f) Control T-N-C (Trip, Neutral, Close) breaker control switch with indication arrangement (g) Space heater with thermo state for moisture absorption (h) Emergency trip push button (i) All control wiring with protection & test terminal block as required (j) 2 Nos. Auxilliary relays for transformer faults WTI with alarm, trip and hooter (k) Toggle switch with LED lamp each bay (l) 33 KV HT danger plate and feeder details plate (m) 8 window annunciator with push button and hooter					

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1	2	4	5	13	53	55
1.03	33 KV 4 VCB (2 incomer + 2 outgoing) HT panel as mentioned above	1.00 ✓	Each	2417692.00 ✓	2417692.00 ✓	INR Twenty Four Lakh Seventeen Thousand Six Hundred & Ninety Two Only
2.00	Supply, Installation, Testing & Commissioning of Cast Rasin Dry Type 1600 KVA, 33/0.433 KV, 3 Phase, 50 Hz, Dyn11 vector group, copper wound, class "F" insulation associated with winding temperature indicator / controller actuated by means of resistance temperature detector embedded in LV windings, indoor type Transformer (off circuit tap link) with Approximately 6% impedance, tapping for off load operation on HV side +5% to -5% in step of 2.5%, having cable end boxes on HV side suitable for 3x 300 sqmm XLPE cable of 33 KV grade and 2500 Amp. bus trunking arrangement on LV side with neutral brought out separately including supplying and laying of copper conductor multicore control cable from transformer to HT breaker for safety tripping, suitably mounted on M.S. Channel i/c supplying and grouting of suitable M.S. Channel with all accessories and confirming to IS 11171:1985 & as per specification attached complete in all respects as required at site. (Transformer losses as per ECBC)	2.00 ✓	Set	4114318.00 ✓	8228636.00 ✓	INR Eighty Two Lakh Twenty Eight Thousand Six Hundred & Thirty Six Only
3.00	Supply, Installing, Testing and Commissioning of 'Silent Type' Diesel Generating set alongwith having Prime Power Rating of 750 KVA, 3 Phase, 50 Hz, 415 V AC System, comprising of Deisel Engine, Alternator, Engine Mounted instrument panel, Sound Attenuated Acoustic and weather proof enclosure as required complete with all other accessories as per specifications and as required.					
3.01	Diesel Engine: Diesel engine multi cylinder, 4 stroke, water cooled, with engine driven or electrical motor driven radiator, turbo charged - after / inter cooled with charged air cooling, vaccume indicator, lube oil system, electronic governor, electric start, of suitable BHP at 1500 RPM for above output of alternator at 46 Degree C, and conforming to BS 5514, BS 649, IS 10000. The engine shall be fitted with all required accessories as per specifications.					

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1	2	4	5	13	53	55
3.02	Alternator Synchronous alternator rated at 750 KVA, 415 volts at 1500 RPM, 3 phase 50 Hz, AC supply with 0.8 lagging power factor at 46 degree C. The alternator shall be having SPDP enclosure, brushless excitation, continuous duty, self-excited and self-regulated through AVR conforming to IS: 4722/BS 2613 suitable for tropical conditions and with class - "H" Insulation.					
3.03	Base Frame : Both the engine and alternator shall be mounted on common base frame made of MS channel with vibration isolation arrangement and shall be installed on existing cement concrete foundation as per recommendations of manufacturer.					
3.04	Fuel Tank: Daily service fuel tank of 990 liters capacity fabricated out of 2 mm thick M.S./CRCA sheet complete with all standard accessories and fuel piping between fuel tank and diesel engine with MS class 'C' pipes of suitable dia. Complete with valves, level indications & accessories as required as per specifications.					
3.05	Exhaust System: Residential / Hospital type silencer, SS braided rubber expansion bellows/ joints, exhaust piping upto silencer etc. as required.					
3.06	Starting System: 24V DC starting system comprising of starter motors: voltage regulator and arrangement for initial excitation complete with suitable Nos. of batteries (12 V, 160 / 180 Amp. Hour capacity) as required as per specifications.					
3.07	Engine mounted Instrument panel with microprocessor based fully integrated generating set controller (PCC 3.3 / WOODWARD / DEIF or equivalent) having digital display & Control devices for safety and monitoring alongwith indicators as required as per specifications.					
3.08	All the above (except Day Oil tank) housed in an Accoustic and weather proof enclosure of thickness not less than 16 SWG CRCA sheet steel with arrangement for fresh air intake for cooling of the engine & alternator, extraction, discharging hot air into the atmosphere complying to CPCB norms etc. complete as required.					

NUMBER # Sl. No.	TEXT # Item Description	NUMBER # Quantity	TEXT # Units	NUMBER # BASIC RATE In Figures To be entered by the Bidder (Without GST) Rs. P	NUMBER # TOTAL AMOUNT in Rs. P	TEXT # TOTAL AMOUNT In Words
1	2	4	5	13	53	55
3.09	Diesel Generating set (750 KVA) as described above.	2.00 ✓	Each	4114502.00 ✓	8229004.00 ✓	INR Eighty Two Lakh Twenty Nine Thousand & Four Only
4.00	Supplying and fixing exhaust gas piping of suitable dia. for 750kVA D.G. Set MS Black Pipe P/E conforming to IS:3589 cut to required lengths and installed with necessary bends, supports and clamps, anti-vibration mountings, insulation of exhaust system with mineral wool/ Rockwool, 50 mm thick wiremesh & aluminum cladding etc., as required as per specifications.	40.00 ✓	Meter	6362.00 ✓	254480.00 ✓	INR Two Lakh Fifty Four Thousand Four Hundred & Eighty Only
5.00	STRUCTURE FOR EXHAUST PIPING Providing & fixing for MS support structure for exhaust fume pipes from DG Sets (Exhaust pipe to be measured and paid for separately) along horizontal and vertical runs upto the height (as per CPCB norms) including cutting, welding etc and applying two coats of red oxide and two coats of synthetic enamelled paint of colour and shade as directed by client/Architect. The design of the support structure shall be done by the contractor and shall be as per CPCB norms approved etc. as required.	8000.00 ✓	Kg	106.00 ✓	848000.00	INR Eight Lakh Forty Eight Thousand Only
6.00	Supply & fixing of Stainless Steel Expansion Joints, Corrugated bellow for 750 kVA to fit in exhaust pipe.	2.00 ✓	Nos.	12725.00 ✓	25450.00	INR Twenty Five Thousand Four Hundred & Fifty Only
7.00	M.V. PANEL Design, Manufacture, Supplying, Transport to the site, Receiving, Unloading, Shifting to various locations, handling, assembling, installation in correct aligned position, grouting with dash fasteners, GI nuts-bolts, testing and commissioning of Totally Type Tested Panels (Form-4B construction) complying to IEC:61439 -1/2 cubical with Internal arc withstand of 50kA for 0.3 second and minimum impact resistance IK10 as per IEC:62262 with each compartment front and back sheet steel metal door. The degree of protection of minimum IP:42 for indoor and IP:65 for outdoor use. Panels shall be tested for an Impulse Withstand Voltage of 12kV. Suitable for 415V, 3Phase, 4 Wire 50 Hz Ac supply system bolted fabricated in compartmentalized (preferably) design from CRCA sheet steel of 2mm thick for frame work and covers, 3mm thick for gland plate, bottom base channel of MS section not less than 100mmx 50mmx50mmx 5mm thick for Main L.T. Panel and 40mmx25mmx25mmx 5mm thick plates for MDB/MCC and SDBs etc.					

NUMBER #	TEXT #	NUMBER #	TEXT #	NUMBER #	NUMBER #	TEXT #
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7.01	incl. cleaning & finishing complete, SMC bus bar supports, with short circuit withstand capacity of minimum 50kA for 1 Sec., fabrication shall be done in transportable sections and all front and back doors shall be hinged type and earth with frame, Entire panel shall have a common copper continuous earth bar of size 40mm x 6mm or as specified below at the rear with 2 Nos. earth stud each side, solid inter connections from main bus bar to switch gears upto cable alley with required size. bus bars and insulated control wiring with suitable size of FRLSH PVC insulated copper conductor cable, cable alleys, cable gland plates in two half, incl. providing following switch gears :-					
7.02	The Bus bars will be electrolytic grade E91 Aluminium. Panels will be powder coating (60-80micron as per IS:13871 for indoor and 90-100 micron for outdoor), include one size higher terminal block in cable alley and interconnecting wires between bus bars and terminals via MCB. All Bus-Bar alley and relay compartments shall be provide fully automatic control thermostat with strip heater.					
7.03	INCOMING- I & II (FROM TRANSFORMER)					
7.04	2 Nos. 2500 Amps four pole electrically operated fully drawout type air circuit breaker (50kA) with built in microprocessor based release unit protection for short circuit, over current and earth fault protection with adjustable setting as per specification + 100% Capacity Neutral contactor and each incomer with following accessories:					
7.05	1 Set of RYB phase indicating LED lamps controlled by 2 amp MCB.					
7.06	1 Set of 'ON', 'OFF', 'TRIP & TCH (Trip circuit healthy) LED lamps controlled by 2 amp MCB.					
7.07	1 No. Digital MFM meter and 3 nos. Cast resin CTs of ratio 2500/5A , Class 0.5 accuracy and 15 VA burden. digital multifunction meter suitable to measure voltage, Ampere, Frequency, Power Factor, Measurement of both KVA/KW/kVAH/MDI, Individual Odd Harmonics for voltage and current including THD with RS-485 port.					
7.08	1 Set of Single phase preventer indicating LED lamps controlled by 2 amp MCB for trip and hooter for alarm.					

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7.09	1 Set of Phase Reversal relay indicating LED lamps controlled by 2 amp MCB for trip and hooter for alarm.					
7.10	BUSCOUPLER					
7.11	1 Nos. 4000 Amps four pole electrically operated fully drawout type air circuit breaker (50kA) with built in microprocessor based release unit protection for short circuit, over current and earth fault protection with adjustable setting as per specification + 100% Capacity Neutral contactor and each with following accessories:					
7.12	1 Set of 'ON', 'OFF', 'TRIP' LED lamps controlled by 2 amp MCB.					
7.13	Provide electrical and mechanical interlocking between Main incomers and buscoupler.					
7.14	BUSBARS SECTION-I & II					
7.15	4P aluminium bus bars of 4000A capacity with heat shrinkable coloured sleeves i/c SMC bus bars supports at required intervals complete for cross section, size supports & their spacing etc. for withstanding fault level of 50 KA for 1 sec.					
7.16	The electrical panel shall be fully ventilated to maintain internal body temp. < 40 deg 'C' when room amb. temp. is equal of less than 35 deg 'C'. Required ventilation fans shall be provided and tested.					
7.17	OUTGOING SECTION-I & II					
7.18	1 Set of 'ON', 'OFF', 'TRIP' LED lamps controlled by 2 amp MCB with each MCCB outgoing.					
7.19	1 Set of 'ON', 'OFF', 'TRIP' & TCH (Trip circuit healthy) LED lamps controlled by 2 amp MCB with each ACB outgoing.					
7.20	4 Nos. 1250 Amps four pole electrically operated fully drawout type air circuit breaker (50kA) with built in microprocessor based release unit protection for short circuit, over current and earth fault protection with adjustable setting as per specification + 100% Capacity Neutral contactor and each incomer with following accessories:					
7.21	2 Nos. 630A 4P MCCB with built in Microprocessor based release with adjustable thermal setting (Ics = Icu = 50 KA)					

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1	2	4	5	13	53	55
7.22	2 Nos. 400A 4P MCCB with built in Microprocessor based release with adjustable thermal setting (Ics = Icu =50 KA)					
7.23	Each outgoing with digital MFM meter and 3 nos. Cast resin CTs of ratio as required, Class 0.5 accuracy and 10 VA burden. digital multifunction meter suitable to measure voltage, Ampere, Frequency, Power Factor, Measurement of both KVA/KW/kVAH/MDI, Max. Demand with RS-485 port.					
7.24	Each outgoing MCCB shall be with 1 Set of earth leakage relay (ELR) (30-3000mA) with CBCT & TRIP due to earth leakage Indicating LED Lamps with 2 Amp MCB for each outgoing MCCB.					
7.25	MAIN L.T. PANEL (E.S.S BLOCK) as described above	1.00	Each	2969096.00	2969096.00	INR Twenty Nine Lakh Sixty Nine Thousand & Ninety Six Only
8.00	HPFC PANEL - 400 Amp. APF3N + 200 KVAR (Detuned RTPFC) Panel Design, fabrication, assembly, wiring, supply, erection, testing and commissioning of Hybrid Power Factor Correction Panel to achieve 0.99 Lag and THDI / THD less than 5%. The Solution should have an incomer of MCCB as specified below, 433V, +/- 10 % 50Hz, 3 phase, 50KA, 3 Wire System. The system shall be of certified design as per IS 16636. The degree of protection of enclosures system shall be IP42 in accordance with IEC 60529. The switching device of the active compensation system shall be IGBT based. The active compensation system should be CE certified. The active compensation system should filter harmonics from 2nd to 51st individual harmonic order and shall be selectable for the entire range. The active compensation system should have feature to improve PF correction as well. The active compensation system should have a Multi master operation. Response time shall be equal or less than 100 micro Sec. The switching device of the passive compensation system shall be thyristor Based. The capacitor bank shall compromise of capacitor units, de tuning reactors, PF controllers, circuit breakers etc as specified below:					
8.01	Controller- The system shall have integrated DSP controller based for Active and Passive section and shall be able to sense the reactive current requirement of the network and shall switch ON/OFF the required stages of a capacitor bank.					

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8.02	The Hybrid Power Factor Correction panel shall comprising of following:					
8.03	Main Incomer MCCB 1 No. of 630 A Microprocessor based release FP MCCB with inbuilt O/C, S/C & carth fault protection (Ics = Icu = 25 KA) with 1 Set of Digital flush type calibrated Intelligent multifunction meters (with communication port) suitable rating class - 1.0 accuracy, showing V. A. PF, KW, KWH, Total harmonic distortion with 3 Nos. current transformers of dual core CT's of suitable Amp. ratio, 15 VA Class 1.0 metering, Tinned copper Spreader links, Phase barrier both side and extended rotary handle of circuit breaker complete with Interconnection connections etc.					
8.04	Bus Bar: Electrolytic high conductivity Aluminium extensible three phase and neutral busbars rated at 800 amps auxiliary Bus Bars of suitable capacity insulated with heat shrinkable coloured PVC sleeves & clip on shrouds for joints having a maximum current density as per indian standards suitable to with stand symmetrical fault level of 36 kA at 500 volts i/e polyamide bus bars supports at required intervals complete for cross section, size supports & their spacing etc. The neutral busbar is to be 100% of phase bus-bars.					
8.05	Hybrid Solution of Active filter of 400A and Passive component of 200kVAR: 1 nos of 400A, Active harmonic filter with 400Amp, FP 35kA (Ics-Icu upto 433 V), MCCB with inbuilt O/C, S/C & E/F protection and 400A, TP, AC3 contactor. 6 nos x 33.1 kVAR @ 525V with output of 25kVAR @ 415V, de-tuned MPP Heavy duty capacitor bank with 100A, 3P, MCCB 35kA (Ics-Icu upto 433 V) with inbuilt O/C, S/C & E/F protection. Each capacitor bank shall have 50 kVAR thyristor switching module and 110A Semi-conductor HRC Fuses. 4 Nos. 50 kVAR, 14% copper Detuned reactor. Integrated Digital signal Processor (DSP) controller which shall control both the capacitors as well as Active Filter. The Solution should have surge arrestors 100kA and over temperature protection > 45 deg C. The system should be with compatible with Grid Power or D.G. Power Supply.					

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8.06	The capacitor banks should be of type tested design and temperature rise test report of the capacitor bank performed at an independent laboratory should be submitted. HPFC PANEL-400 Amp. APF3N + 200 KVAR Panel as described above.					
8.07	HPFC Panel - 400 Amp. APF3N + 200 KVAR Panel as described above.	2.00	Each	1060391.00	2120782.00	INR Twenty One Lakh Twenty Thousand Seven Hundred & Eighty Two Only
9.00	Earthing with G.I. earth plate 600 mm X 600 mm X 6 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 meter long etc. with charcoal/ coke and salt as required.	12.00	Set	7211.00	86532.00	INR Eighty Six Thousand Five Hundred & Thirty Two Only
10.00	Earthing with copper earth plate 600 mm X 600 mm X 3 mm thick including accessories, and providing masonry enclosure with cover plate having locking arrangement and watering pipe of 2.7 meter long etc. with charcoal/ coke and salt as required.	8.00	Set	13149.00	105192.00	INR One Lakh Five Thousand One Hundred & Ninety Two Only
11.00	Providing and fixing 25 mm X 5 mm copper strip in 40 mm dia G.I. pipe from earth electrode including connection with brass nut, bolt, spring, washer excavation and re-filling etc. as required.	140.00	Meter	1574.00	220360.00	INR Two Lakh Twenty Thousand Three Hundred & Sixty Only
12.00	Providing and fixing 50 mm X 6 mm G.I. strip in 80 mm dia G.I. pipe from earth electrode including connection with G.I. nut, bolt, spring, washer excavation and re-filling etc. as required.	130.00	Meter	445.00	57850.00	INR Fifty Seven Thousand Eight Hundred & Fifty Only
13.00	Providing and fixing 25 mm X 5 mm copper strip on surface or in recess for connections etc. as required.	60.00	Meter	1060.00	63600.00	INR Sixty Three Thousand Six Hundred Only
14.00	Providing and fixing 50 mm X 6 mm G.I. strip on surface or in recess for connections etc. as required.	110.00	Meter	276.00	30360.00	INR Thirty Thousand Three Hundred & Sixty Only

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1	2	4	5	13	53	55
15.00	BUS DUCT Supplying, installing by suspension on ceiling/along the wall, testing and commissioning of 2500 A, Isc = 50 kA for 1 second capacity Sandwich Type Rising Mains for use on 3 phase 4 wire 415 V, 50Hz A.C. supply with metal clad enclosure having IP-54 rating after fixing the tap off boxes and all accessories, made of 1.6mm thick steel sheet duly powder coated in convenient sections complete with 4 Nos. ETP grade aluminium bus bars with 99.5% purity at nominal current rating, crossovers joints, necessary joints, elbow joints & expansion joints and bends, fire barrier at each floor, provision of tapping at every meter, adopter box and copper flexible for joints, continuous earthing with 2 Nos. aluminium strip of suitable size (one on each side) including, G.I. clamping brackets, suspenders, angle iron bracket, steel fasteners, connecting to earthing system etc. as required.	40.00 ✓	Meter ✓	30963.00 ✓	1238520.00 ✓	INR Twelve Lakh Thirty Eight Thousand Five Hundred & Twenty Only
16.00	Providing, fixing & pasting in position 1000 mm wide, Electrical Insulating Mats as per IS 15652:2006, 3mm thick, suitable for 33 KV, fire retardant, no effect of acids, alkalies and transformer oils, moisture proof, high tensile strength and (Anti slip, marking on top).	30.00 ✓	RM	2121.00 ✓	63630.00 ✓	INR Sixty Three Thousand Six Hundred & Thirty Only
17.00	SUPPLY OF HT CABLES Supply of 33 kV (E) 3 Core 300 sq. mm Stranded Class-2 Compact Circular Aluminium Conductor, Conductor Screen With Extruded Semi Conducting Compound, XLPE Insulated, Insulation Screening with extruded Semi Conducting Compound in combination with Copper Tape (0.2kA for 1 sec/Core), cores laid up, innersheath/Outer of FRLS PVC tape, galvanised flat steel strip armoured and overall PVC Sheathed Cable conforming to IS 7098 / (PART-II) 1985 with latest amendments.	2000.00 ✓	Meter	2757.00 ✓	5514000.00 ✓	INR Fifty Five Lakh Fourteen Thousand Only
18.00	TERMINATION FOR 33kV H.T CABLE Supplying and making indoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminium conductor cable of 33 kV grade as required. 300 sq. mm	6.00 ✓	Each ✓	19087.00 ✓	114522.00 ✓	INR One Lakh Fourteen Thousand Five Hundred & Twenty Two Only

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19.00	Supplying and making outdoor cable end termination with heat shrinkable jointing kit complete with all accessories including lugs suitable for following size of 3 core, XLPE aluminium conductor cable of 33 kV grade as required. 300 sq. mm	2.00	Each	21717.00	43434.00	INR Forty Three Thousand Four Hundred & Thirty Four Only
20.00	STRAIGHT THROUGH JOINTS FOR HT CABLES Supplying and making straight through cable jointing with heat shrinkable jointing kit complete with all accessories including ferrules suitable for following size of 3 core, XLPE aluminium conductor cable of 33 kV grade as required. 300 sq. mm	4.00	Each	25025.00	100100.00	INR One Lakh One Hundred Only
21.00	LAYING OF HT CABLES Laying of one number XLPE power cable of 33 kV grade of following size in the existing RCC/ HUME/ METAL pipe as required. Above 120 sq. mm and upto 400 sq. mm	200.00	Meter	127.00	25400.00	INR Twenty Five Thousand Four Hundred Only
22.00	Laying of one number XLPE power cable of 33 kV grade of following size in the existing masonry open duct as required. Above 120 sq. mm and upto 400 sq. mm	100.00	Meter	127.00	12700.00	INR Twelve Thousand Seven Hundred Only
23.00	Laying of one number PVC insulated and PVC sheathed / XLPE power cable of 33 KV grade of following size direct in ground including excavation, sand cushioning, protective covering and refilling the trench etc as required. Above 120 sq. mm and upto 400 sq. mm	800.00	Meter	225.00	180000.00	INR One Lakh Eighty Thousand Only
24.00	Laying of one number additional PVC insulated and PVC sheathed / XLPE power cable of 33 KV grade of following size direct in ground in the same trench in one tier horizontal formation including excavation, sand cushioning, protective covering and refilling the trench etc as required. Above 120 sq. mm and upto 400 sq. mm	800.00	Meter	250.00	200000.00	INR Two Lakh Only
25.00	Supplying and fixing of Medium Class G.I. pipe of 150 mm dia. (nominal) 3 metres length along the pole for protection of under ground cable as required.	2.00	Each	4242.00	8484.00	INR Eight Thousand Four Hundred & Eighty Four Only

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1	2	4	5	13	53	55
26.00	Providing, laying and fixing following dia RCC pipe NP2 class (light duty) in ground complete with RCC collars, jointing with cement mortar 1:2 (1 cement : 2 fine sand) including trenching (75 cm deep) and refilling etc. as required.	100.00	Meter	1294.00	129400.00	INR One Lakh Twenty Nine Thousand Four Hundred Only
27.00	Supplying and making cable route marker with cement concrete 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size) of size 60 cm X 60 cm at the bottom and 50 cm X 50 cm at the top with a thickness of 10cm including inscription duly engraved as required.	20.00	Each	424.00	8480.00	INR Eight Thousand Four Hundred & Eighty Only
28.00	Supplying installing, testing & commissioning of outdoor H.T., AB switch assembly set gang operated with brass H.T., AB switch assembly set gang operated with brass contact parts, including required GI pipe operating rod, handle & locking arrangement on On-Off position conforming to IS complete with required material and installing on existing DP structure to complete the job as required as per specification.(Set of 3 nos.) 33KV 600 Amp (Market Rate)	2.00	Job	29691.00	59382.00	INR Fifty Nine Thousand Three Hundred & Eighty Two Only
29.00	Supplying installing, testing & commissioning D.O. fuse assembly with brass part contact for 33 or 11/0.4 KV DP Structure set of 3 Nos. with fuse barrel i/c required fuse element & other materials as per specification on existing D.P. structure as required. (Market Rate)	2.00	Job	46657.00	93314.00	INR Ninety Three Thousand Three Hundred & Fourteen Only
Total in Figures					33448400.00	INR Three Crore Thirty Four Lakh Forty Eight Thousand Four Hundred Only
Quoted Rate in Words		INR Three Crore Thirty Four Lakh Forty Eight Thousand Four Hundred Only				

Signature Not Verified

Digitally signed by Dadar Singh
Date: 2022.07.20 13:09:09 IST
Location: eProcurement System for Central PSUs

Dy. Gen. Manager (Engg.-Elect.)
AAI, R. B. Airport, Bhopal