भारत हैवी इलेक्ट्रिकल्स लिमिटेड
Bharat Heavy Electricals Limited
Transmission Business Group;
10th Floor Plot No.c-20/1A/1,Joy Tower,
Sector-62, Noida - 201309 (Uttar Pradesh)
email: tbsm@bhel.in

Corrigendum No. -03 Date:- 26.07.2021

Ref:

1) **Tender Spec No**: TBSM/STRATEGIC TIE -UP/ RRVPNL/TENDER/21-22 Date: 08.07.2021
2) **NIT No. : 59247 (For BHEL Website) .**
3) **NIT No.: 2021_BHEL_4465_1 (Through** https://eprocurebhel.co.in**)**

Subject of the NIT:- OPEN TENDER ENQUIRY FOR "TENDER SPECIFIC STRATEGIC TIE-UP FOR " CONSTRUCTION OF 400 KV AND 220 KV TRANSMISSION LINE WORK (DETAILS AS BELOW) INCLUDING SUPPLY OF ALL EQUIPMENT/MATERIALS, ERECTION (INCLUDING CIVIL WORKS), ARRANGEMENT / SETTLEMENT OF RIGHT OF WAY, TESTING & COMMISSIONING ON EPC BASIS" FOR M/S RRVPNL AT PACHPADRA IN RAJASTHAN.

Details of Transmission line: -

i) CONSTRUCTION OF LILO OF ONE CKT. OF EXISTING 400KV D/C RAJWEST – KANKANI LINE AT PROPOSED 400KV GSS PACHPADRA (TWIN MOOSE) -(35KMS) ON TURNKEY BASIS (DEPOSIT WORK)
ii) CONSTRUCTION OF LILO OF ALREADY CONSTRUCTED 220KV S/C BALOTARA – HRRL LINE AT PROPOSED 400 KV GSS PACHPADRA – (3 KMS.) ON TURNKEY BASIS (DEPOSIT WORK)
iii) CONSTRUCTION OF 2X220 KV S/C LINE [ON D/C TOWERS] FROM PROPOSED 400KV GSS PACHPADRA TO M/S HRRL – (28 KMS.) ON TURNKEY BASIS (DEPOSIT WORK)
iv) CONSTRUCTION OF LILO OF 220KV S/C BALOTARA – BORANDA LINE AT 400KV GSS HRRL (RVPN LAND) – 10 KMS. ON TURNKEY BASIS (DEPOSIT WORK)

With reference to the above, following Corrigendum may please be noted.

A) "Bidders may please be noted that the technical clarification shall be as per the attached "RRVPNL's Pre-Bid Clarification". In case any dispute in BHEL's tender document and the RRVPNL's Pre –bid clarifications Dated 22.07.2021 with respect to technical clarifications, the RRVPNL's Pre –bid clarifications dated 22.07.2021 shall be prevailed.

Bidders are advised to kindly go through the RRVPNL's Pre Bid Clarifications carefully before submission of their offer. "

B) Due date **& time for tender submission and technical bid opening are extended as below:**
Tender submission date & time: 02.08.2021, 14:30 hrs.
Technical bid opening date & time: 02.08.2021, 15:30 hrs

- Bidders are requested to submit a copy of Corrigendum no. -03 duly signed & stamped by their authorized signatory and submit along with their Technical bid.
- All other terms & conditions of the tender specifications remain unchanged.
- This corrigendum is to be read along with corrigendum issued earlier.

Mukesh Paswan
Addl. General Manager/ TBSM 26/8/

Enclosure: M/s RRVPNL's Pre –bid clarifications Dated 22.07.2021

RAJASTHAN RAJYA VIDYUT PRASARAN NIGAM LIMITED.
[Corporate Identity Number (CIN):U40109RJ2000SGC016485]
(Regd. Office: VidyutBhawan, Jan Path, Jyoti Nagar, Jaipur - 302005)
OFFICE OF THE SUPERINTENDING ENGINEER (Contracts-II)
(MM Building of RVPN, Old Power House Premises, Near Ram Mandir, BaniPark , Jaipur.)
Email:- se.contract2@rvpn.co.in M:- 9413384026

RVPN
An ISO 9001:2015 Certified Company

No. RVPN/SE(Contract-II)/XEN-3/ BN-9019002102/D. 258 Jaipur, Dt: 22/7/24

PRE BID CLARIFICATION

Sub :- Construction of 400/220KV GSS Pachpadra along with 500MVA 400/220/33 KV Transformer and 400 KV, 125MVAR Bus Reactor Including Supply of All Equipments/Materials, Erection (Including Civil Works), Testing and Commissioning (on Turnkey Basis) and associated 400KV & 220KV Transmission Lines Under Bid No.: BN-9019002102, (UBN- VPN2122WLOB00193).

On above subject the kindly find enclosed herewith the reply of queries asked by the bidders against the subject cited bid as pre bid clarification No. 01 , 02 & 03 .

22/07/2024

Superintending Engineer(Contracts-II)
RVPN, Jaipur

PRE BID CLARIFICATION NO. 01

Construction of 400 KV GSS Pachpadra along with its associated lines under Bid enquiry No. RVPN/ BN.-9019002102

S.No.	Document/ Clause No. / Ref. No.	Existing Provisions	Modified provision in the bid document .
1	ANNEXURE-A (PQR) Point No 4.	500 MVA, 400/220/33 kV, 3-Phase Transformer, 1. The bidder shall supply 400/220/33 KV EHV Transformers of various MVA Rating from the manufacturer, who must have designed, manufactured ,tested, supplied, installed and supervised installation, testing & commissioning of at least 5Nos. of 315 MVA or above rating of transformer /Generator Transformer(or equivalent capacity in banks of 3 single phase units)of 400KV or above voltage class transformers during last seven (7) years in India as on the date of technical bid opening . 2. At least 02(Two) nos of power transformers supplied in India should have satisfactory operation for at least two (2) years in India as on the date of technical bid opening or be authorized by such as manufacturer to supply and provide after sales services with necessary back-up support from the manufacturer.as on the date of technical bid opening.	500 MVA, 400/220/33 kV, 3-Phase Transformer **1.1 The bidder may be manufacturer or be authorized by such manufacturer who have designed , manufactured, tested, supplied, installed and commissioned, supervised installation & testing of at least 5 Nos. of 315 MVA, 400/220/33 KV EHV Transformers or above rating of transformer /Generator Transformer (or equivalent capacity in banks of 3 single phase units)of 400KV or above voltage class transformers during last seven (7) years in India as on the date of technical bid opening .** **Out of above, at least 02(Two) nos of power transformers supplied in India should have satisfactory operation for at least two (2) years in India as on the date of technical bid opening .** **OR** **1.2 The 400 kV or above class transformer manufacturer who has established production line in India for these equipment's based on technological support of parent company or collaborator provided:** a) Such manufacturer has designed, manufactured, type tested, supplied, supervised installation and commissioning of " 220 kV or above class Transformer". Transformer should have been in satisfactory operation for atleast 3 years on the date of technical bid opening. b) The parent company (Principals) or collaborator should have designed , manufactured, tested, supplied, installed and commissioned, supervised installation & testing of at least 5 Nos. of 315 MVA, 400/220/33 KV EHV Transformers or above rating of transformer /Generator Transformer (or equivalent capacity in banks of 3 single phase units) of 400KV or above voltage class transformers during last seven (7) years as on the date of technical bid opening. Out of above, at least 02(Two) nos of power transformers supplied should have satisfactory operation for at least two (2) years as on the date of technical bid opening . *c) Such manufacturer furnishes:* *i) a legally enforceable undertaking (Jointly with the parent company or collaborator) (as per the format Appendix-1(A)) to guarantee quality, timely supply, performance and warranty obligations as specified for the equipment (s)to be manufactured and supplied from his works in India and another undertaking for*

			ensuring after sales service and spares in prescribed schedule ; and *ii) An undertaking from the parent company or collaborator alongwith the bid stating that parent company or collaborator shall furnish performance guarantee upto Contract Performance Guarantee Period for an amount of 10% of the cost of such equipment(s). This performance guarantee shall be in addition to performance guarantee to be submitted by the bidder. Alternatively this undertaking and PBG can be submitted by such manufacturer*
2	Technical Specifications (500 MVA , 400/220/33 KV Power Transformer	New Addition.(Clause No 5.2) (Special Test)	**SHORT CIRCUIT TEST:** **Bidder / Manufacturer shall provide Dynamic Short Circuit test carried out on 500MVA 400/220/33kV 3-Phase Auto transformer having similar design along with bid. In case bidder/manufacturer has not successfully conducted Dynamic Short Circuit test on above rating Auto transformer then they shall provide the test report before submission of documents for approval of design of transformer after award of contract .** **.The Bidders are required to furnish detailed Short circuit test report as per applicable IS: 2026 (as amended from time to time) for the test conducted at LAB against earlier order of RVPNL or any other power utilities on transformer of similar rating & design as quoted with same guaranteed No load and Load losses and percentage impedance at normal tap.** **The Short circuit test reports so furnished shall be duly attested by Notary Public and should not be older than 7(seven) years as on the date of technical bid opening.** **In absence Short circuit test report as above, the Bidder/Manufacturer shall have to arrange Short circuit test at LAB on first unit at their own cost, in case the Bidder/manufacturer is considered for placement of order.** **If the Short circuit test is arranged then No load and Load losses shall also be measured at LAB before and after short circuit test at normal and minimum tap (having maximum current).** **The test at LAB shall also be witnessed by purchaser's representative, if test is carried on first unit of purchaser for which programme indicating date and place of short circuit test shall be intimated in advance enabling purchaser to depute his representative. The original preliminary / provisional test results shall have to be forwarded by LAB directly to the purchaser in sealed cover for consideration/ approval of tests as having been satisfactorily withstood by the transformer. Detailed report shall also be forwarded at the earliest. These test reports shall be arranged by supplier for which no extra charges shall be paid.** **All routine tests (except tests which require measurement of data for type test) will be conducted after type tests. All type tests shall be conducted on the same unit unless otherwise agreed to by the purchaser.** **The bidder/manufacturer shall furnish/conduct Type test certificate from LAB i.e a Govt / a Govt. approved / a Govt. recognized / NABL accredited laboratory /ILAC i.e. International Laboratory Accreditation Cooperation (in case of foreign laboratory) or the certificates of type test conducted at manufacturer's works duly witnessed by representative of any Electricity Board/ Nigam/ Govt. Agency / PGCIL /NTPC or the**

			certificates of type test conducted in the manufacturer's own lab located in the foreign country duly witnessed by independent Agency of Power/Auto transformers.
2	Part-21 clause No 5.2.5 (technical specification for 400 KV Transformer)	New Addition.	**p) No load losses will be measured at site at the time of commissioning of transformer & that will be kept as signature/reference for future use to link with rise in gases/higher temperature, if observed. These will be measured through normal CT/CVT and standard meter available.**
4	BOQ	BOQ1,BOQ2, BOQ4, BOQ5	**FOTE , PLCC equipment ,OPGW cable length and Earthwire dismantling Qty Revised as per site conditions and detailed in respective BOQs.**

PRE BID CLARIFICATION (PBC) NO. 02

Construction of 400 KV GSS Pachpadra along with its associated lines under Bid enquiry No. RVPN/ BN.-9019002102

S.No.	Document/ Clause No. / Ref. No.	Provisions as per Specification	Clarification Requested	RVPN Reply
1.	Annexure-A (Pre-qualifying Requirement clause 2.1	**Lead Partner(Minimum requirement)** Should have at least constructed and commissioned 1 No. of sub substation with or without supply of power transformer/ reactor anywhere in India of 400 KV and above voltage class on Turnkey** . The Contract shall be in satisfactory operation for a period of one(1) year within last three Years.	**We cannot bid as lead partner as we don't have the 400 KV GSS Experience, we are not allowed to bid in a bid as sub-partner and we therefor request rvpnl to allow us to bid as a lead partner of the JV based on our 400 KV Line experience.**	Please Adhere to the bid document.
2.	Annexure-A (Pre-qualifying Requirement) Clause 2.2	1. Bidder shall have constructed & commissioned minimum 2 Nos. of substations anywhere in India with or without supply of power transformer/ reactor of 400 KV or higher voltage class S/S at two different locations within last five years on the date of technical bid opening . At least one Sub-Station out of above commissioned under Turnkey** Contract shall be in satisfactory operation for a period of one(1) year within last three Years. (Supporting documents/Certificates of original customer to be submitted.) with Sub-Station Automation System / SCADAas on the date of technical bid opening .	We presume that 2 Nos of 400kV Substations shall be commissioned in last 5 Years from the date of bid opening & at least one Sub-Station out of above commissioned shall be in satisfactory operation for a period of one (1) year and **the performance certificate** shall be issued within the last 3 years from the date of bid opening & We presume that Purchase order copy which comprises the BOQ of Sub-Station Automation System / SCADA is sufficient to meet the tender requirement And is not mandatory to mention SAS/SCADA details in Performance certificate Please clarify and confirm whether bidder understanding is correct or not	In case of SAS/SCADA supporting documents be furnished to establish its supply & installation/performance certificate.
3	Drawings	400/220KV GSS PachpadraSLD	In given tender document there is no SLD attached in "Drawings " It is requested to provide the 400/220KV GSS Pachpadra- SLD for better understanding.	SLD Enclosed.
4	Drawings	400/220KV GSS- Section Layout	In BPS some of the line items are estimate (i.e Insulator hardware, BPI's ,Insulators ,Clamps etc) by BIDDER however given "400/220KV GSS" Section's is not clear for understanding the design .It is requested to furnish the clear PDF /CAD drawing for better to estimate the LOT items. In given tender document there is no SECTION LAYOUT for 220KV in "Drawings " It is requested to furnish the clear PDF /CAD drawing for better to estimate the LOT items.	Section drawing for 400 KV & 220 KV Enclosed.(for tender purpose only)

5	BID PRICE SCHEDULE	HARDWARES AND MECHANICAL/ELECTRICAL AUXILIARIES	We are not envisaged line side string insulator as well as string hardware for 400KV & 220KV line feeders. Please confirm the bidder understanding is correct.	Bidder shall bid for construction of GSS & line in combined.
6	Drawings	Earth Mat layout of _400/220KV GSS Pachpadra	There is no earth mat drawing on given "DRAWINGS" Doc. It is request to provide the earth mat drawing or Please provide us the soil resistivity of the for 400 KV GSS Pachpadra site for estimation of earthing quantity.	Soil testing report Enclosed.
7	Drawings	AC /DC Power Distribution diagram	Given "AC Power & DC Distribution diagram" is not clear for understanding the design .It is requested to furnish the clear PDF drawing for better understanding to estimate the LOT items.	AC Power & DC Distribution diagram enclosed (for tender purpose only)
8	BID PRICE SCHEDULE	Copper control cables (UnArmoured)	It is requested to provide the Control cable philosophy details, To estimate the cable LOT items	Refer part-12 (Vol-II) of bid document.
9	General	ROW for400/220 kV GSS land	We presume that the land is owned by RRVPNL and there are no ROW issues	Land has been allotted to RVPN
10	Drawings	Tentative ELP of 400/220 kV GSS	Please provide the coordinates of GSS land	Already uploaded with bid documents in drawing folder.
11	Drawings Tech Spec Vol-2 GSS	Tentative ELP of 400/220 kV GSS Cl 2.0 Scope	In Drawing Sectionalizer for 220kV is Only 1 NO. But as per Spec it is given 2 Nos. Please clarify.	SLD Enclosed.
12	General		Request to provide the Priority of Documents to be followed in order	Refer clause (c) part-1 ITB(Vol-1) and ITB-16.3 of BDS.
13	Drawing BPS	Tentative ELP of 400/220 kV GSS 220kV Beam AB1/AB2	In drawing for 220kV Yard the beams are not mentioned request to provide the same	Mentioned in ELP.
14	BPS	BPS	There are no line items for FOTE eqt like OTDR OPM as per Pg 389 of FOTE spec. Kindly confirm the requirement	Please Adhere to the bid document.
15	BPS	FODP 24F - 2 Nos FODP 48F - 2 Nos		Refer revised BOQ.
16	BPS	FOTE Terminal Eqt	We presume that the given FOTE terminal eqt is for 2 Nos 220kV 28kM Line on D/C Towers at 400/220kV GSS End. Please clarify	04 Nos FOTE Required 1. 400kV Pachpadra 2. 400kV GSS Kankani 3. 220kV GSS HRRL 4. 220kV GSS Balotara(BOQ1 & BOQ2 revised accordingly).

17	Tech Spec Vol-2 GSS	Cl 2.0 Scope PLCC equipments / system and OPGW communication system	Kindly elaborate the specific scope requirements of PLCC and communication system.	For Communication & Protection purpose
18	Tech Spec Vol-2	Destringing of Earth wire	In BPS there is no item for destringing of Earth wire. Kindly confirm if any	Refer S.No 22 of BOQ5
19	BPS 400kV Line 35kms	Earth wire vibration dampers, MSCJ etc items are given	But OPGW is the requirement. Kindly confirm the requirement for earth wire hardware	Confirmed.
20	Volume-I Part-VI, Annexure-A	Technical Experience: Bidder shall have constructed & commissioned minimum 2 Nos. of substations anywhere in India with or without supply of power transformer/ reactor of 400 KV or higher voltage class S/S at two different locations within last five years on the date of technical bid opening . At least one Sub-Station out of above commissioned under Turnkey** Contract shall be in satisfactory operation for a period of one(1) year within last three Years.	Please clarify whether GIS substation experience executed for private developers will also be consider for QR evaluation?	Both AIS/GIS are acceptable provided the bidder shall meet PQR
21	Volume-I, Appendix-SSC	I)c) Taking over certificate shall be issued by RVPN, only after the system is commissioned at specified parameters. The TOC shall be issued within a period not exceeding 15 days from the date of commissioning. The defect liability period/warranty period shall be reckoned from the date of taking over.	Please consider the Defect Liability Period from the date of Commissioning.	Please Adhere to the bid document.
22	General		Pls clarify whether ROW is in customer's scope or Bidders scope to clear the ROW and crop/tree compensations	Refer Technical specification for Line.
23	Annexure-A (Pre-qualifying Requirement) Clause 2.3	The bidder shall be a manufacturer, who must have designed, manufactured, type tested, supplied and & commissioned the IEC-61850 based C&R SAS (sub-station Automation system) (consisting of bay control & protection units , application software) on at-lease one no of EHV sub-station (having total bays not less than 5 Nos)during last 5 (five) years in India and which must be in satisfactory operation for at-least 2 (two) years as on the original date of bid opening or be authorized by such a manufacturer to supply and provide after sales services with necessary back-up support from the manufacturer.	Partner1. Bidder shall have constructed & commissioned minimum 2 Nos. of substations anywhere in India with or without supply of power transformer/ reactor of 400 kV or higher voltage class S/S at two different locations within last five years on the date of technical bid opening OR **Bidder shall have substantially completed minimum 2 Nos. of substations anywhere in India with or without supply of power transformer/ reactor of 400 KV or higher voltage class S/S at two different locations and shall have constructed & commissioned minimum 2 Nos. of substations anywhere in India with or without supply of power transformer/ reactor of at least 220kV or higher voltage class S/S at two different locations within last five years on the date of technical bid opening within last five years on the date of technical bid opening.**	Please Adhere to the bid document.

24	PART-VI BPF, ANNEXURE & SCHEDULES	Annexure -I to Annexure-XVII Schedule-A to Scheudle - X3	Kindly provide the editable soft copy (Word format) of Schedules & Annexure.	Please Adhere to the bid document.
25	General	Soil Investigation Report	Kindly Provide the Soil Investigation Report.	Soil Investigation Report Attached
26	General	Availability of Land	We presumed that land for construction of substation & Transmission Line is already in the ownership of RRVPNL & encumbrance free land will be handed over to the successful bidder at the time of placing of order. Please confirm.	Please Adhere to the bid document.
27	General	Substation Structure	Kindly Provide the Drawings of Substation tower Structure and equipment Structure.	Ceiling weight mentioned in part-16 Vol-II.
28	Annexure-A (Pre-qualifying Requirement caluse 2.1	Lead Member Should have at least constructed and commissioned 1 No. of sub substation with or without supply of power transformer/ reactor anywhere in India of 400 KV and above voltage class on Turnkey** The Contract shall be in satisfactory operation for a period of one(1) year within last three Years.. Turnkey means design, supply, erection (including civil works), testing and commissioning.	We request you to allow any member satisfying the experience of substation or transmission line as per qualification requirement to become lead member in Joint venture. Please consider such works where conductor is supplied by Department but Tower Supply and rest of scope (tower foundation, erection, stringing, testing and commissioning) was in part of contractor's scope in a **Turnkey contract**	Please Adhere to the bid document Turnkey means design, supply, erection (including civil works), testing and commissioning. (with or without conductor) Supply means In case of sub-station with or without power transformer & reactor and in case of transmission line with or without conductor.
31	ITB Clause No. 34.2,Conflict of Interest. e)	**e)** the bidder participates in more than one bid in a bidding process. Participation by a bidder in more than one bid will result in the disqualification of all bids in which the bidder is involved. However, this does not limit the inclusion of the same sub-contractor, not otherwise participating as a bidder, in more than one Bid, or	We would like to bring to your kind attention that some items required for sub-station have limited manufacturers and majority of manufacturers are prospective bidders for the tender, thereby leaving very limited option for EPC bidders. In view of the above we request to modify the clause and allow the OEM's to give their offer to other EPC bidders and also participate directly to increase price competitiveness.	**Please read this clause ITB 34.2 (e) conflict of interest in conjunction with Cl 1.33 of GCC.**

32	13, BDS	Valid Bid Security Declaration (ANNEXURE-BSD) on Rajasthan Non-Judicial Stamp Paper worth Rs 50/-+ Surcharge on stamp paper as per Rule in lieu of Bid Security. If the firm fails to abide the terms & conditions laid in Annexure-BSD, the Amount of Bid Security shall be as under Rs. 3,60,94,600.00 (Rs. Three Crore Sixty Lacs Ninty Four Thousand Six Hundred	We understand that bidder can submit either bank guarantee for bid security or bid securing declaration.	Confirmed
33	Bid Security Declaration	Bid Security Declaration on non-judicial stamp paper of Rajasthan Govt. worth Rs.50/- +30% surcharge on stmp duty	In case bidder submits Bank Guarantee then the stamp paper value shall be INR 25000/- and in case bidder is submitting. We understand that Bid securing declaration needs to be issued on stamp paper of value INR 65 /- i.e., Please confirm	Confirmed Bid securing declaration needs to be issued on stamp paper of value INR 50 plus INR 15 (30% surcharge on stamp duty of INR 50).
34.	GCC, Clause No. 12.3, Price Adjustment on Unit Rate/ Prices:	12.3.1 The Unit Rate/ prices of main equipment viz. **For EHV Lines:** Tower Material, Earth Wire, GI Bolts & Nuts, GI Step Bolts, Electro-Galvanized Spring Washers shall be subject to price adjustment as per relevant price variation formula wherever applicable appended at Annexure-B.	We understand that the price variation is applicable for ACSR Moose & ACSR Zebra conductor. Please confirm our understanding	Confirmed. Refer Annexure-B of Vol-1
35	Annexure - B, C For Conductors	I) PRICE VARIATION FOR ACSR "MOOSE" CONDUCTOR		
36	Sr. No. 15.01, BoQ 4, Price Schedule	24 Fibre (DWSM) OPGW fibre optic cable - 95 Kms	We understand that the route length is 35 kms and OPGW requirement shall be 35Kms. Extra 60 kms OPGW is required for some other line from which bidder needs to remove Earthwire as mentioned in the Sr. No. 22, BoQ 5 of price schedule. Please confirm our understanding	confirmed
	Sr. No. 22, BoQ 5. Price Schedule	Destringing of Earth wire (7/3.66mm) : Dismantaling of earth bonds . Vibration dampers , declipping & fitting in rollers , detensioning and collecting the material & depositing the same in our store and stacking	We request you to provide the store location at which the material needs to be deposited after dismantling.	The RVPN stores nearby the location.
37			We request you to provide the line details from which the	LILO Point of Existing line at Pachpadra to 400 KV GSS Soorpura.

			Earthwire needs to be dismantled.	
38	Limitation of Liability	35.0 Liabilities The liabilities towards satisfactory performance shall lie on the bidder upto the end of the Guarantee / Warranty period, and till such time the contractual liabilities and responsibilities of the contractor, shall prevail. 36.0 Liabilities for accident and Damages Under the contract, the contractor shall be responsible for loss or damage to the plant until the successful completion of commissioning as defined elsewhere in the bid document.	We understand that the aggregate liability of the supplier / selected bidder to the Purchaser, whether under the Contract, in tort, or otherwise, shall not exceed the amount specified in the Contract	Please Adhere to the bid document
39	2. Technical Expereince, Annexure B	3) Out of the requirement given at 1 & 2 above , should have atleast constructed & commissioned One(1) No of sub-station any where in India of 400 KV & above voltage class on Turnkey** basis and atleast one order of minimum line length of 19 Km transmission line of 400 KV or 220 KV or above voltage on Turnkey** basis. .** Turnkey means design, supply, erection (including civil works), testing and commissioning	We understand that bidder/ each partner in case of joint venture shall meet the clause 3. Please confirm	Confirmed
40	2. Technical Expereince, Annexure B	.** Turnkey means design, supply, erection (including civil works), testing and commissioning	We understand that turnkey project means design of transmission line towers Please confirm	Refer S.No 83 of PBC-3
41	11.4, ITB	**(f)**The Bidder shall quote the charges for Services exclusive of applicable GST	We understand that the GST shall be reimbursed by RRVPN. Please confirm	Confirmed as per provisions of bid documents.
42	3. SCC	The Contracts to be entered into with the successful Bidder shall be as under : The contract shall be awarded in single indivisible contract having separate price schedules for supply and services.	We understand that the labour cess shall be applicable on complete contract. Please confirm	As per the guidelines issued by Govt.
43	Clause 1.1.2, Volume	(ii) Fabrication, Proto inspection, Galvanizing and inspection & testing,	We request you to confirm the requirement of Bird	To be decided mutually after

	II, Sub Section I, GTR	supply of 400 kV double circuit transmission line towers and their required body extensions as per employer design including bolts, nuts and washers, anti theft type bolts & nuts, hangers, D-shackles, U-Bolts, bird guards **and bird flappers (if required) of appropriate design if identified during the ESAI study** (if conducted) or mentioned in Approvals to be received from Forest Department for given line sections as a necessary accessories anti-climbing devices,	Flappers if any	award of contract, if needed.
44			We request you to confirm the requirement of ESAI study, if any	Not Required
45	Clause 3.6, Volume II, Sub Section I, Chapter 3	**3.6 RIGHT-OF-WAY, CUTTING OF TREES ETC.** **3.6.1** The Employer will arrange the right-of-way for the land required for tower foundation, tower erection and stringing. Any avoidable or deliberate damage done to standing crop or private property by the Contractor's labour shall be the Contractor's responsibility.	We understand that in case any compensation towards land for tower footing and corridor for tower and stringing shall be paid by RRVPN Please confirm our understanding	Please Adhere to the bid document
46			We understand in case line passes through forest then the approval shall be arranged by RRVPN.	Please Adhere to the bid document
47	General	Drawings	We noticed that the following drawings is not given in tender document . Kindly provide the same. 1. single line diagram 2. 220kV section drawing. 3. structure drawing of Lighting mast of 24 meter height	Attached. Ceiling weight at Pat-16 Vol-II
48	General	Fault current rating & fault duration	As per BPS , We considered 40KA for 1 sec are system fault for 400Kv & 220KV voltage. kindly confirm	Please Adhere to the bid document
49	Drawing 002/ Ac Power Distribution Single Line Diagram	AC power distribution SLD	We noticed that AC power distribution SLD is given but not properly visible .so kindly provide the properly visible ACDC SLD.	AC power distribution SLD attached for tender purpose only.
50	Vol_II_GSS/2.4 (B)/ Page No -7	Supply (excluding erection, testing & commissioning) of PLCC equipments/panels for 220kV remote (developer's) end, matching with the equipments to be supplied/installed at 400KV GSS Pachpadra at 6 Nos. 220KV feeders bays are in the scope of the bidder as per clause No.2.5 of Vol-II,Part-I of the specification.	As per refered clause we understand that only supply of PLCC for 220KV remote end are in our scope . erection testing & commissioning of PLCC panel for 220kV remote end are not in our scope. kindly re-confirm the same.	ETC of PLCC and FOTE equipment's of both the ends are on part of bidder.
51	Vol_II _GSS/2.5/ Page No -7	Interconnection (s) between 33 / 0.433 kV, 630 kVA, LT station transformer (to be supplied, installed and commissioned by the contractor to take	As per refered clause, we understand that the twin lengths of 630 Sq.mm FRLS armoured XLPE insulated power	SLD for LT distribution attached.

		construction power and alternate auxiliary supply from DISCOM) and the LT distribution boards (in control room) through twin lengths of 630 Sq.mm FRLS armoured XLPE insulated power cable.	cable in which single run of 630sqmm to be consider for construction power and alternate auxiliary supply from DISCOM & others run for LT distribution board (in control room) from DISCOM . Kindly re-confirm.	
52	Vol_II_GSS/ Part-2 (Vol-II) General Technical Requirements / 31.9. Technical Parameters Of Bushing / Hollow Column Insulators / Support Insulators/ Page No- 50	Creepage distance for bushing/Hollow column insulators/ support insulators is 25mm/Kv.	As per refered clause ,We assumed that the creepgae distance for string insulator is also 25mm/Kv . Kindly confirm.	For transformer & Reactor it is 31mm/kV
53	Vol_II_GSS/Substation Automation System Part-3 (Section-II) /2.2 System Architecture / Page No- 140	The SAS shall be based on a decentralized architecture and on a concept of bay-oriented distributed intelligence.	As per refered clause , the substation automation system shall be based on decentralized. Kindly confirm.	Please Adhere to the bid document
54	Vol_II _GSS/ Part-4 (Vol. II) Technical Specification For Circuit Breaker/1.2 Factor Of Safety/Page No- 205.	Factor of safety for the design of structural members of steel shall be 2.0 under normal conditions and 1.5 for severe conditions. For members under tension, factor of safety shall be on elastic limit and for members under compression it shall be on crippling load. Above factor of safety shall also be applicable for over turning.	We shall do the short circuit force calculations following the IEC - 865, Part-1, 1993 version. Please confirm	As per Latest IEC
55	Volume-II-Part-5/Part-13 Technical Specification For Led Lighting/3.0 Lighting Levels/Page No-433	Lighting in other areas such as control room, office rooms, PLCC room and battery room & other areas (i.e street light) shall be such that the average LUX level to be maintained shall be as under : S. No. | Area | LUX 1 | Control Room | 300 2 | Office/PLCC room | 150 3 | Battery & other rooms | 100 4 | Other areas | 30	As per refered clause, We noticed that minimum Lux for control room, office rooms, PLCC room and battery room & other areas Illumination is not mentioned only average LUX level is mentioned. Kindly provide the same.	Please Adhere to the bid document

<table>
<tr>
<td>56</td>
<td>Vol_II _Gss/Switchyard Erection Part- 17/1.01 Principal Parameters/ Page No- 503</td>
<td>The bus bar material used in the 400/220 kV substation shall be suitable for following bus bar parameters.
<table>
<tr><th>S.No.</th><th>Description</th><th>Parameters</th></tr>
<tr><td>a.</td><td>400 kV Main Bus I & II</td><td>-ACSR quadruple Moose 450mm sub conductor spacing (square formation)</td></tr>
<tr><td>b.</td><td>400 kV equipment interconnections</td><td>114.2mm Al. Tube</td></tr>
<tr><td>c.</td><td>400 kV overhead bus & droppers with Y Jumpers</td><td>-ACSR Twin Moose 450mm sub conductor spacing.</td></tr>
<tr><td>d.</td><td>220kV Main Bus I & II and Auxiliary Bus</td><td>Twin Tarantulla 300mm sub-conductor spacing.</td></tr>
<tr><td>e.</td><td>220 kV equipment interconnection in bus coupler bay, transfer Bus Coupler bay, sectionlizer bay & transformer bay.</td><td>114.2mm Al. Tube</td></tr>
<tr><td>g.</td><td>220 kV feeder bay</td><td>Single Tarantulla</td></tr>
<tr><td>h.</td><td>33 tertiary connection</td><td>73.03mm Al. tube</td></tr>
</table>
</td>
<td>We understand that the type of conductor / Aluminium tube for 400kV/220kV side has to considered as per referred clause. Kindly confirm.</td>
<td>Please Adhere to the bid document</td>
</tr>
<tr>
<td>57</td>
<td>1.Schedule-BOQ B1(Supply) Sr.No- 273

2. Schedule-BOQ B1(Supply) Sr.No- 305</td>
<td>1. 48 V , 600AH VRLA battery set along with accessories, stand and spare.

2. 50V , 200A, DC distribution board (for 2 DC sources in two parts with bus coupler)</td>
<td>Please note that as per schdule B1 (BOQ) sr no-305, 50V DCDB is mentioned & where as in B1 (BOQ) sr no-273 it is specified as 48V battery. kindly lets us know which voltage to be consider for battery / DCDB.</td>
<td>Please Adhere to the bid document</td>
</tr>
</table>

58	1.Schedule-BOQ B1(Supply) Sr.No-164&165 2. Drawing Pdf / Tentative Elp Of 400/220 Pachpadra	220kV relay panel for Bus coupler- 2nos & 220kV relay panel for transfer Bus coupler - 1 no	We noticed that In BPS 2 nos of bus coupler , 1 no of Transfer bus coupler is mentioned & as per refered drawing We understand that two number of bus coupler& two number of Transfer bus coupler is required either side of bus sectionlizer. Kindly confirm quantity of Bus coupler & Transfer bus coupler.	SLD Attached.
59	Volume-II-Part-5/Part-13 Technical Specification For Led Lighting/2. (B). Lighting Mast/Page No-433	Lighting System: The lighting mast required for switchyard lighting shall be hot dip galvanised steel tubular type having height of 24 mtrs and shall conform to the drawings approved by the RVPN.	As per refered clause , We understand that lighting mast is used only for mounting of lighting fixture other than towers. Kindly confirm/ clarify the same.	Confirmed
60	Volume-II-Part-5/2.0 Scope/(A) 400Kv Gss Pachpadra/ Page No-5	2 Nos. 400 kV bays for termination of 400 kV D/C (Twin Moose) for LILO of Rajwest Kankani transmission lines.	As per this clause we understand that 400kV double ckt line of Rajwest-kankani transmission lines are formed LILO at 400kV/220KV GSS PACHPADRA. In this regards , please provide the 400kV PLCC panel details at Rajwest & Kankani substation which are required to match at 400kV/220KV GSS PACHPADRA.	ABB Make(ETL41 type) at Rajwest & kankani End).
61	General		Kindly furnish the Tender specific Drawing for 220 kv Kiosk Building & MS Tank Foundation.	Attached.
62	General		Kindly confirm if Brick or RCC Drain is to be considered for estimation.	RCC Drain.
63	General		Open type foundation is considered for all foundation. Kindly Confirm.	As per tower Design.

64	General		610gm/m2 Galvanizing is considered for lattice structure, Pipe structure & Foundation bolt. Kindly confirm.	Please Adhere to the bid document
65	Annexure - B, C For Conductors	I) PRICE VARIATION FOR ACSR "MOOSE" CONDUCTOR 1 The prices are variable based on the basic cost of E.C. grade Aluminium wire rods and High Tensile Galvanised Steel wire rods of size 3.53 mm **as ruling on first working day of the month, one month prior to the due date of opening of techno-commercial parts of bids** and as defined in the succeeding paras.	We request you to keep the same base date for both the type of conductors i.e, same base date for ACSR Moose & ACSR Zebra conductor	The Base date for PV will be **on first working day of the month, one month prior to the due date of opening of techno-commercial parts of bids for ACSR Moose & Zebra Conductor.**
66	Sr. No. 15.01, BoQ 4, Price Schedule	24 Fibre (DWSM) OPGW fibre optic cable - 95 Kms	We understand that RRVP will be providing shut down for destringing of Earth wire and also for stringing of OPGW on the already constructed transmission line. Please confirm.	Confirmed
67	Sr. No. 22, BoQ 5, Price Schedule	Destringing of Earth wire (7/3.66mm) : Dismantaling of earth bonds , Vibration dampers , declipping & fitting in rollers , detensioning and collecting the material & depositing the same in our store and stacking		Please Adhere to the bid document
68	Vol_II_PART 1/General Specification/2.15 B)/ Page No -6	Immediately after the handing over of the substation, the successful bidder/ contractor shall place his at least 2(Two) Nos. expert Engineers at substation for 12 months who can handle the initial operational problems and shall run the substation alongwith the RVPN Engineers. They shall also simultaneously train RVPN Engineers on total aspect of the system installed at substation.	We understand that the scope for handholding is limited to 2 nos of engineers for 12 months. No other equipment/Material cost is to be considered by bidder. Please confirm.	Refer cl 2.14 (B) Part-1 of Vol-II of bid documents.
69	Vol_II_PART 14/FIRE FIGHTING SYSTEM/2.05.00/ Page No -4	Water for hydrant & HVW system shall be supplied separately by one no electrical motor driven pump for each system with another pump, driven by diesel engine which shall be used as standby for both the systems.	We understand that the requirement is 1 No. Electric Driven for yard piping, 1 No. Electric driven pump for HVWs and common DG driven pump for both as per TS. Common piping as per TAC/NFPA for yard piping and HVWS piping are acceptable. Pls confirm.	AS per Bid doc part-14 Vol-II as per clause No 2 of specification.
70	Vol_II_PART 14/FIRE FIGHTING SYSTEM/2.03.00/ Page No -3	Fire Detection System	TS clause defines for the conventional type fire alarm system whereas BPS ask for Addressable type fire detection system. Pls confirm the requirement	Addressable type fire detection system is required.

71	Vol_II_PART 14/FIRE FIGHTING SYSTEM/2.03.00/ APPENDIX 1	LHS Cable for cable trenches	We are not considering LHS cable for cable trenches as not defined in TS but defined in performance guarantee test procedure only. Pls confirm our uderstanding is correct.	Please Adhere to the bid document
72	1 No. 400 kV, 125 MVAR SHUNT REACTOR (BUS TYPE) UNDER BN-9019002102 Clause No:1.1 BOQ	This specification covers design, engineering, manufacture, testing at manufacturer's works, delivery of 3 phase, 1 x125 MVAR, 400KV Shunt Reactors (Bus Type), Neutral Grounding Reactors (Line Type) and other items including all material, accessories, spares at site including proper transportation, handling, proper storage at site of the equipment specified.	From the clause is clear that there is requirement of 1 no Bus reactor. Please note that for grounding of bus reactor the NGR is not required. Therefore, we understand that NGR is not in the scope of supply and any data related to NGR anywhere in the specification shall not applicable for the 125 MVAr, 420 kV shunt reactor supplier. Further, From BOQ, it is evident that NGR is not required. **Kindly confirm**	Confirmed.
73	1 No. 400 kV, 125 MVAR SHUNT REACTOR (BUS TYPE) UNDER BN-9019002102 Clause No:3.1.7.5 TECHNICAL SPECIFICATION 400/220/33 KV Auto Power Transformers BID ENQUIRY NO. 9019002102 Clause no. 3.1.5.4.6	An air cell failure relay/ atmoseal rupture relay of same make as that of the aircell provided with main tank conservator tank at suitable position in main tank conservator must be provided.	"Air cell failure relay" and "Aircell" are two different brought items for different functions, it may be noted that as per our knowledge, No vendor with in INDIA manufactures both the items under the same roof. Therefore Air cell failure relay and Aircell shall be supplied of different make (As per RRVPNL approved vendor list). **Kindly accept and confirm**	Please Adhere to the bid document
74	1 No. 400 kV, 125 MVAR SHUNT REACTOR (BUS TYPE) UNDER BN-9019002102 Clause No:3.1.8.e TECHNICAL SPECIFICATION	Sufficient No of self-dehydrating maintenance free breather of appropriate capacity shall be mounted for main tank conservator. The supplier shall furnish calculation in support of offered breather to provide its sufficiently/ capability.	Since the requirement is of maintenance free breather, therefore there is not much relevance of capacity calculation, as it is regenerative type and it works uninterrupted through its lifetime irrespective of its size, therefore we understand that capacity calculation shall not be applicable, however models shall be bought as per the available sizes with respect to size of the transformer/reactor from the approved vendors of RRVPNL.	As per CBIP manual & Oil Capacity.

	400/220/33 KV Auto Power Transformers BID ENQUIRY NO. 9019002102 Clause no. 3.1.5.5.e		**Kindly confirm.**	
75	1 No. 400 kV, 125 MVAR SHUNT REACTOR (BUS TYPE) UNDER BN-9019002102 Clause No:3.1.10 TECHNICAL SPECIFICATION 400/220/33 KV Auto Power Transformers BID ENQUIRY NO. 9019002102 Clause no. 3.1.7.1	The cable entry in the Buchholz relays and PRD shall be from bottom only.	PRD is located over the tank cover hence connection through bottom only is not possible and is generally it is from the side of the PRV. Further the cable entry of buchholz relay varies from manufacturer to manufacturer. We will provide PRD and buchholz relay of RRVPNL approved make and cable entry in these devices will depend on the vendor to whom order shall be placed. **Kindly Accept and confirm..**	Please Adhere to the bid document
76	1 No. 400 kV, 125 MVAR SHUNT REACTOR (BUS TYPE) UNDER BN-9019002102 Clause No:3.2.1.10 TECHNICAL SPECIFICATION 400/220/33 KV Auto Power Transformers BID ENQUIRY NO. 9019002102 Clause no. 3.2.11	The supplier shall provide along with the bid the design details of core assembly showing the construction details, core diameter, net/gross sectional area of the core assembly etc. The information must also be given in respect of volts per turn at principal tap for normal voltage. The loss curves for type/grade of steel laminations being used for the core shall also be provided along with the tender.	It is not feasible to submit all the details mentioned in the clause at tender stage with data of preliminary design, as at this stage final core assembly drawing/design is not finalized rather it is finalized during detail engg. Therefore, during detail engg Core Internal detail drawing and loss curves for type/grade of steel laminations used will be provided. Further it may also be noted that tapping is not applicable in the case of reactor. **Kindly Accept and confirm..**	Please Adhere to the bid document
77	1 No. 400 kV, 125 MVAR SHUNT REACTOR (BUS TYPE) UNDER BN-9019002102 Clause No:3.7.2	The Contractor shall provide Aluminium connectors suitable for moose conductor between neutral of the shunt reactor and neutral grounding reactor.	As NGR is not applicable (kindly refer comment sl. no-1), therefore Aluminium connectors suitable for moose conductors shall not be applicable rather palm type connectors shall be available to connect the copper flats which shall be terminated upto bottom of the reactor, it will be used to directly ground Bus Reactor.	Refer Pre-bid clarification S.No 72.

78	1 No. 400 kV, 125 MVAR SHUNT REACTOR (BUS TYPE) UNDER BN-9019002102 Clause No:3.8.1	The radiator bank of the shunt reactor shall be separately mounted.	With reference to the requirement of separately mounted radiators in the reactor, it may be noted that BHEL is regularly supplying tank-mounted radiator for the shunt reactors. This is in line with the prevalent design practice and required by major players in transmission sector like PGCIL and other utilities for their 420kV/765kV Shunt reactors. Tank mounted radiator has following advantage over the separately mounted radiator a) Tank mounted radiator does not involve any civil work, as there is no foundation required for the radiator bank. b) There is no involvement of the pipe work, header etc, as it is directly fitted to the tank. c) It also permits the removal of radiator without drainage of oil from the tank in line with the specification requirement. In view of the prevalent design practice and above advantages, BHEL will supply tank-mounted radiator meeting all other technical requirement of the technical specification. **Kindly confirm**	Please Adhere to the bid document
79	1 No. 400 kV, 125 MVAR SHUNT REACTOR (BUS TYPE) UNDER BN-9019002102 Clause No:9	Adequate numbers of optical temperature sensors at least 16 nos. with the unit which is to be type tested.....	Reactor has only 3 windings. If we consider 2 no temperature sensor/winding, then total sensor required will be 6. 1 no sensor each for yoke (core temperature) and top oil will be sufficient to indicate the temperature of transformer. Therefore, total 8 no temperature sensor along with 8-channel temperature measuring system controller will be sufficient to indicate the temperature rise. Therefore, we request RRVPNL to review the requirement and recommend using 8 channel Optical temperature measuring system. **Kindly accept and confirm.**	Please Adhere to the bid document
80	TECHNICAL SPECIFICATION 400/220/33 KV Auto Power Transformers	Technical Parameters 6.9 6.9 Impedance ii) HV/LV impedance: 45%	With reference to the impedance requirement of HV/LV & iv/lv it may be noted that No tolerance has been provided, As per the RRVPNL in old projects, 500 MVA, 400 kV ICT supplied by BHEL with tolerance of ± 15%, therefore we	Please Adhere to the bid document

	BID ENQUIRY NO. 9019002102 Clause no. 6.9	iii) IV/LV impedance: 30%	understand that 15 % for the above impedances. **Kindly confirm.**	
81	1 No. 400 kV, 125 MVAR SHUNT REACTOR (BUS TYPE) UNDER BN-9019002102 Clause No: 11 TECHNICAL SPECIFICATION 400/220/33 KV Auto Power Transformers BID ENQUIRY NO. 9019002102 Clause No: 11	PASSIVE FIRE PROTECTION FOR TRANSFORMER:	We have tried to find out the manufacturer details of passive fire protection system over internet but unable to find it out, it seems that this item is a technologically monopolistic item and not available in open market. Therefore, we request RRVPNL to exclude this item from the scope of 500MVA, 400 kV transformer and 125 MVAr, 420 kV shunt reactor supplier. If the RRVPNL still insist the same for supply it is requested to RRVPNL to provide us the name of more than one domestic manufacturer to avoid monopoly of one vendor. **Kindly accept the scope exclusion of above item and confirm.**	Please Adhere to the bid document
82	Drawings	Single Line Diagram	i) Please provide Single Line Diagram of subject tender. ii) We understand that main busbar current rating of subject project is 2000A - please confirm. iii) We understand that short circuit level of subject sub-station is 40kA for 1 sec for both 400kV & 220kV S/S - please confirm. iv) Please provide section drawing of 220kV switchyard. v) Please provide electrical layout superimposed on contour layout for subject project. vi) Please provide structural layout of subject project.	i) Attached ii) 2000A iii) 40kA for 1 sec iv) Attached v) Attached. vi) ELP Enclosed
83	VOL_II_GSS 'Part – 1 General Specification Part – 3 (Sec-II) Substation Automation Sytem	The bidder is required to indicate training charges lump sum in the price schedule to be carried out at Manufacturer's Works in India / abroad for the training mentioned above which shall be considered for price bid evaluation. These charges should include: To and Fro Air Ticket, Training, accommodation (boarding & lodging), food, local transport etc For all training courses, the travel (e.g. airfare) and per-diem expenses will be borne by the participants.	i) Request M/s. RRVPNL to take care of "To and Fro Air Ticket, Training, accommodation (boarding & lodging), food, local transport" of RRVPNL personnel for training purpose - please confirm. ii) Discrepancy observed between referred clauses reagrding travel (airfare) - please clarify.	To and Fro Air Ticket, Training, accommodation (boarding & lodging), food, local transport etc will be in the scope of Bidder.

84	BOQ_399710	Current Transformer (Live Tank Type only)	Request to please allow Dead Tank type BHEL make 400/220kV Current Transformer for subject project.	Please Adhere to the bid document
85	'Part – 1 General Specification	12.2 LIST OF APPROVED VENDORS:	Please provide List of approved vendors for 400kV EHV equipment CB,Isolator,CT,CVT,LA & BPI also as vendor list mentions EHV equipment upto 220kV only.	Will be as per clause No 12.1 Part-1, Vol-II
86	VOL_III 11.2.1	9. e) All cable vaults shall be located above ground levels i.e. cable vaults shall not be provided as basements in the buildings.	We understand that any cable vault in ground floor of substation control building is not required to be provided in subject sub-station - please confirm.	Please Adhere to the bid document
87	VOL_III 2.0	Geotechnical Investigation Report	Please provide preliminary Geotechnical Investigation Report of subject project for estimation purpose.	Soil Investigation report Enclosed.
88	Drawings	AC & DC Power Distribution Single Line Diagram	Please provide legible version of AC & DC system SLD as same are not readable.	Attached
89	BOQ_399710	FOTE TERMINAL EQUIPMENTS	We understand that FOTE equipments for remote end , if any , are only supply items and ETC of same are not in scope of works - please confirm.	ETC of FOTE of are in scope of bidder. Existing FOTE at 400 KV SS Soorpura ABB(FOX615). Interconnection & termination is in scope of bidder.
90	Part – 17 Switchyard Erection	Long Rod Insulators	We understand that subject Long Rod Insulators are composite type only and not porcelain type - please confirm.	Long Rod Insulators porcelain type only .
91	2. TECHNICAL EXPERIENCE	2. The bidder must have satisfactorily completed/ executed contract with or without supply of conductor for following voltage rating and route length of transmission line anywhere in India during last seven(7 Years) as on the date of technical bid opening and must be in satisfactory operation for a period of one (1) year. B) One order of minimum line length 35 Km of 400KV or above voltage class and one order of minimum line length of 41 Km of 220 KV or above voltage class (Total two orders).	Request to amend subject QR for TL party suitably since particular Transmission Line EPC contractor facing below mentioned shortfall in satisfying QR requirements as follows :- i) Available Experience of subject TL EPC contractor for 400kV - One order of 400kV line of route length 45.46 Km during last 7 years with 1 year of satisfactory operation - therefore as against requirement of 35 Km of 400 kV line,	Please Adhere to the bid document

		3) Out of the requirement given at 1 & 2 above , should have atleast constructed & commissioned .... and atleast one order of minimum line length of 19 Km transmission line of 400 KV or 220 KV or above voltage on Turnkey** basis. .** Turnkey means design, supply, erection (including civil works), testing and commissioning.	the available experience of this particular TL EPC contractor is of 45 km. ii) Available Experience of subject TL EPC contractor for 220kV - One order of 220kV of route length 37 Km is available during last 7 years with 1 year of satisfactory operation (This order also had additional 1 Km of 400 kV line work (total 38 Km) as per subject TL EPC contractor) - However, as against requirement of 41 Km of 220 kV line, the available experience of this particular TL EPC contractor is of 37 Km.	
92	BOQ_399710	Design, engineering and construction of R.C.C. cable trenches for required depths precast R.C.C. covers, water stops, brick works wherever required including the supply of labour, material, cement, reinforcement steel, steel angles, flats and providing P.C.C.(1:4:8) below cable trenches as per technical specification and approved drawings Section C - 1 Lot Section D - 1 Lot	i) Please provide trench layout plan drawing of subject Pachpadra S/S. ii) Please also provide typical trench layout plan drawing of RRVPNL.	Indicated in ELP
93	Civil Works	4.0 ANTIWEED TREATMENT & STONE SPREADING	We understand that any brick soling is not applicable for subject substation present / future scope areas - please confirm.	Confirmed.
94	Civil Works	Providing and supplying all labour material including borrowed / removal of earth for maintaining the FGL, equipments etc., soil sterilization / antiweed treatment including excavation, mixing / injecting chemicals to achieve the guaranteed effectiveness of treatment at least up to one year, rolling dressing, compacting the excavated earth within substation areas as per technical specification 100mm thick PCC (1:4:8) with 20 / 40mm graded aggregate as per technical specification.	"within substation areas" - we understand that "within substation areas" implies i) 400kV substation area bound by fence on west side , boundary wall on east & north side and 220kV S/S on south side as indicated in Drawing "Tentative ELP of 400/220kV GSS Pachpadra (Barmer)" - please confirm. ii) 220kV Substation area bound by 400kV on north side, Control Building on west side , boundary wall on east side and outer service road of 220kV S/S beyond 220kV LA's in south - please confirm.	Please Adhere to the bid document
95	Civil Works	Providing and supplying all labour. material including borrowed / removal of earth for maintaining the FGL, equipments etc., soil sterilization / antiweed treatment including excavation, mixing / injecting chemicals to achieve the guaranteed effectiveness of treatment at least up to one years, rolling dressing, compacting the excavated earth beyond the area of switchyard i.e. considered for future scope / work, laying of brick edging	"beyond the area of switchyard i.e. considered for future scope / work" - we understand that "beyond the area of switchyard i.e. considered for future scope / work" implies i) future area between west boundary wall ie HIJKLMNOPQRS & 400kV substation west side fence as indicated in Drawing "Tentative ELP of 400/220kV GSS	Please Adhere to the bid document

		etc. as per technical specification.	Pachpadra (Barmer)" - please confirm. ii) future area between outer service road of 220kV S/S beyond 220kV LA's in south and boundary wall ie area UVWXA - please confirm.	
96	Civil Works	**a)** After laying cement concrete (1:4:8) / brick edging in required slope / grade, 100mm thick layer of granite/basalt/trap jelly of 20mm size shall be spread over the entire switchyard area as per drawing and directions of engineer incharge of the work. The 20 mm nominal size shall pass 100% through IS. Sieve designation 40 mm and nothing through 16.00 mm IS Sieve. The whole switchyard area (excluding buildings pathway road, drainages, cable trenches, equipments/ structures plinths etc.) shall be covered with jelly spreading. The jelly used shall be free from dirt, organic materials and flakes.	"the entire switchyard area" - we understand that "the entire switchyard area" implies area occupied by only present scope bays of 400kV and 220kV switchyard and not future 400/220kV bays or entire land area demarcated by points ABCDEFGHIJKLMNOPQRSTUVWX - please confirm.	Please Adhere to the bid document
97		Chain link fencing of switchyard	Fencing is indicated towards western side of 400/220kV sub-station in drawing "Tentative ELP of 400/220kV GSS Pachpadra (Barmer)" however any chain link fencing line item is not available in Civil Price Schedule BOQ3 , therefore we understand any chain link fencing item is not required to be provided in Pachpadra 400/220kV sub-station - please confirm.	Please Adhere to the bid document
98	Drawings	Tentative ELP of 400/220kV GSS Pachpadra (Barmer)	Please provide autocad version of subject layout for measurement purpose in civil estimation.	PDF already uploaded.
99	VOL_II_Transmission Line	Tree cutting shall be the responsibility of the contractor in consultation with the employer during stringing.	Request to remove tree cutting from scope of bidder of subject project and allocate same to M/s. RRVPNL scope - please confirm.	Please Adhere to the bid document
100	VOL_II_Transmission Line	Detailed Survey. including route alignment, profiling, tower optimization & spotting ,soil resistivity measurement & geotechnical investigation and check survey.	Please provide preliminary data for 04 nos. Transmission lines in scope of subject tender :- i) Preliminary Route Survey also indicating forest area, river crossings, powerline crossings, railway crossings if any. ii) Preliminary route profile & Contour map of route also indicating terrain details of route. iii) Preliminary soil investigation report of Transmission Line routes.	Refer clause No 6.2 of ITB (Vol-1) of bid document.

101	VOL_II_Transmission Line	Access to the Line and Right of Way Right of way and way leave clearance shall be arranged by the employer in accordance with work schedules.	i) We understand that Right of way and way leave clearance shall be arranged by the employer as per Clause-1.4, and Clearing of obstructions falling in the right-of-way as per IS: 5613 and lopping or trimming of the portion of the trees falling within the minimum electrical clearance zone shall also be in M/s. RRVPNL scope - please confirm. ii) Please elaborate "Clearing of obstructions falling in the right-of-way as per IS: 5613" as same is not clear - does this imply trimming of trees only ?	Please Adhere to the bid document
102	VOL_II_Transmission Line	Clearing of obstructions falling in the right-of-way as per IS: 5613 and lopping or trimming of the portion of the trees falling within the minimum electrical clearance zone shall be the responsibility of the contractor. However, compensation shall be payable as per Clause No.1.10.4.		Please Adhere to the bid document
103	BOQ_399710	Tower/Equipment structure drawings	Please provide Drawings for Tower/Equipment structure in scope of subject sub-station.	Ceiling weight mentioned in part-16 Vol-II
104	VOL_II_GSS 'Part – 17 Switchyard Erection	The soil resistivity measurement shall also be done by the Contractor.	Please provide preliminary Soil Resisitivity Report for purpose of earthing calculation.	Soil Resistivity Report Attached
105	VOL_II_GSS 'Part – 17 Switchyard Erection	Marshalling Kiosk shall be furnished for each bay.	We propose 02 nos. MK for each 400kV diameter ie no MK for tie bay and 01 nos. MK for each 220kV bay in line with PGCIL practice - please confirm.	Please Adhere to the bid document
106	VOL_II_GSS 'Part – 17 Switchyard Erection	Earthing	We understand that Earthmat to be provided only in substation bays in present scope and not in future areas - please confirm.	Please Adhere to the bid document
107	'Part – 18 LT Transformer	The following recoveries shall be made for the excess losses upto the prescribed limits as above. Recovery for excess of no load losses : @ Rs3,32,000 per KW Recovery for excess of load losses : @ Rs 1,36,000 per KW.	Please confirm if the recoveries mentioned in subject clause are applicable for losses higher than losses mentioned in Clause - 4.2 Transformer Losses - we understand that there will be no rejection in that case - please confirm.	Please Adhere to the bid document
108	'Part-12 FRLS Power & Control Cables	HT CABLE FOR AUXILIARY POWER SUPPLY	Please provide TS of 52kV cable for subject tender.	AS per IS.

<table>
<tr><td>109</td><td>Part-1, Vol-II / Clause 2.1.1 (c)</td><td>Complete Control and Protection Panels</td><td>BCU based control of 400/220KV is envisaged for the project, hence we understand that hardwired backup control panel are not required. Kindly confirm.</td><td>Control & Relay Panel.</td></tr>
<tr><td>110</td><td>Part-1, Vol-II / Clause 2.1.1 (c)</td><td>Vendors for SAS & Protection relay</td><td>The Numerical relays and SAS shall be from GE(previously Alstom)/Schneider/Siemens/SEL/ABB. Kindly confirm.</td><td>As per List of approved venders List at 12.2 of part-1, Vol-II</td></tr>
<tr><td>111</td><td>Section-I, Part-3, Vol-II / Clause 1.2</td><td>Scope</td><td>We understand that new 400/220 KV substation is envisaged as per specification. Kindly clarify the clause mentioning matching of new panels with existing ones.</td><td>New Substation.</td></tr>
<tr><td>112</td><td>Section-I, Part-3, Vol-II / Clause 3.0</td><td>Principal parameters</td><td>Kindly provide the Single Line Diagram for better clarity of scope.</td><td>Attached</td></tr>
<tr><td>113</td><td>Section-I, Part-3, Vol-II / Clause 4.1.2</td><td>General Technical Requirements</td><td>Kindly provide the details of existing panels for remote end panels to be supplied. Also provide the SLD, OGA, Schematic drawings (including Busbar protection) of existing switchyards. We understand that Busbar protection is already available at remote end. Thus only Busbar trip relays shall be provided.

Kindly confirm the quantity of interconnecting lines at existing 400KV & 220 KV switchyard for which remote end panels are to be offered.</td><td>Please Adhere to the bid document</td></tr>
<tr><td>114</td><td>Section-I, Part-3, Vol-II / Clause 6.2</td><td>Energy Meters</td><td>Separate Dummy energy metering panels shall be offered for 400KV & 220KV switchyard. Kindly confirm the quantity of meters for which cut-out and necessary wiring is to be provided.</td><td>Energy meters in scope of bidder as per the bid documents.</td></tr>
<tr><td>115</td><td>Section-I, Part-3, Vol-II / Clause 11 (a)</td><td>400/220KV Transformer Protection panel</td><td>We understand that two set of Differential relay (Main-1 & Main-2) are to be offered. The grouping of protection can be as under, kindly confirm. Mandatory spares shall also be offered in line with same.

<table><tr><td>Sl. No./Description of relay</td><td>Remark</td></tr><tr><td>4. Over fluxing protection</td><td>Can be provided as built in function of relay against Sl. No. 1</td></tr><tr><td>5. Restricted Earth Fault protection</td><td>Can be provided as built in function of relay against Sl. No. 2</td></tr></table></td><td>Please Adhere to the bid document</td></tr>
</table>

			7. Transformer overload protection: Can be provided as built in function of relay against Sl. No. 1 or 2.	
116	Section-I, Part-3, Vol-II / Clause 11 (b)	400/220KV Line Protection panel	The grouping of protection can be as under, **kindly confirm.** Mandatory spares shall also be offered in line with same. Sl. No./Description of relay — Remark 3. Overvoltage Protection — Can be provided as built in function of relay against Sl. No. 1 & 2. 8. Under voltage Protection — Can be provided as built in function of relay against Sl. No. 1 & 2.	Please Adhere to the bid document
117	Section-I, Part-3, Vol-II / Clause 11 (c) & (d)	Bus bar Protection for 400KV & 220 KV	We understand that single decentralized bus bar protection for both 400KV & 220 KV is to be offered. Kindly provide the SLD as PUs are envisaged for future bays also. Also note that for remote end panels, only bus bar trip relays shall be provided. **Kindly confirm.**	SLD Enclosed.
118	Section-I, Part-3, Vol-II / Clause 11 (c) & (d)	Technical specification for Tariff Trivector Meter for EHV/HV system of RRVPN	**Kindly confirm** the requirement of energy meter as against Clause 6.2, it is mentioned that only cut-out and wiring is to be provided for RRVPN supplied energy meters.	Energy Meter are required as per Specification
119	BoQ1	Mandatory spares for CR Panels	Mandatory spares list for Substation Automation system is not available. **Kindly provide the same.**	Please Adhere to the bid document
120	Vol - 1 Annexure A, Cl No. 2 Technical experience	Lead partner must have experience on substation	We request RRVPNL, not to restrict Substation bidder to be a lead bidder. Instead of this, please allow any of JV/consortium member shall be a lead bidder please accept	Please Adhere to the bid document
121	Volume 1, Instructions to Bidders, Part I, Attachment 3: Bidder's Eligibility and	i.v. The leader shall be authorized to incur liabilities and receive instructions for and on behalf of any and all partners of the joint venture, and the entire execution of the contract, including payment, shall be done exclusively with the leader, provided otherwise requested by the joint	We request to allow the following a) In case of Joint Venture / Consortium, respective partner will be allowed to raise separate invoice for their scope of work and receive payments for their respective	Please Adhere to the bid document

	Qualifications	venture and agreed between the Nigam and the leader.	scope of work from RRVPNL in separate Bank Accounts b) In case of Joint Venture / Consortium each partner can submit separate Performance Bank Guarantees / Advance Bank Guarantees for their respective scope from their bankers.	
122	General Terms and Conditions of the Contract (GCC) Part III, Volume 1	**GCC 41 Force Majeure** Additional Clause on Export Reservation Clause in SCC	**The Contractor requests for the addition of the following clause in Force Majeure:** "Contractor shall not be obligated to fulfill this agreement if such fulfillment is prevented by any impediments arising out of national or international foreign trade or customs requirements or any embargoes or other sanctions".	Please Adhere to the bid document
123	General Terms and Conditions of the Contract (GCC) Part III, Volume 1	**GCC 11 Taxes and Duties** Additional Clause on Export Reservation Clause in SCC	a) The Bidder requests to clarify whether Labour Cess @1% shall be deducted from the contractors work bills. b) The Bidder requests to clarify that the Labour Cess of 1% shall be applicable on **Services Contract/Portion for Civil Works and Installation Works only.** The BOCW shall not be applicable for Supply Portion. Request for your clarification/confirmation for the above	As per govt. Rules.
124	General Terms and Conditions of the Contract (GCC) Part III, Volume 1	**GCC 35 Liabilities :** The liabilities towards satisfactory performance shall lie on the bidder upto the end of the Guarantee/Warranty period, and till such time the contractual liabilities and responsibilities of the contractor shall prevail	The Bidder requests for the modification of the clause. The Bidder requests for the following : a) The Contractor's aggregate liability under the contract shall be limited to 100% of the contract value. b) Neither Party shall be liable to the other Party for loss of profit, loss of any contract, loss of business, business interruption, loss of revenue, loss of goodwill or loss of anticipated savings, loss of production, loss of use, cost of capital, loss of interest, loss of power, cost of purchased or replacement power, loss of information and data, damages based on the customer's third party contracts or for any indirect or consequential loss or damage which may be suffered by the other Party in connection with the Contract.	Please Adhere to the bid document

125	Special Conditions of the Contract (SCC) Part IV, Volume 1	**GCC 41 Force Majeure** Additional Clause on Covid	The Bidder requests for the addition of the following clause for Covid : The Parties acknowledge the worldwide outbreak of the COVID-19, which is likely to affect the execution of the Agreement. The Parties agree, that Supplier shall be entitled to reasonable adjustments of the Delivery Schedule/ milestones/ delivery dates as well as to reimbursement of costs to the extent the delay and the costs are caused directly or indirectly by the outbreak of COVID-19.	Please Adhere to the bid document
126	General Terms and Conditions of the Contract (GCC) Part III, Volume 1	**GCC 15 Confidentiality of Information** - The contractor shall not, without the Owner's prior written consent, disclose the contract or any provision thereof or any specification, plan, drawing, pattern, sample or information furnished by or on behalf of the owner in connection therewith, to any person other than a person employed by the contractor in the performance of the contract. Disclosure to any such employed person shall be made in confidence and shall extend only so far as may be necessary for purposes of such performance.	The Bidder requests that the Documents, specifications, plan, drawing, pattern, sample or information furnished by the Contractor to the Employer shall be kept confidential.	Please Adhere to the bid document
127	General Terms and Conditions of the Contract (GCC) Part III, Volume 1	**GCC 37.0 Delay by Owner or his Authorized Agents** - .....Regarding reasonableness or otherwise of the extension of time, the decision of the Engineer shall be final.	The Bidder requests that Extension of time shall be granted to the Contractor for delays in the project directly attributable to the Customer.	Please Adhere to the bid document
128	General Terms and Conditions of the Contract (GCC) Part III, Volume 1	**GCC 26.0 - Taking Over** - Upon successful completion of all the tests to be performed at site on all the equipments supplied and erected by the contractor, the engineer shall issue to the contractor a taking Over Certificate as a proof of the final acceptance of all the equipments and facilities executed / commissioned as per complete scope of work. Such certificate shall not unreasonably be withheld nor will the engineer delay the issuance thereof on account of minor omissions or defects which do not affect the commercial operation and/or cause any serious risk to the equipment. Such certificate shall not relieve the contractor of any of his obligations which otherwise survive, by the terms and conditions of the contract after issue of such certificate.	The Bidder requests for the addition of the clause : Acceptance/completion is deemed to have taken place, - if the customer puts work into commercial operation (but not for commissioning or test); or - when, for reasons not attributable to Contractor, acceptance is delayed for more than three months after its scheduled date	Please Adhere to the bid document
129	General Terms and Conditions of the Contract (GCC) Part III, Volume 1	**GCC 9.7 - Terms of Payment :** GCC 9.7.3 - ..... (A) Price Component for Equipment and its Erection, Testing and Commissioning Interest Bearing Advance (Optional*):Ten percent (10%) of the total Ex-	The Bidder requests the Employer for Interest Free Advance Payment for Project for Supply and Services	Please Adhere to the bid document

		works value of Material or Equipment (including mandatory spares and Testing and measuring instruments) and Ten percent (10%) [Plus GST on the admissible advance on this component] oftotal ETC & Civil Charges		
130	General Terms and Conditions of the Contract (GCC) Part III, Volume 1	**GCC 5.0 - Effectiveness of Contract** - The contract shall be considered as having come into force from the date of the Notification of Award unless otherwise provided in the Notification of Award.	The Bidder requests that the Contract shall be effective from the date of handing over of encumbrance free land, payment of advance (as applicable)	Please Adhere to the bid document
131	General Terms and Conditions of the Contract (GCC) Part III, Volume 1	**GCC 27.0 - Completion time Guarantee** a) Delay over and above the prescribed completion period upto 1/4th of scheduled completion period; - 2.5% of the total contract price, as may be revised b) Delay exceeding 1/4th period but not exceeding 1/2 of scheduled completion period; - 5% of the total contract price, as may be revised **c)** Delay exceeding 1/2 period but not exceeding 3/4th of scheduled completion period; - 7.5 % of the total contract price, as may be revised **d)** Delay exceeding 3/4th period of scheduled completion; - 10% of the total contract price, as may be revised	**The Bidder requests the following :** a) Liquidated damages to be capped at 5% of the value of the undelivered equipment supplies and services b) In case the Contractor is able to complete the project in time i.e. in the Completion period of the project interim Liquidated damages as levied shall be waived off. c) the levy of liquidated damages shall be the sole remedy with the Employer for delays in the project.	Please Adhere to the bid document
132	General Terms and Conditions of the Contract (GCC) Part III, Volume 1	**GCC 41 - Force Majeure** - The party who has given such notice shall be excused from the performance or punctual performance of its obligations under the Contract for so long as the relevant event of Force Majeure continues and to the extent that such party's performance is prevented, hindered or delayed. The Time for Completion shall be extended accordingly.	The Bidder requests that in case the Force Majeure Conditions persists for a period of more than 60 days Either party can terminate the contract. The parties shall be not be responsible for performance of the obligations in the contract after this period after giving a notice of 7 days.	Please Adhere to the bid document
133	Special Conditions of the Contract (SCC) Part IV. Volume 1	**SCC Point No.1 - GCC 10.2.2. -Manufacturer's Warranty and Mode of Bank Guarantee [Common for all types]** : All the bank guarantees towards advance ,Bid Security BG, Performance security shall have to be furnished from an Indian scheduled/nationalized bank on the Rajasthan State Non judicial stamp paper (The Stamp Duty and Surcharge will be as applicable as per Rajasthan Stamp Act.) (purchased in the name of issuing bank) duly authenticated either by a first class Magistrate or Notary Public or directly confirmed by the issuing Bank towards advance/security/Performance security in favour of "The Chief Engineer (Contracts), RVPN, Jaipur". All the Bank Guarantees shall be submitted to the purchaser. These rates are in accordance with the new Stamp Duty Act of Rajasthan.	Considering the prevailing Covid Pandemic Situations and the situations arising hereto, The Bidder Requests that The Employer allows the Bidder for Issuance of the **Bid Guarantee (EMD) from any Scheduled Commercial Bank / Nationalized Bank from any state in India with payment of the stamp duty as applicable for that respective state.**	Please Adhere to the bid document

134	Appendix SSC Completion , Commissioning and Taking Over of Line	Apart from situation discussed above, there may be a situation that construction of a transmission line has been completed excepting 1-2 towers at any/either end(s) because terminating points at generating station end or substation end, which are not in the scope of the contractor, is yet to be frozen/constructed. There may be a situation that a transmission line being constructed by a contractor gets completed but for one or two intermediate spans for reasons not attributable to the contractor such as non availability of line corridor (ROW) /statutory clearances (forest clearance etc.). While such cases will have unique dimensions, calling for treatment on case-to-case basis, the broad guidelines for tackling such cases are described hereunder.	1) The Bidder understands that the entire land for substation is already acquired / in possession of Customer and which is free from all encroachments please confirm. 2) The Bidder understands that any clearances/activities w.r.t. a) Forest Clearance and Tree Cutting (as applicable) b) Right of Way c) Railway Clearance (if applicable) d) Unauthorized Construction e) any other site access restrictions shall be in Customer's scope. Please confirm Any cost incurred w.r.t. the same shall be to Customer's Scope. Suitable time extension shall be given to the bidder for such access restrictions/other restrictions.	Refer PBC at S. No 9. Refer Chapter-1, Vol-II(technical Specification for Lines) -Do-
135	1. Bid Security (Earnest Money)BDS, ITB-13.1& 13.2 2. Annexurel(Attachment-1)	Valid Bid Security Declaration (ANNEXURE-BSD) on Rajasthan Non-Judicial Stamp Paper worth Rs 50/-+ Surcharge on stamp paper as per Rule in liue of Bid Security. If the firm fails to abide the terms & conditions, laid in Annexure-BSD, the Amount of Bid Security shall be as under Rs. 3,60,94,600.00 (Rs. Three Crore Sixty Lacs Ninety Four Thousand Six Hundred only)	We understand that, the bidder who abide the Annexure-BSD, they have to provide the Valid Bid Security Declaration on Rajasthan Non-Judicial Stamp Paper worth Rs 50/-. And No need to submit the Bid Security of Rs. 3,60,94,600/-. Please confirm our understanding.	Please refer NIB & Bid document. Also Refer PBC at S.No 33.
136	Annexure-A, PRE QUALIFICATION REQUIREMENT 2. Technical Experience	..... OR C) One order of minimum line length 30 Km of 400KV or above voltage class and Two orders of minimum line length of 61 Km of 220 KV or above voltage class. (Total three orders).	We understand that "One order of minimum line length 30kM of 400kV and Two orders of minimum line length cumulatively of 61km of 220kV or above voltage class (Total three orders) Please confirm our understanding.	Confirmed
137	Annexure-A, PRE QUALIFICATION REQUIREMENT Technical Experience	And atleast one order of minimum line length of 19 Km transmission line of 400 KV or 220 KV or above voltage on Turnkey** basis.	We understand that here "Turnkey**" means with or without Conductor. Please confirm our understanding	Please Refer S.No 28
138	Schedule-Q(Substation)	Schedule-QR Substation is not clear.	Schedule-QR Substation is not clear. Please provide the same	Please Adhere to the bid document
139	Site visit	Land Acquisition Formalities	We understand that Substation Land Acquisition formalities are completed and title clear land will be handed over to the bidder. Please confirm	confirmed
140	i) Vol-III Civil Specification ii) Site Visit	Site Preparation/ Land Development work	In Specification, its mentioned that Countering and Substation leveling is in bidder scope but the line item for the same is not mentioned in the BOQ3. Since Its huge cost involved item, request you to add in the BOQ3 for Land Developments. Otherwise please clarify that in which this scope is Billable to bidder	Revised in BOQ3

141	Civil	Site Visit: 11 kV Crossing	We understanding that dismantling and Re-routing of existing 11kV line which is passing through the SS area is not in the scope of bidder.	In RVPN Scope.
142	Civil	Site Visit: Soil Condition	As per site visit, we understand that pile foundation is not envisaged. Please confirm. We also request you that please provide the soil investigation report	soil investigation report attached
143	Civil		As per site visit, we understand that Approach road for proposed substation area is not in the scope of bidder. Please confirm	Approach road up to substation from the main Road (Bikaner-Balotra) is in the Bidders scope.
144	Civil	Construction of Boundary wall	We understand that construction of boundary wall is not in bidder's scope	RVPN Scope.
145	Price Schedules	Extra Item	We understand that Bidder have to quote as per provided Bill of Quantities & BPS only. Any item required other than BOQ shall be treated as extra item and shall be payable as actual. Please confirm.	Any item required other than BOQ be quoted in the BOQ with proper justification and billing breakup be furnished with Financial Bid.
146	Tender Document & Civil PBS	Stage Wise/Milestone payment for LOT items in PBS	Please confirm billing breakup for Stage wise / Milestone Payment for LOT items in PBS which has not mentioned anywhere in the tender document. We also understand the the billing breakup can be proposed by bidder during detail engineering.	AS per RVPN Standard practice.
147		1. Bidder shall have constructed & commissioned minimum 2 Nos. of substations anywhere in India with or without supply of power transformer/ reactor of 400 KV or higher voltage class S/S at two different locations within last five years on the date of technical bid opening . At least one Sub-Station out of above commissioned under Turnkey** Contract shall be in satisfactory operation for a period of one(1) year within last three Years. (Supporting documents/Certificates of original customer to be submitted.) with Sub-Station Automation System / SCADAas on the date of technical bid opening .	The bidder as a prime contractor shall have completed erection, testing and commissioning of at least 1 No 400 KV or higher line bay/ICB bay/Bus coupler bay and at least 1 No 220 KV or higher voltage substation on turnkey basis, in last 5 years as on the date of bid opening. Further, the bidder as a prime contractor must has designed, manufacture red, tested, supplied, installed and commissioned 345 KV or above voltage class transformer of at least 200 MVA (or equivalent capacity in banks of 3 single phase units). Transformer should have been in satisfactory operation for at least two (02) years as on the originally scheduled date of bid opening.	Please Adhere to the bid document
148		1 500 MVA, 400/220/33 kV, 3-Phase Transformer. The bidder shall supply 400/220/33 KV EHV Transformers of various MVA Rating from the manufacturer. who must have designed. manufactured .tested, supplied, installed and supervised installation. testing & commissioning of at least 5Nos. of 315 MVA or above rating of transformer /Generator Transformer(or equivalent capacity in banks of 3 single phase units)of 400KV or above voltage class transformers during	*The bidder, should have designed. manufactured .tested, supplied. installed and commissioned 345 kV or above class transformers of at least 200 MVA capacity (or equivalent capacity in banks of 3 single phase units) . Transformers should have been in satisfactory operation for atleast two (2) years on the originally scheduled date*	Refer PBC-1

		last seven (7) years in India as on the date of technical bid opening . At least 02(Two) nos of power transformers supplied in India should have satisfactory operation for at least two (2) years in India as on the date of technical bid opening or be authorized by such as manufacturer to supply and provide after sales services with necessary back-up support from the manufacturer.as on the date of technical bid opening.	*of technical bid opening* ***OR*** *The 345 kV or above class transformer manufacturer who has established production line in India for these equipment's based on technological support of parent company or collaborator provided:* *a) Such manufacturer has designed, manufactured, type tested, supplied, supervised installation and commissioning of " 220 kV or above class Transformer". Transformer should have been in satisfactory operation for atleast 3 years on the originally scheduled date of technical bid opening.* *b) The parent company (Principals) or collaborator should have designed, manufactured, type tested, supplied, supervised installation and commissioning 345 kV or above class transformers of at least 200 MVA capacity (or equivalent capacity in banks of 3 single phase units) . Transformer should have been in satisfactory operation for atleast two (2) years on the date of bid opening .* *c) Such manufacturer furnishes:* *i) a legally enforceable undertaking (Jointly with the parent company or collaborator) (as per the format Appendix-1(A)) to guarantee quality, timely supply, performance and warranty obligations as specified for the equipment (s)to be manufactured and supplied from his works in India and another undertaking for ensuring after sales service and spares in prescribed schedule ; and* *ii) An undertaking from the parent company or collaborator alongwith the bid stating that parent company or collaborator shall furnish performance guarantee upto Contract Performance Guarantee Period for an amount of 10% of the cost of such equipment(s). This performance guarantee shall be in addition to performance guarantee to*	

			be submitted by the bidder. Alternatively this undertaking and PBG can be submitted by such manufacturer	
149	VOL_III_CIVIL_Pach	SITE PREPARATION:	As per Civil Technical specification clause No.3.0 site levelling is in bidder scope. However there is no item for this. **Kindly include the same in BOQ item.**	Please Refer BOQ3 Item No 70 & 71.
150	VOL_III_CIVIL_Pach	Site shall be graded to the levels as per the existing FGL (finished grade level).....	**Please inform the Level of FGL for Switchyard/Substation.**	Average NSL level indicated in Contour.
151	Part23- Testing and measuring & testing equipment,	Multifunction Transformer Test Kit Winding Resistance: current range : 0 – 400 A DC		Multifunction Transformer Test Kit Winding Resistance: current range : 0 – 100 A DC or more

PRE BID CLARIFICATION NO. 03

Construction of 400 KV GSS Pachpadra along with its associated lines under Bid enquiry No. RVPN/ BN.-9019002102

S.No.	Document/ Clause No. / Ref. No.	Provisions as per Specification	Clarification Requested/ New Clause.	RVPN Reply
1	General	General Land Availability	We trust that, RRVPNL will hand over the legally encumbrance free land to the bidder at the time of LOA .Please confirm.	Please Adhere to the bid document.
2	Volume - I	Terms of payment GCC , SCC 9.7.3 , 'C) Inland Transportation, In-transit insurance, Loading & unloading Charges	The referred clause states that "It is the Nigam understanding that as per extant provisions, on the charges for Inland transportation, in transit insurance charges, Loading and unloading charges by the Contractor to the Nigam, GST is not payable. If payable, the same shall be to the Contractor's account and Nigam shall not reimburse any GST on this account." From the above clause, we understand that the GST will not be payable on F&I. However in the client price schedule break up for the GST is mentioned for F&I. As both the clauses are contradictory, kindly clarify whether the GST for the F&I is payable or the same to be included in our unit price.	Please Adhere to the bid document.
3	Volume - I	GCC clause 10.1.1 & SCC - SL No. 8	As per the clause The contractor shall warrant that the equipment will be new, unused and in accordance with the contract documents and free from defects in material and workmanship for a period of Thirty Six (36) calendar months from TOC (Taking over certificate) of the project commencing immediately upon the satisfactory commissioning of all equipment's of facility through Contract Performance Guarantee of the amount equivalent to 03% of the Contract Value plus additional performance securities, if any, in line with the requirement of Qualification Requirements. From the above clauses contractor is liable for any defect for all equipment's for 3 years and additional 2 years for Autotransformer and reactor . We request NEA to change defect liability period for all other equipment's accept-(auto transformer & reactor , other 400 KV class equipment) to 12 months from TOC (Taking over certificate) as the same clause was there for RRVPNL KANKANI	Please Adhere to the bid document
4	BOQ 399711	Price schedule	There is no summary in the price schedule. Please include the Grand summary in the price schedule Break up.	Please Refer ITB-25

		BOQ_331910	Also please confirm whether the Taxes and Duties will be considered for Evaluation or not.	
5	Volume - I	General Hardcopy submission	Kindly confirm that only the Bid security declaration, DD/Banker's cheque pertaining to tender cost and Tender processing Fee shall be submitted in hardcopy on or before the deadline of the Tender submission. Rest all other Bid documents has to submitted through online only. Please confirm.	Confirmed.
6	Volume-I	General -Bocw cess	We understand that 1% BOCW cess shall be applicable only on the Civil & Installation works. Please confirm.	AS per Govt guidelines
7	Volume-I	GCC, , Quantity Variation cl no: 42.1 iii) & cl no:42.2	In the first referred clause 42.1 iii) Quantity variation for the additional quantities shall be 50% of the quantity of the individual items and 50% of the value of original contract in case of works and 50% of contract Value for the services. However as per the next referred clause 42.2 , "For the Quantities identified by the Nigam quantity variation is permitted to any extent , with the ceiling of 1% of the contract Value". We request you to clarify the relation between the above two clauses i,e for Additional Quantities and the quantities identified by the Nigam Kindly clarify whether the above referred additional quantities are not applicable for the quantities identified by the Nigam. Please specify clearly the quantity variation applicable for the said project.	As per RTPP Rules,
8	Volume - II	Part - II 'GTR, cl no: 13.12.3	As per the referred clause "All the equipment offered, shall be fully type tested as per the relevant standards before commencement of supply. The bidder shall furnish three sets of the type test reports along with the offer. Bids offered without type test reports will be treated as incomplete and termed as non-responsive and rejected". Since type test reports are huge bulky documents, it is not possible to upload all the type test reports in the portal due to the limitation in the folder size. Hence we confirm that Type test reports for all the offered equipments shall be submitted on award of contract. However summary of Type test reports shall be submitted for the major Equipments mentioned in qualification Requirement Annexure-A along with the Bid. Kindly confirm	Confirmed
9	Volume - I	ITB 32.1 , BDS - SL no. 13 & 26	As per BDS Sl no. 13 , bidder has to submit bid security(Annexure BSD) declaration with stamp of worth Rs. 50 + surcharges on stamp paper as per rule in lieu of bid. As per ITB 32.1 performance security is defined and the same clause is brought in BDS SL. No 26 and it says	

			As per article 13 – A of Rajasthan Stamp Act., the Stamp duty and Surcharge will be @ 0.25% of Amount of BG security subject to maximum limit of Rupees 25000.00. Only Rajasthan Govt. Stamp is acceptable. From above we understand that we have to give Bid security declaration with stamp of Rs. 50 +Surcharges on stamp paper as per rule in lieu of bid in bidding stage and after award of contract we have to give performance security with the Stamp duty and Surcharge will be @ 0.25% of Amount of BG security subject to maximum limit of Rupees 25000.00. with Rajasthan Govt. Stamp .Please confirm our understanding. Also please confirm that the Rs. 50 stamp for bid security declaration should be with Rajasthan Govt. stamp or any state stamp is acceptable.	Performance security be furnished as per Rajasthan Stamp Duty Act. Rajasthan Govt. stamp
10	Volume - I	GCC 9.7.3 ;D	**Payment towards Price adjustment :** As per the clause any interest on GST payable due to increase in Contract price due to price adjustment shall be to the Contractor's account and Nigam shall not reimburse any amount on this account. We request RRVPNL to reimburse the interest on GST payable due to increase in Contract price due to price adjustment .	Please Adhere to the bid document
11	Volume - I	GCC Clause 26.3	As per the clause If the Contractor is not able to remove the shortcomings for the reasons not attributable to him, only this amount as at 26.1 above shall be withheld. After the cause of hindrance preventing the Contractor to complete the work is removed, a justifiable time period (not more than a month) shall be given to Contractor to remove all the pending shortcomings / deficiencies. In case the Contractor fails to remove all the shortcomings / deficiencies within this time period then also the Performance period of the project shall be extended by this period of delay after removal of hindrances.We request RRVPNL to not hold the amount if reason for shortcoming is not attributable to contractor.	Please Adhere to the bid document
12	Volume - I	NIB Tender Document Fee and Tender Processing Fees	We request you to accept the NEFT payments against the tender processing fee and bidding document fee instead of Banker's cheque/DD. Banks are also requesting to adopt the NEFT payment after this Post covid situation. Kindly confirm the same and accordingly please share the Account Details for NEFT transaction.	Please Adhere to the bid document

13	Volume - II	Part 1 , Clause 2.14 , B	As per clause : Handholding - Immediately after the handing over of the substation, the successful bidder/ contractor shall place his at least 2(Two) Nos. expert Engineers at substation for 12 months who can handle the initial operational problems and shall run the substation alongwith the RVPN Engineers.They shall also simultaneously train RVPN Engineers on total aspect of the system installed at substation. Here we understand that there is no maintenance work in scope of subcontractor .Please confirm	Please Adhere to the bid document
14	Tender drawings	Tender drawings	Please furnish the following tender drawing for Pachpadra Substation as the same is not available. a) 400kV Single line diagram b) 220kV Single line diagram c) 220kV Section view for each typical bay d) General arrangement drawing of 220kV SPR If not available, whether bidder can decide based on standard requirements?	Attatched.
15	BOQ 399710	Schedule-1 (BoQ1) (Supply -Plant & Equipment 400 kV GSS Pachpadara, Sl No. 2 & 4- 500 MVA, 400/220/33 kV auto transformer and 400 kV, 125 MVar Bus reactor	In the referred BoQ, Mandatory Spares are not mentioned for 500 MVA, 400/220/33 kV auto transformer & 400 kV, 125 MVar Bus reactor. Please add a separate line item for mandatory spares if required.	Mentioned in the respective Technical specification. To be supplied Free of cost as per Cl No 9 & 12 of Transformer & Reactor respectively.
16	BOQ 399711	Schedule-3 (BoQ3) (Civil services-Plant & Equipment 400kV GSS Panchpadra), Sl No. 57 - Cable trench Tender drawing - Overall layout and General arrangement of outdoor cable trench	As per overall layout drawing, Cable trench section-A-A is shown. However, cross-section drawing for Section-A-A is not available in the General arrangement of outdoor cable trench and also in the referred price schedule. Please furnish the cross-section for Section-A-A and add a separate line item in the BoQ also (if required).	Please Adhere to the bid document
17	Volume-II	part-I General specification & Bill of material, Clause No. 2.4 (B)	As per referred clause, "*Supply (excluding erection, testing & commissioning) of PLCC equipments/panels for 220kV remote (developer's) end, matching with the equipment's to be supplied/installed at 400KV GSS Pachpadra at 6 Nos. 220KV feeders bays are in the scope of the bidder as per clause No.2.5 of Vol-II,Part-I of the specification*" In this regard, we are	BOQ Revised for FOTE & PLCC.

			not envisaging following equipment in 220kV remote end station: a) Outdoor wave trap & CVT b) HF cable c) Extension of existing 48V Battery & DCDB d) LT DC /AC power cable supply to PLCC Only supply of PLCC panel shall be envisaged under present scope at 220kV remote end. Please confirm whether Bidder's understanding is in order.	
18	Volume-II	part-I General specification & Bill of material, Clause No. 2.4 (B) Schedule-1 (BoQ1) (Supply -Plant & Equipment 400 kV GSS Pachpadara - SL No. 208	Please clarify whether PLCC is required for 400kV line bays at Pachpadrara station and 400kV remote end station.	BOQ Revised for FOTE & PLCC.
19	General Query	Transmission line length	Please furnish the transmission line length: a) 400kV Rajwest to Pachpadara b) 400kV Pachpadara to Jodhpur kankani c) 220kV HRRL to pachpadra d) 220kV Balotra to pachpadra e) 220kV Pachpdara to Boronada	As per the Bidding Documents.
20	Volume-II	part-3, Substation automation system, Clause No. 5.2.3 Network Management System	In the referred clause of technical specification, Network management system (NMS) is indicated. NMS is generally required for managing a large network & shall be part of LDC. Hence, for managing the network under the scope of this package a craft terminal as mentioned in the BPS is sufficient. Hence, we do not envisage any NMS under this contract. Please confirm.	Please Adhere to the bid document.
21	Volume-II	part-9, Wave trap, Annexure-1, Rated continuous current for 220kV Wave trap	As per referred clause, Rated continuous current for 220kV Wave trap shall be 2000A. However, as per BoQ-1, Sl No. 156, Rated continuous current for 220kV Wave trap is 1250A. As the above clauses are contradicting, please check and confirm the rated continuous current for 220kV Wave trap.	Rated continuous current for 220kV Wave trap shall be 2000A.
22	Volume-II	part-11 - Battery & Battery charger, Clause No. 2.6 - 220V Battery charger	As per referred clause, "*The float section of the charger suitable for 600AH batteries shall be capable of delivering a continuous load of 40A . The boost section shall be capable of delivering a continuous load of 120 Amps.*", However, as per BoQ-1, SL no. 254, Battery	Please Adhere to the bid document.

			charger rating is 220V, 100 Amp/ 70Amp float cum boost Battery Charger. In this regard, please check and confirm the charger current rating.	
23	BOQ 399710	BoQ-1, SL no. 254, Battery charger rating is 220V, 100 Amp/ 70Amp float cum boost Battery Charger (Separate sections for Float & Boost charging operation)	We understand that 1set of Float-cum-boost charger consists of 1No. Float charger & 1No. Boost charger. Can we propose one Charger with combined Float & boost operations? Please confirm.	Please Adhere to the bid document.
24	Volume-II	part-17 - Switchyard erection, clause no. 1.2.13.3 Insulator String	As per referred clause, 220kV Double Tension string shall be with 15 nos. of disc. We understand it shall be 2x15nos. Disc insulators per string.	Yes , 2x15nos Disc insulators per string
25	Volume-II	part-21 - 400kV transformer, clause no. 6.15 Vol-II, Part-24 - Shunt reactor	As per referred clause, 400kV winding system fault current is 63kA. However, as per part-2, General Technical Requirements, clause no. 44.0, Sl No. F- System parameter, 400kV system short circuit current is 40kA for 1 sec only. In this regard, please check and confirm the 400kV winding short circuit current.	For Transformer & Reactor it should be 63 kA as per CEA guidelines.
26	Volume-II	part-21 - 400kV transformer, clause no. 6.18 - Bushing creepage distance	As per referred clause, Transformer bushing creepage distance is 31mm/kV. However, as per part-2, General Technical Requirements, clause no. 44.0, Sl No. F- System parameter, Creepage distance is 25mm/kV. In this regard, please check and confirm the creepage distance which need to be followed.	For Transformer & Reactor it should be 31 mm/kV kA as per CEA guidelines.
27	Volume-II	Part-24 - Shunt reactor, Clause No. 1.1	As per referred clause, ,Neutral Grounding Reactors(Line Type) is mentioned for Shunt reactor. However, there is no line item in the BoQ for the same. Please check and clarify whether NGR is required for shunt reactor. If yes, please add a separate line item in the BoQ and furnish the detailed specification for the same.	Bus Type Reactor.
28	BOQ 399710	BoQ-Schedule 1	Line item for 400kV and 220kV CT / CVT Junction boxes are not appearing in the bid price schedule. Please check & include the same in the revised the bid price schedule.	Please refer BOQ S.
29	Volume - II	PART-3 Section-I Technical Specification for Control & Relay Panel, Clause No.7.2, Page No. 96	As per the referred clause, both Main-1 & Main-2 protection commands are envisaged through PLCC. However, as per the BPS line item no. 207 & 232, both PLCC and FOTE are in the scope of this package. In this regard, we propose the following: a) For remote end tripping of each line the Main Protection-1 shall be through FOTE whereas the Main Protection-2 shall be through PLCC.	Please Adhere to the bid document.

			b) Speech & Data shall be through FOTE only Please confirm.	
30	Volume - II,	PART-3 Section-I Technical Specification for Control & Relay Panel, Clause No. 7.2 - (IX) Multifunction Meter	As per referred clause, we understand that Multifunction meter is required only for line bays. The same is not required for Transformer, Tie, Bus couplers bays. Please confirm.	Please Adhere to the bid document.
31	Volume - II	, PART-3 Section-I Technical Specification for Control & Relay Panel, Clause No. 11 - Configuration of control & relay panel	As per referred clause, Cut out & wiring with TTB for Energy Meter shall be provided for Line & transformer bays. In this regard, we understand that supply of energy meter is not under present scope. Please confirm.	Supply of energy meter is under scope of bidder.
32	Tender drawings	Tender drawing - Overall layout	We presume that Earthing, DSLP, Lighting, Cable trench & other associated works are required to be executed only for the present scope of works and the same are not required for future bays and future areas. Please confirm.	Future Bays Included , Future Area not included.
33	Volume - II	PART-3 Section-I Technical Specification for Control & Relay Panel	As it is a SAS based system, we do not envisage separate control panels with mimic, switches & alarms. Only BCU based relay panels shall be provided for control & protection. Please confirm.	Control & Relay Panel Required.
34	Volume - II	Part -21, 400/220/33 KV Auto Power Transformers	Please confirm the type of Power transformer i.e. Constant percentage impedance or Constant ohmic impedance type.	Please Refer clause No 1.2 of technical Specification (Transformer)
35	Volume - II	Part -21, 400/220/33 KV Auto Power Transformers	As there is no requirement of online DGA, Online Drying system, Fiber optic temperature sensing unit, Digital RTCC, Automatic Voltage regulating relay (AVR) mentioned in Specification/ Bid price schedule, we are not envisaging these items in our scope of supply. Please confirm.	Please Adhere to the bid document.
36	Volume - II	Part -21, 400/220/33 KV Auto Power Transformers, Clause No. 5.2	As per referred clause, Type tests shall be carried out on first transformer of each Lot ordered on Firm manufactured at each manufacturing plant (if applicable). All type and routine tests shall be carried out without any extra cost to Purchaser. However, as per Part-2, General technical requirement , Clause no. 13.12.3, We understand that if Valid type test reports are submitted which is not older than 7 years on date of bid opening, then the repetition of type tests on the first unit of transformer is not required.	Tests mention in the relevant technical part are to be conducted.

			Please confirm.	
37	Volume - II	Part -24, Shunt Reactor, Clause no. 5.2.4	As per referred clause, Type tests shall be carried out on first reactor of each Lot ordered on Firm manufactured at each manufacturing plant (if applicable). All type and routine tests shall be carried out without any extra cost to Purchaser. However, as per Part-2, General technical requirement , Clause no. 13.12.3, We understand that if Valid type test reports are submitted which is not older than 7 years on date of bid opening, then the repetition of type tests on the first unit of transformer is not required. Please confirm.	Tests mention in the relevant technical part are to be conducted.
38	Volume - II	Part - 19 : LT Switchgear (AC & DC Distribution board)	We understand that outgoing feeders in AC & DC distribution board shall be provided only for present bays. Please confirm.	Please Adhere to the bid document and lay out provided
39	Tender drawings	Tender drawing - Overall layout - Pachpadara GSS	Kindly furnish the dimensions of the following facilities: i) Vehicle Parking shed ii) Store shed	Drawing attached,
40	General	General	Technical requirements for the tender are specified in 3 broad categories 1) Bid Price Schedule; 2) Technical specification 3) Tender drawings. In case of contradictions among these documents, please inform the order of precedence - which one will prevail over other.	Please refer Clause No 9.3 of ITB.
41	Volume - II	Part-11, Technical Specification for Battery & Battery Charger, Clause No. 3.4	As per referred clause, Back up duration for 220V & 48V battery shall be provided for 8, 24 or 48 hours. Normally it is 3 hours as followed by major utilities like PGCIL. Please check and clarify the actual back up duration to check the adequacy. Also please confirm whether the Battery shall be sized only for the present scope (or) for the future scope also? If future bays need to be considered, please inform the number of future bays in 400kV & 220kV.	Please Adhere to the bid document. As per the ELP.
42	BOQ 399710	BoQ-1, SL no. 66, 112, 115, 118, 121	The quantity of 220kV CT & isolators are not matching w.r.t the number of 220kV bays. To understand the requirement better, we request RVPN to furnish the SLD for 400/220kV substation with proper legends.	SLD Enclosed.
43	BOQ 399710	BoQ-1, SL no.71, 245 kV single phase two core current transformers for	As per referred clause, 245kV Metering current transformer & metering CVT quantity are mentioned. In this regard, please clarify for which 245kV line bays, metering CT & CVT shall	SLD Enclosed.

		metering (0.2 s class). (Live Tank Type only) & BoQ-1, SL no.87, 245 kV single phase 4400 pF CVT suitable for metering voltage ratio 220/0.11 kV(0.2s class	be provided. Further, there is no separate line item for Energy metering also, If any dedicated energy metering is required, please add separate line item for energy meter & associated panel also.	Please Adhere to the bid document
44	BOQ 399710	BoQ-1, SL no.369- 52 KV XLPE Power Cable with all accessories	a) As per Vol-II / Part-12 / FRLS Power & Control Cables, Clause No. 2.1, We understand that 52kV cable may be used for interconnecting 630 KVA LT transformer to the tertiary of ICT. However, as per tender layout, interconnection between 630 KVA LT transformer and tertiary of ICT is shown with overhead connection. Hence, we understand that referred line item for 52kV cable is not required. Please check and delete the item from the BoQ (if not applicable). b) Further, if 52kV cable is required for this project, please specify the scope of 52kV cable and furnish technical specification for the same.	Both 400 KV Transformer tertiary Loading.
45	Volume-II	, Part-II, Annexure-V2-P2-2, Seismic Withstand Test Procedure	Please furnish the list of equipment for which seismic withstand test is envisaged. We propose to furnish the seismic design calculation instead of testing. Please confirm acceptance.	Please Adhere to the bid document
46	BOQ 399710	BoQ-1, Sl no.27 -	As per mention clause 420 kV, 2000 Amp., 40 kA rupturing capacity circuit Breaker suitable for single and three phase rapid auto reclosing complete with mounting structures, foundation bolts and nuts and first filling of SF6 gas plus 20% spare gas including accessories and auxiliaries. As per referred line item, we understand that Pre-Insertion resistors (PIR) are **not** required for 400kV line bay circuit breaker and Controlled switching device (CSD) is not required for 400kV transformer bay circuit breaker. Please confirm.	Please Adhere to the bid document
	Volume-II	part-I General specification & Bill of material, Clause No. 2.0 BoQ-1, SL no.164 & 165	As per referred clause, number of 220kV Bus Coupler Bay and Transfer Bus Coupler Bay are as follow: a) 220kV Bus Coupler Bays - 1 No. b) 220kV Transfer Bus Coupler Bay - 2 Nos.	Please Refer SLD.

		Tender overall layout - Pachpadra	But as per BoQ-1, item no. 164 & 165, CRP quantity for Bus Coupler Bay and Transfer Bus Coupler Bay are as follows: a) 220kV Relay Panel for Bus Coupler - 2 Nos. b) 220kV Relay Panel for Transfer Bus Coupler - 1 Nos. Further, as per overall tender layout, number of bays are as follows: a) 220kV Bus-coupler cum TBC - 2 Nos. b) 220kV Transfer Bus Coupler Bay - 1 Nos. As above clauses are contradicting, Please specify the actual number of Bus Coupler Bay, Bus coupler-cum-transfer bus coupler bay and Transfer Bus Coupler Bay.	
47	BOQ 399710	BoQ-1, Sl no.208, Carrier set	The number of carrier sets as mentioned in the referred BPS line item is 24sets. The number of coupling devices as mentioned in the BPS is only 8set. However, for 6# 220kV lines (considering, the local & remote ends) and 2# 400kV lines (only local end), the quantity shall be 28sets, if 2 carrier equipment per line is considered. Please check and confirm. Also please check & confirm the AF protection coupler quantity.	The quantity of carrier sets is modified to 16 Nos. There is already carrier sets available on line sections which are going to LILO on 400kV GSS Pachpadara
48	BOQ 399710	BoQ-1, Sl no.208, Carrier set	We understand each line shall be provided with 2sets of carrier equipment as follows: a) Speech + Protection - 1set b) Speech + data-1set Please confirm	Confirmed Only Digital PLCC carrier sets are considered.
49	BOQ 399710	BoQ-1, Sl no.211, Coupling device	The number of coupling devices as mentioned in the BPS is only 8set. However, for 6# 220kV lines (considering, the local & remote ends) and 2# 400kV lines (only local end), the quantity shall be 14sets. Please check and confirm.	Quantity of Coupling Device is corrected as 07 Nos at 400kV Pachpadra End and 01 Nos at HRRL End.
48	BOQ 399710	BoQ-1, Sl no.208, PLCC	Please confirm whether any dismantling, relocation, re-installation & re-commissioning of remote end PLCC is required for the following lines? a) LILO of 400kV Rajwest-Kankani (one circuit) b) LILO of 220kV Balotara-Boronada (Single circuit) c) LILO of 220kV Balotara-HRRL (Single circuit)	Not in scope of bidder

			If required please add a separate line item in the BPS.	
49	BOQ 399710	BoQ-1, Sl no.218, Copper cable 4Cx6 Sq.mm for PLCC	Please confirm the application of this cable in PLCC communication system, as we have a separate line item already for HF cable under Sl. No. 212.	For HF termination from CVT and AC/DC wiring of PLCC equipment's
50	BOQ 399710	BoQ-1, Sl no.236, OLTE	Please specify the make & model number of the remote end existing PLCC panels for the 400kV & 220kV.	400kV Line section ABB Make 220kV Line section PUNCOM Make
51	BOQ 399710	BoQ-1, Sl no.236, OLTE	a) Please specify the number of directions for which FOTE communication is required. b) Any remote end FOTE supply is envisaged, as there are 4sets of OLTE equipment mentioned under BPS line item no. 236. c) If remote end stations are already having FOTE equipment installed, please furnish the make & model number.	From 400kV Pachpadra 03 Nos Directions are planned 1. Kankani 2. Balotara 3. 220HRRL At Kankani End FOTE Make ABB FOX 615
52	BOQ 399710	BoQ-1, Sl no.241, 4 port data interface card for remote end (to be located at nearest SLDC/Sub LDC)	From the line item description it appears that the data interface card need to be supplied & installed in existing FOTE equipment at SLDC/Sub-LDC. In this regard, please furnish the make & model number of existing FOTE equipment at SLDC/Sub-LDC.	ABB Make FOTE FOX615
53	Volume-II,	Part-3, Clause-2.2	As per technical specification, Volume-II, Part-3, Clause-2.2, The communication shall be made in 1+1 mode, excluding the links between individual bay IEDs to switch. Hence, we understand that the relays/BCUs shall be provided only with single communication port. Please confirm.	Please Adhere to the bid document
54	Volume-II	Part-3, Clause-11, Sl. No. e	For shunt reactor, Whether Backup overcurrent & Earth fault relay can be provided as an inbuilt feature of Backup impedance protection relay?	Please Adhere to the bid document
55	Volume-II	Part-3, Clause-11, Sl. No. g, h, i	Whether one combined relay for LBB and backup over current & earth fault protection can be provided for 220kV BC, TBC & Bus-section bays?	Please Adhere to the bid document
56	Volume-II	Part-3(Section-II)/Substation Automation System, Clause No. 4.1.2.2	As per the referred clause, *"The contractor shall also provide Rear Projection MIMIC Display having at least 75 Inch LED display with all necessary accessories / item, software, hardware,*	Please Adhere to the bid document

			mounting arrangement etc required for satisfactory operation. Please furnish the detailed specification for 75" LED display".	
57	Volume-II	Part-5/Isolator, Clause No. 5.1	As per referred clause, "420 kV and 245 kV Isolators / Isolators cum earthing switch shall be of **single centre break** type having two rotating insulator posts per pole as well as **horizontal double break type** having one rotating insulator post per pole (for line). However, as per BoQ-1, All 400kV & 220kV Isolators are double break type. We presume the type of isolators shall be as per BPS. Please confirm whether Bidder's understanding is in order.	400kV & 220kV Isolators are double break type
58	Volume-II	Part-2, Clause No. 13.12.2	As per referred clause, "The NIGAM may, at his discretion, waive type tests provided type test reports of tests carried out on identical equipment(s) manufactured by the Contractor ". However, as per individual equipment specification, similar rating type test reports are acceptable. In this regard, We shall furnish the similar equipment type test reports instead of identical equipment. Please confirm.	Please Adhere to the bid document
59	BOQ 399710	BoQ-1, SL no.567 - Testing and measuring equipment:	As per Vol.II,Part-24, Following testing and measuring equipment specification is not available: a) SF6 gas filling and evacuation kit b) SFRA test kit c) Low range **tong** tester	Please Adhere to the bid document
60	Volume-II	Part-24/Shunt reactor, Clause No. 3.7.1 & 7.1.7	As per referred clause, "The neutral of the shunt reactor shall be brought out through 145kV class RIP bushing.". However, as per clause no.7.1.7, neutral is through 145kV class oil filled condenser bushings. In this regard, please check and clarify whether neutral bushing is RIP type or OIP type.	Please Refer 3.5.1 of technical specification(Reactor)
61	Volume-II	Part-5/Isolator	We propose Electrical ganged isolators for 400kV switchyard and 220kV tandem isolators. We propose Mechanical ganged isolators for 220kV switchyard. Please confirm acceptance.	Please Adhere to the bid document
62	BOQ 399710	BoQ-1, Sl no.3 - 500MVA, 400/230/33kV Transformer	The line item description says Oil required for first filling plus 10% spare oil quantity. In this regard, we understand that 10% spare oil shall be provided for only one transformer. Each transformer shall not be provided with spare oil. Please confirm.	10% spare oil quantity with each Transformer & Reactor.
63	BOQ 399710	BoQ-1, Sl no.27, 29 & 45 - 400kV &	The line item description says SF6 gas required for first filling plus 20% spare quantity. In this regard, we understand that 20% spare gas shall be provided for only one Circuit breaker.	20% spare quantity with each breaker.

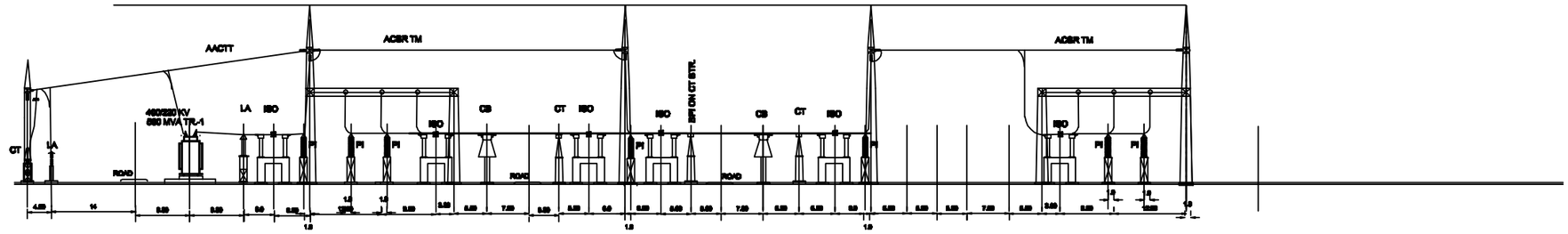
		220kV circuit breaker	Each Circuit breaker shall not be provided with spare gas. Please confirm.	
64	Volume-II	Part-1,Clasue No. 2.1.1, SL No. k	As per referred clause, 33/.4 kV, 630 kVA LT Transformer incomer supply shall be from DISCOM electric supply. In this regard, we understand that Discom supply shall be arranged by RVNL near to the LT transformer. We are not envisaging any 33kV HT cable for connection between 33kV Discom pole & LT transformer. Please confirm. If required, Please add a separate line item and furnish the location of Discom tower in the overall plot plan.	Please Adhere to the bid document
65	Volume III, Section Civil, Page no: 14 & Volume - II, part - 1	Cl.no : 6 (1) & 2.1.2 (i)	As per referred clause of Civil works, it is mentioned that "The approach road and road within substation shall be provided for access to equipment and building are in the scope of bidder". also in layout from main road to SS gate (2 entry) is shown. However, in scope of work the approach road is not included in bidder scope, also there is no separate item given in price schedule for the same. We trust that, approach road is not in the bidder scope. Please confirm. If, it is in bidder scope. Please add an item for the same in price schedule, also mentioned the length, width & Type of approach road to be considered.	Approach road up to substation from the main Road (Bikaner-Balotra) is in the Bidders scope.
66	Vol-II, part-1, page: 3	Cl.no : 2.1.2	As per referred clause, the Contouring and substation leveling is in bidders scope. However in price schedule there is no separate item for the same. Kinldy include the item for substation levelling (i.e, cutting & filling , Borrowed earth & retaining wall (if required). inorder to estiamte the quantum of work.	Please Refer revised BOQ3
67	Vol-III,Civil works,Sec-Civil,Page 8	Cl.no : 3	If site levelling is in bidders scope, With reference to the referred clause, it is not clearly mentioned whether the site grading is required to be done for entire plot with in plot boundary. We propose to level the land for the area within the substation peripheral road and fence and we presume that site levelling outside the substation fence, within the plot boundary is not in bidder scope (i.e Space for colony). Please confirm.	Please Adhere to the bid document

68	Vol-II, part-1, page: 3	Cl.no : 2.1.2	As per price schedule, the Civil works are paid either in LOT or in Number basis. In this regard, please furnish the following for the proposed substation in order to assess the Site Grading quantity & foundation depth. 1. Proposed FGL. 2. Soil Report (if available).	Average NSL level indicated in Contour.
69	Vol-III,Civil works,Sec-Civil,Page 8	Cl.no : 3	As per referred clause, it is mentioned that the "Site shall be graded to the levels as per the existing FGL (finished grade level) which includes clearing the site area free of bushes, trees including removal of roots, any unsuitable materials, demolition of any temporary/ permanent building / structures / foundations and removal of debris / unsuitable material and disposing of un suitable / unserviceable material outside the premises with the permission of Engineer-in-charge". However in site plan the the existing FGL & propsoed FGL is not shown. Please furnish the Existing FGL & proposed FGL for proposed substation, In order to decide the foundation depth for access the foundation quantities.	Average NSL level indicated in Contour.
70	Drawings - Tentative ELP of 400/220kV GSS Pachpadra (Barmer)		We wish to inform that, in referred layout 3.75m wide road is shown. However in price schedule there is no separate item for 3.75m wide road. Please include the same.	BOQ 3 Revised.
71	Volume III, Section Civil, Page no: 13	Cl. No: 5 (9)	In referred clause It is mentioned that, "Invert of the drainage system shall be decided in such a way that the water can easily be discharged above in High Flood Level (HFL) outside substation boundary at suitable location upto a maximum 50M beyond boundary wall of substation or actual whichever occurs earlier and approved by Owner. Pumps for drainage of water (if required) shall be provided by Bidder". Since the drain shall be a LOT item. Please furnish the HFL, to estimate the drain quantity.	Average NSL level indicated in Contour.
72	Volume III, Section Civil, Page no: 13	Cl. No: 5	In Tech spec it is not mentioned that, Drain shall be provided on both side of road (or) one side of road. We propose to provide the drain on one side of substation road. Please confirm.	Please Adhere to the bid document

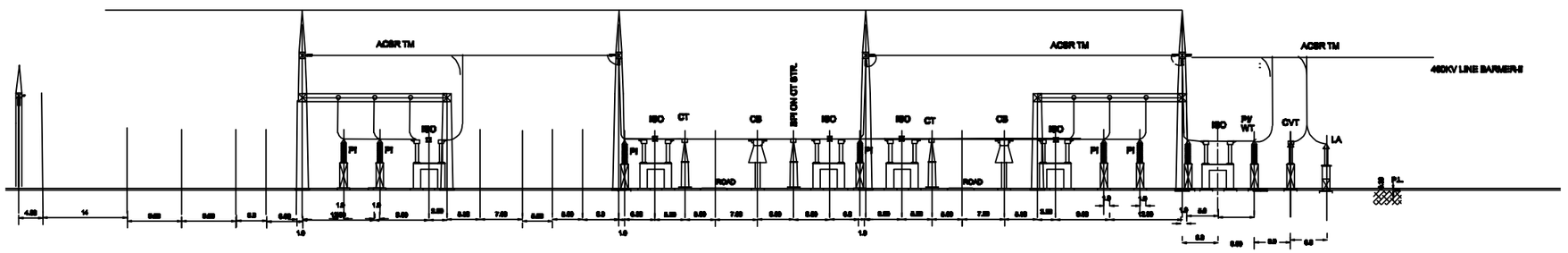
73	Volume III, Section Civil, Page no: 11 Schedule BOQ-3 (Civil part)	Cl.no: 4.7 Sl.no: 70	In tech Spec. it is mentioned that, Over the prepared sub grade, 150mm thick Crusher dust (residue of coarse aggregate) / Quarry Rubbish / Murram / any locally available Non cohesive material having anti weeding property shall be laid evenly, rolling and compaction. However in price schedule, 100mm thk. PCC(1:4:8) is mentioned for a base layer. We trust that, the base layer is only 100mm thk. PCC(1:4:8) as per price schedule. Please confirm.	100mm thick PCC (1:4:8) with 20 / 40mm graded aggregate as per technical specification.
74	Vol-II, part-1, page: 3	Cl.no : 2.1.2	As per scope of work, the boundary wall is not included in the bidder scope, also item for the same is not covered in price schedule. We trust that, boundary wall along with main gate is not in bidder scope. Please confirm. If, it is in bidder scope. Please add the item for the same in price schedule.	boundary wall not in Turnkey scope.
75	Volume - II, part - 1, Page 4	2.1.2 (t)	As per referred clause, store shed with open platform is in bidder scope. Please mention the size of store shed to be provided in the proposed substation, as the same is not mentioned in the tech spec., and also furnish the finishing schedule for the same, in order to estimate the civil quantities.	Please Adhere to the bid document
76	Schedule BOQ-3 (Civil part)	Sl.no : 70 & 71	It is mentioned in referred clause that, "Providing and supplying all labour material including borrowed / removal of earth for maintaining the FGL". We understand that, this item is inclusive for micro levelling, also the cut earth can be used for levelling (if it is suitable) instead of borrowed earth. Please confirm.	Please Adhere to the bid document
77	Volume - II, part - 1, Page 4	Cl.no : 2.1.2.s	As per referred clause, the site office for employer's staff is in Bidders scope. However in Price schedule there is no item for the same. Kindly add an item for the same in BPS and indicate the area requirement.	Please Adhere to the bid document

78	BPS- Fire Fighting System	Sl.no-395	As per fire fighting specification we need to consider jocjey pumps ,But same was missing in BOQ line item. Request to kindly include inline item or please confirm in which line item can we consdier.	Please Adhere to the bid document
79	BPS- Fire Fighting System	Sl.no-410	Air vessel capacity has be mentioned as 300mm dia and 1500mm long . We will be considering air vessel capacity of 3 M3 .Please confirm.	Please Adhere to the bid document
80	BPS- Fire Detection and alarm System	Sl.no-497	In general for FDA system we will be using 2Cx1.5 Sq.mm and 2C x 2.5Sq.mm cables only. Where as in sl.no-497 it has been mentioned 10 x 1..5 Sq.mm.Please clarify .	Please Adhere to the bid document
81	PART-III GCC	**Price Adjustment Basis** PRICE VARIATION FOR ACSR "ZEBRA" CONDUCTOR & PRICE VARIATION FOR ACSR "PANTHER" CONDUCTOR 1. The prices are variable based on the basic cost of E.C. grade Aluminium wire rods and High Tensile Galvanised Steel wire rods of size 3.18 mm as on 01.04.2018 and as defined in the succeeding paras. 2. The basic cost of E.C. Grade Aluminium wire rods shall be the average price of E.C. Grade Aluminium wire rods of four main producers of India namely NALCO, BALCO, HINDALCO and MALCO, ruling on 01.04.2018, as declared by Cable and Conductor Manufacturers' Association of India. 3 The basic cost of high tensile galvanized wire shall be the average	For Price Variation of ACSR Zebra & ACSR Panther Conductor, The base date of indices should be **"1st Working day of the month, one month prior to the due date of opening of techno commercial parts of the bids". Please confirm.** We understand that the same has been inadvertently wrongly mentioned as 01.04.2018 in the tender specifications. **Kindly correct the same.**	The Base date for PV will be **on first working day of the month, one month prior to the due date of opening of techno-commercial parts of bids for ACSR Moose & Zebra Conductor.**

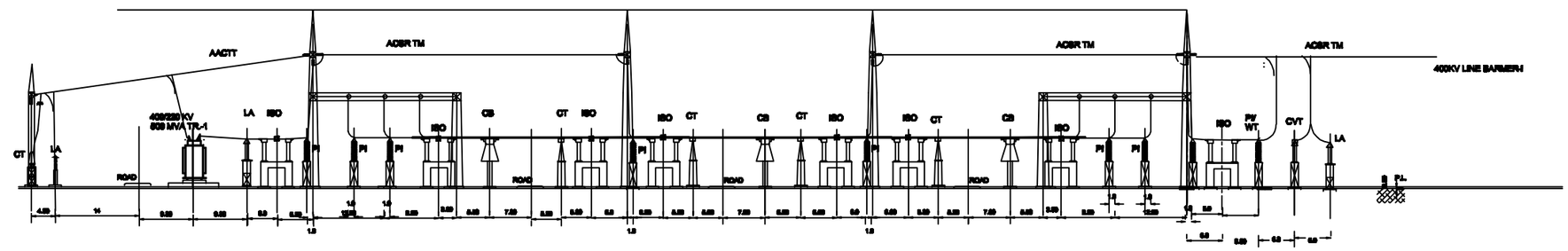
		price of high tensile galvanized steel wire of size 3.18 mm dia. (published for size 2.79 to 4.09 mm) on 01.04.2018 as declared by Cable and Conductor Manufacturer`s Association of India. 15./20. The base date for price variation shall be 01.04.2018, irrespective of date of opening of bid.		
82	PART-III GCC	Mode of payment	For all progressive payments, M/s RRVPNL is requested to consider mode of payment as Letter of credit also.	Please Adhere to the bid document
83	PART-VI BPF, ANNEXURE & SCHEDULES	2. Technical Experience **Turnkey means design, supply, erection (including civil works), testing and commissioning**	We understand that for Transmission Line Turnkey Experience requirement of 19 KM, "Design" does not include Transmission Line Tower Design. **Please confirm.**	Confirmed for qualifying requirement purpose. Remaining terms and conditions in respect of "Design of transmission line towers" shall be as per Vol-II (Lines) of bid document



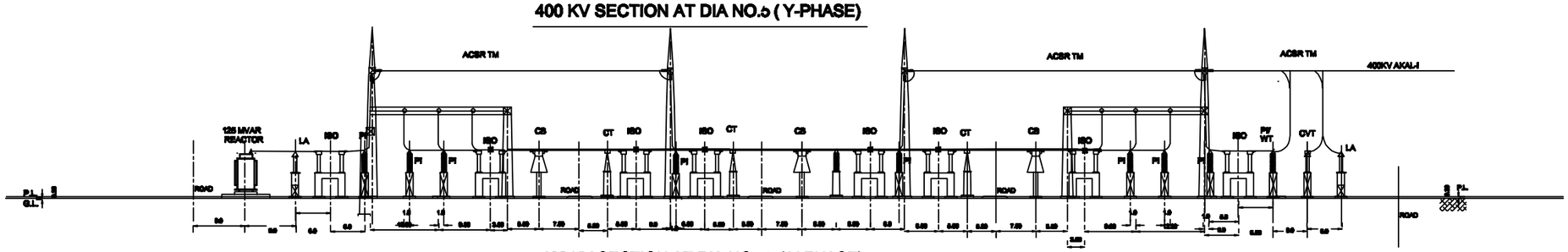
400 KV SECTION Y-PHASE)



400 KV SECTION AT DIA NO. 6 (Y-PHASE)



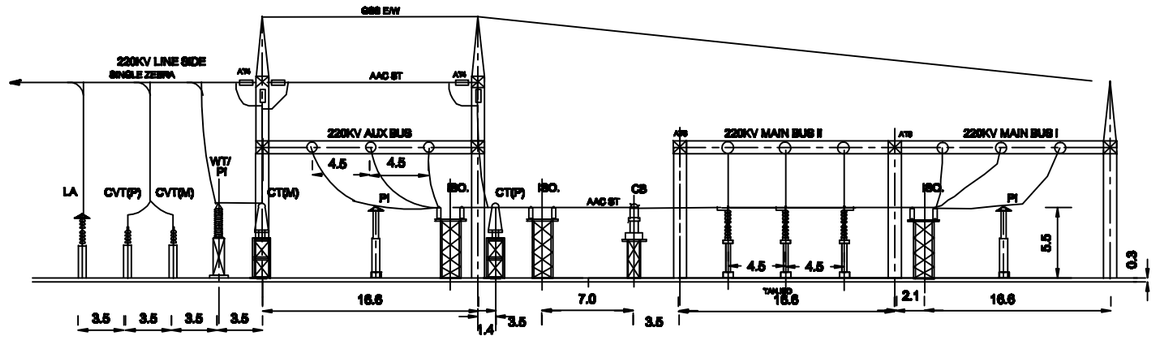
400 KV SECTION AT DIA NO.5 (Y-PHASE)



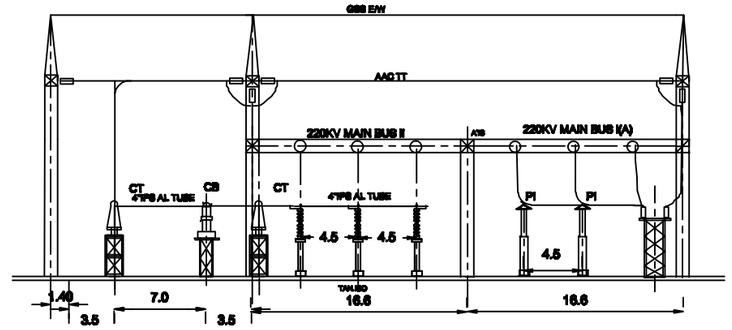
400 KV SECTION AT DIA NO. 4 (Y-PHASE)

FOR TENDER PURPOSE ONLY

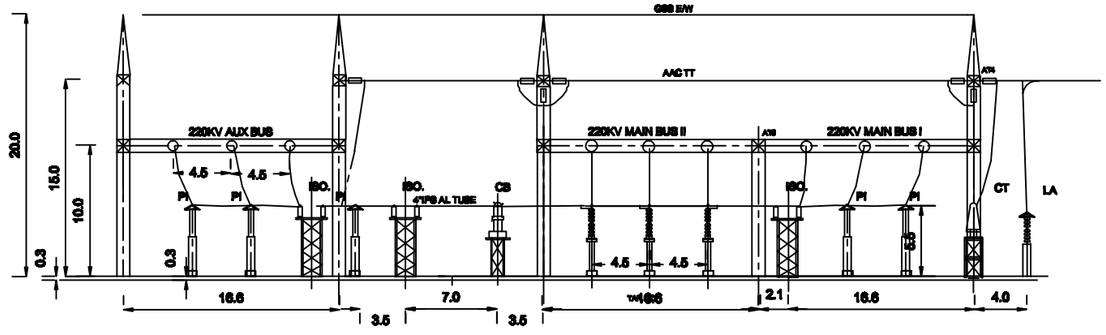
400 KV SIDE SECTION LAYOUT OF .



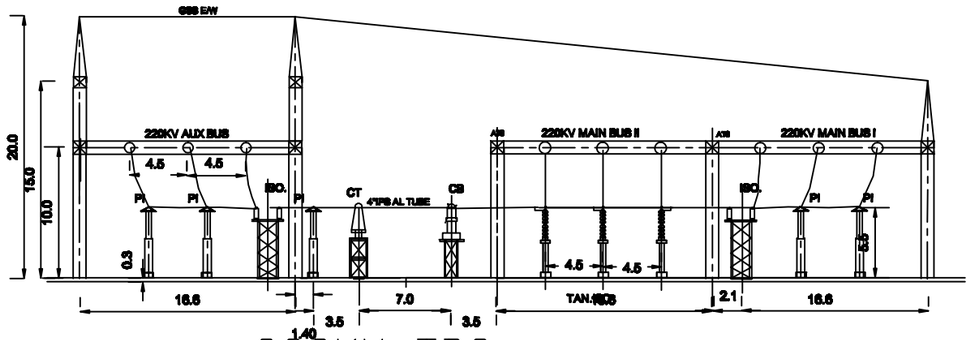
220KV FEEDERS



220KV BUS COUPLERS '



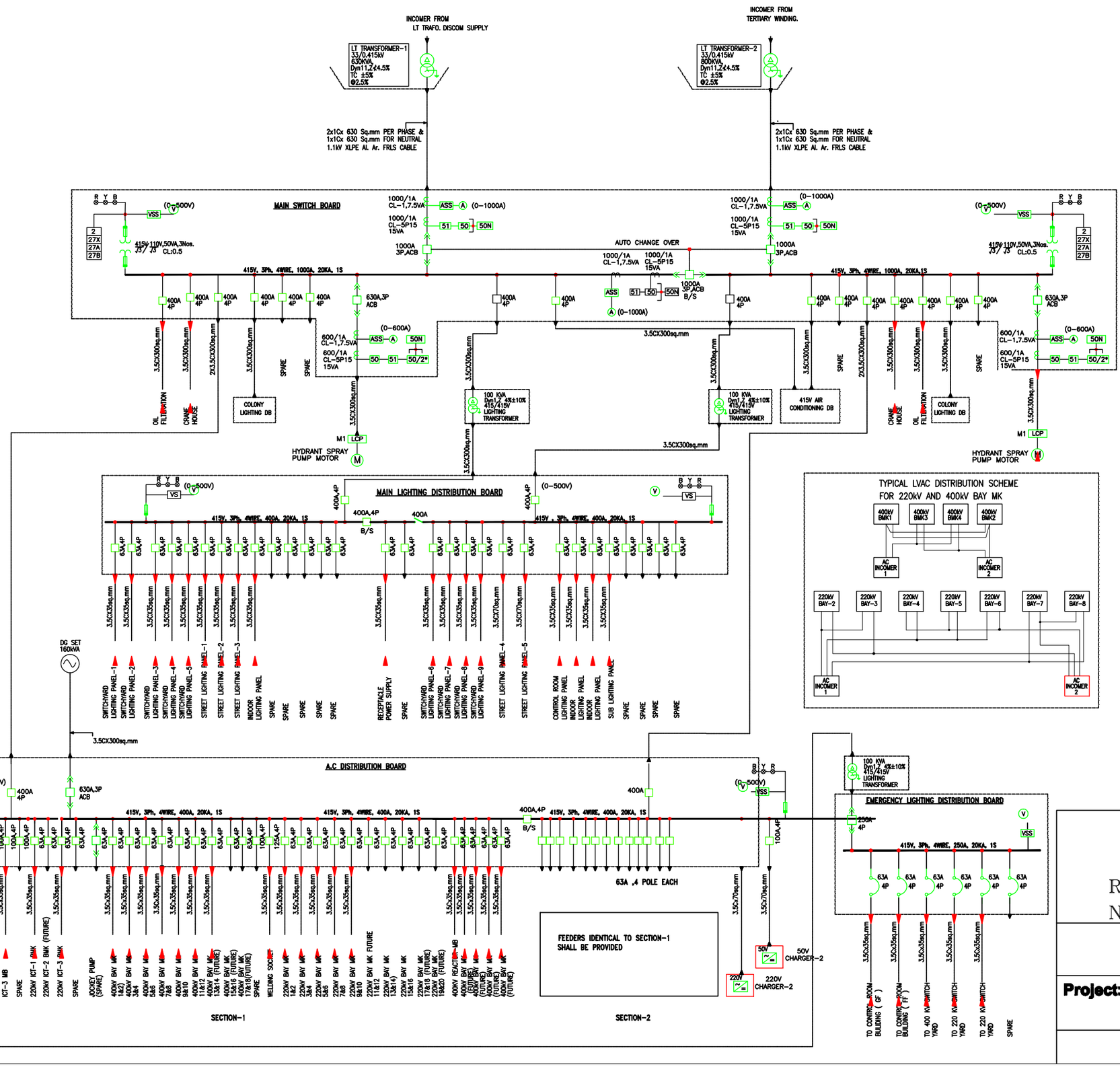
220KV I/C-



220KV TBC

FOR TENDER PURPOSE ONLY

400 KV SIDE SECTION LAYOUT



LEGEND :–

50N : INSTANTANEOUS EARTHFAULT RELAY
50 : INSTANTANEOUS OVERCURRENT RELAY
51 : DOUBLE POLE INVERSE DEFINITE MINIMUM TIME RELAY
50/2*:SINGLE POLE ADJUSTABLE TIME DELAY
RELAY FOR MOTOR OVERLOAD ALARM
2 : TIME DELAY PICKUP RELAY
27A/B:AC DOUBLE POLE INSTANTANEOUS UNDER VOLTAGE RELAY
27X : AUXILLIARY RELAY

DRAW OUT TYPE
MCCB

CONTROL FUSE

DRAW OUT TYPE
AIR CIRCUIT BREAKER

NON DRAW OUT TYPE
MCCB

NON DRAW OUT AIR BREAK SWITCH

VSS 4 POSITION VOLTMETER SELECTOR SWITCH

VS 6 POSITION VOLTMETER SELECTOR SWITCH

LT TRANSFORMER 33/0.415kv,630KVA,Dyn11,Z=4.5%,
TC ±5% @2.5%

CURRENT TRANSFORMER 1000/1A CL:1,7.5VA

VOLTAGE TRANSFORMER 415/√3 ,110V/√3 CL:0.5

DG SET, 160KVA

NOTES :–

1. NO TWO AC SOURCE SHALL BE PARELLED AT ANY TIME.
2.(a).(i) 300 Sq.mm – XLPE ALUMINIUM ARMOURED FRLS CABLE.
(ii) 630 Sq.mm – XLPE ALUMINIUM ARMOURED FRLS CABLE.
(b).(i) 10 Sq.mm – PVC ALUMINIUM ARMOURED FRLS CABLE.
(ii) 35 Sq.mm – PVC ALUMINIUM ARMOURED FRLS CABLE.
(iii) 70 Sq.mm – PVC ALUMINIUM ARMOURED FRLS CABLE.

RRVPNL REFERENCE DRAWING:–

1. SINGLE LINE DIAGRAM OF 400kV GRID SUB-STATION JAISALMER-2
DRAWING. No. RVPN/EHV/TN...../DRG-.....

FOR TENDER PURPOSE ONLY

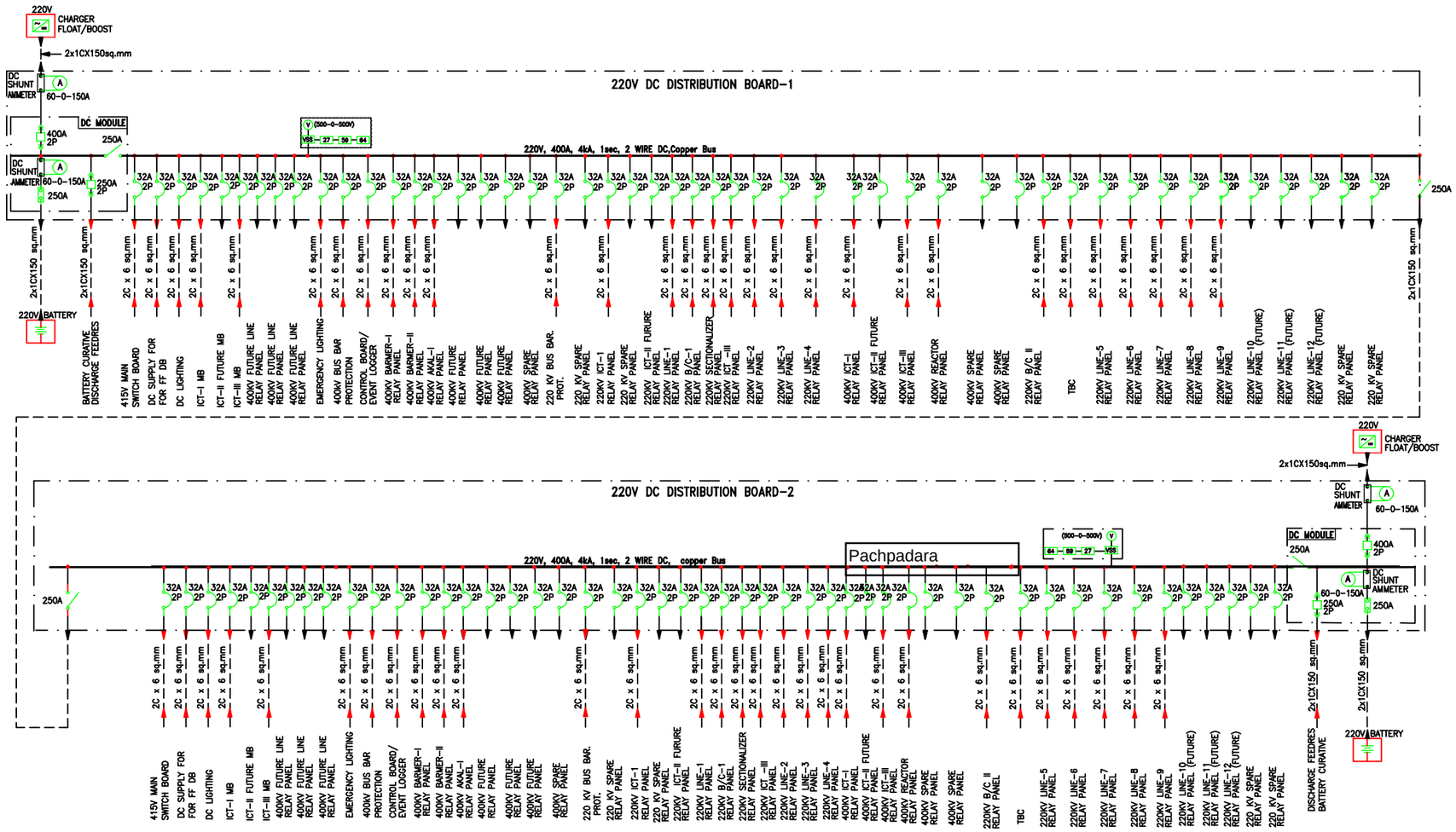
RAJASTHAN RAJYA VIDYUT PRASARAN NIGAM LTD.

Description:- AC POWER DISTRIBUTION SINGLE LINE DIAGRAM

Project:- 400KV GRID SUB-STATION

Pachpadara

DRG. NO. RVPN/KFW/KCB-I/DRG-27(A)



LEGEND :-

- 27 : DC INSTANTANEOUS UNDER VOLTAGE RELAY
- 59 : DC INSTANTANEOUS OVER VOLTAGE RELAY
- 64 : EARTH LEAKAGE RELAY
- DRAW OUT TYPE MCCB
- BATTERY LINKS/FUSES
- NON DRAW OUT TYPE MCB (2 POLE)
- NON DRAW OUT AIR BREAK SWITCH
- VSS VOLTMETER SELCTION SWITCH
- V VOLTMETER

RRVPNL REFERENCE DRAWING:-

1. SINGLE LINE DIAGRAM OF 400kV GRID SUB-STATION ATAJMER
   DRAWING. No. RVPN/EHV/TN...../DRG-.....

NOTES :-

1. FOR COMPLETE DESCRIPTION OF EACH TYPE OF MODULE PL REFER TECHNICAL SPECIFICATION.
2. 150sq.mm CABLES ARE PVC ALUMINIUM ARMOURED FRLS CABLE – EXCEPT FOR CABLE CONNECTING BATTERY AND DCDB. FOR BATTERY CONNECTION FLEXIBLE UNARMOURED CABLE TO BE USED.
3. 6sq.mm CABLES ARE PVC COPPER ARMOURED FRLS CABLE.

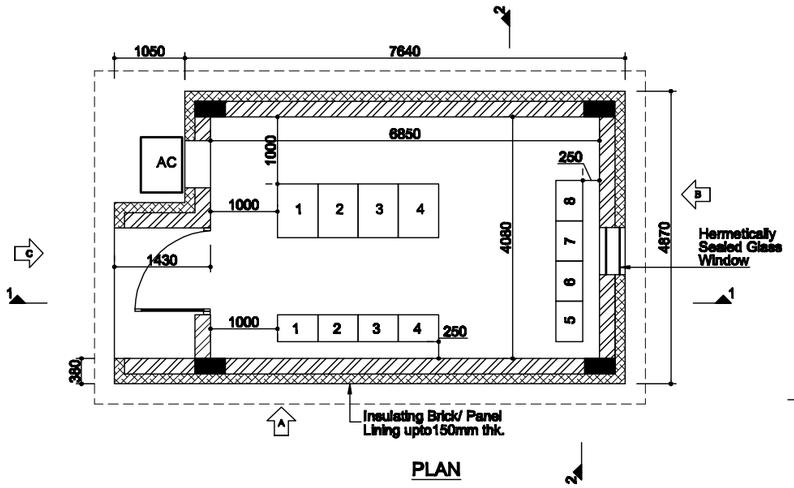
FOR TENDER PURPOSE ONLY

RAJASTHAN RAJYA VIDYUT PRASARAN NIGAM LTD.

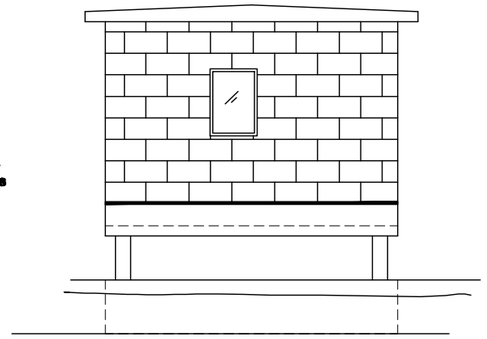
Description:- DC POWER DISTRIBUTION SINGLE LINE DIAGRAM

Project:- 400KV GRID SUB-STATION Pachpadra

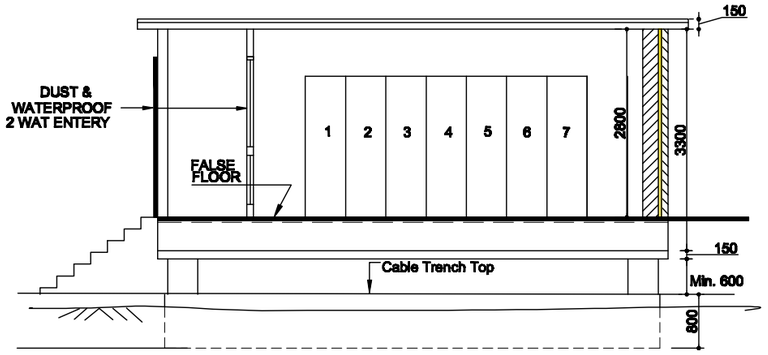
DRG. NO. RVPN/EHV/TN/400KV-SS/DB-SS(A)



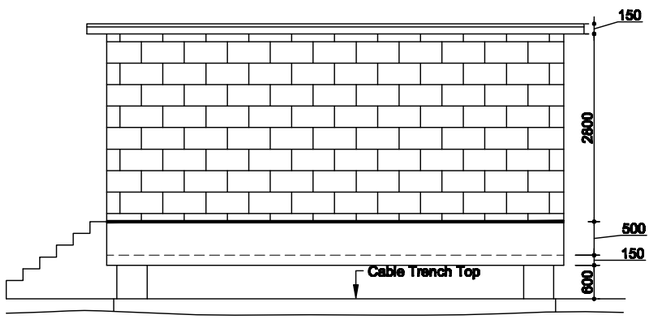
PLAN



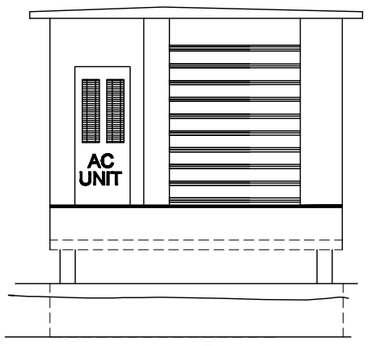
VIEW-B



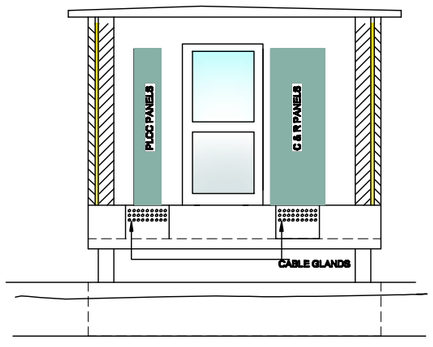
SEC:1-1



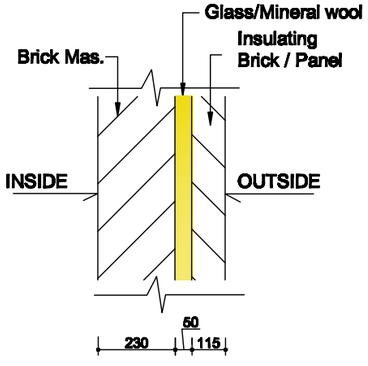
VIEW-A



VIEW-C



SEC:2-2



WALL SECTION

FOR TENDER PURPOSE ONLY

220 kV BAY LEVEL KIOSK

RVPN/CIVIL/DRG-4(B)

Annexure-III

ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE (Rs.100/-)
PROFORMA OF UNDERTAKING BY
THE PARENT COMPANY (PRINCIPALS / OR COLLOBORATOR)

To

The Superintending Engineer ( )
Rajasthan Rajya Vidyut Prasaran Nigam Ltd.,
Jaipur.

Specification No. FOR SUPPLY OF

_____

Dear Sir,

With reference to Clause 4**.0 of** Qualification Requirements, of bidding documents for Bid No.(TN- _____), for supply of _____(name of item) we the parent company /collaborators _____having registered office at _____(Principals or Collaborators) agree to furnish the following in favour of M/s _____ (bidder) having registered office at _____ who are having collaboration with us for manufacture & supply of _____(Name of item)

Jointly with the bidders, a legally enforceable undertaking to guarantee, design, manufacture quality, timely supply, performance and warranty obligations as specified in the contract.

Yours faithfully,

Witness

Annexure-IV

ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE (Rs.100/-)
PROFORMA OF JOINT UNDERTAKING BY THE

PARENT COMPANY (PRINCIPALS) WITH THE BIDDER

This deed of undertaking executed this _____ day of _____ by _____ having it's registered office at _____ (hereinafter called the 'Parent Company' which expression shall include its successors, administrator, executors and permitted assigns) and _____ having it's Head Office at _____, India (hereinafter called the 'Subsidiary') (Bidders which expression shall include its successors, administers, executors and permitted assigns) in favor of **Rajasthan Rajaya Vidyut Prasaran Nigam Ltd.** (Hereinafter called the "Purchaser").

a) WHEREAS the Purchaser invited Bids as per its Specification No. for the equipment _____ **at Jaipur** and whereas the bid documents stipulates that Manufacturer(s) who have recently established production line in India for goods/equipment of similar or higher voltage class with same operating principle **equipment** indicated in the schedule of requirements based on Technological support of a parent company or collaborator can also be considered provided the parent company (Principle) or collaborator meets qualifying requirements stipulated and furnish undertaking (jointly with the parent company as under).

AND WHEREAS _____ HAS submitted it's proposal to the Owner vide _____ based on the Association of the Parent Company & Subsidiary.

NOW THEREFORE THIS UNDERTAKING WITNESSED AS UNDER :

1. In consideration of the award of Contract by the Purchaser to the Supplier we the parent Company (Principals) and the Subsidiary do hereby declare and undertake that we shall be jointly and severally responsible and bound unto the **Rajasthan Rajya Vidyut Prasaran Nigam Ltd.** of the successful performance of the characteristics as specified in the contract to the satisfaction of the Owner.

2. In case of any breach of the Contract committed either by us and or by the Subsidiary, we the Parent Company (Principals) do hereby undertake, declare and confirm that we shall be fully responsible for successful performance of the contract and undertake to carry out all the obligations and responsibilities under the contract in order to discharge the Purchaser's obligations stipulated in the contract, we undertake to execute the work in its entirety and hold responsibility even in respect of the work entrusted by us to our subsidiary. We hereby indemnify the Purchaser that we will compensate the Purchaser if any loss occurred either due to default in executing the work by us or by our subsidiary.

3. Without in any way affecting the generality and total responsibility in terms of this Deed of undertaking, the Principle hereby agrees to depute their technical experts from time to time to the Subsidiary's Works/Purchaser project site as mutually considered necessary by the Purchaser/Subsidiary's and the PRINCIPALS to ensure proper design, manufacture, testing.

4. Successful performance of the equipment under the said Contract in accordance with Contract specifications and if necessary the principals shall advice the Subsidiary suitable measures to discharge the obligations under Contract.

5. This Deed of Undertaking shall be construed and interpreted in accordance with the laws of India and the Courts at **Jaipur, Rajasthan** shall have exclusive jurisdiction in all matters arising under this undertaking.

6. As a security, the parent company/ bidder shall apart from the contractor's performance Bank Guarantee, furnish an additional contract performance guarantee from its Bank in favour of the owner in a form acceptable to purchaser. The value of such guarantee shall be equivalent to ten percent (10%) of price of contract value and it shall be part of guarantee towards the faithful performance / compliance of this deed of undertaking in terms of the contract. The guarantee shall be unconditional, irrevocable and valid for the entire period of the contract, namely till the end of the warranty period (name of the equipment / material) under the contract. The bank guarantee amount shall be payable to the owner on demand without any reservation or demur.

7. We the Parent Company (Principals) and the Subsidiary agree that this undertaking shall be irrevocable and shall form an integral part of the Contract and further agree that this undertaking shall continue to be enforceable till the successful completion of the Contract and Owner discharges it. It shall become operative from the effective date of the Contract.

8. We, the principals will be fully responsible for the quality of all Equipment/Components manufactured at it's works or at it's vendor's works and if necessary, their repairs or replacement for successful performance of the Contract in terms of the Contract.

IN WITNESS WHEREOF, the Parent Company (Principals) and the Subsidiary through their Authorized representatives, have executed these present and affixed Common Seals of their respective Companies, on the day, month, and year first mentioned above.

WITNESS :

(PARENT COMPANY)

…… ……..
(Signature) (Signature)

……. ……...

(Name) (Name)

…….
(Official Address) Common Seal of Company

2. SUBSIDIARY)
……. ……..

(Signature) (Signature)

…… ……...
(Name) (Name)
……
(Official Address) Common Seal of Company

NOTE : This deed of joint undertaking duly certified by the company secretary shall be submitted along with bid. Further the deed of Joint undertaking should be attested by Notary Public of the place/ country of the respective executants or it should be duly registered with the Indian Embassy / High Commission in that country.

Annexure-V

ON NON-JUDICIAL STAMP PAPER OF APPROPRIATE VALUE (Rs.100/-)
PROFORMA OF JOINT UNDERTAKING BY THE COLLABORATOR/ASSOCIATE ALONG WITH THE BIDDER

THIS DEED OF UNDERTAKING executed this .....……..... day of...……..... Two thousand and ..... by ..... a Company incorporated under the laws of ..... and having its registered office at ..... (hereinafter called the "Collaborator"/"Associates" which expression shall include its successors, executors and permitted assigns) and .....…….. a company incorporated under the Companies Act, 1956 having its Registered office at ..... (hereinafter called the "Bidder"/"Contractor" which expression shall include its successors executors and permitted assigns) in favour of **Rajasthan Rajya Vidyut Prasaran Nigam Ltd.,** a company incorporated under the Section, having its registered Office at **Jaipur** (hereinafter called the "Owner" which expression shall include its successors, executors and assigns).

WHEREAS the Purchaser invited Bids as per its specification No.....) for the design, manufacture, shop testing transportation to site, unloading at site, storage, erection/testing/commissioning of (Name of the material)..... .....

AND WHEREAS Clause of Section, Qualifying Requirement of the bid document No. inter-alia stipulates that the Bidder along with its Collaborator/Associate must fulfill the qualifying requirements and be jointly and severally bound and responsible for the successful performance of the Contract in the event the Bid is accepted by the Owner resulting in a "Contract".

AND WHEREAS the Bidder has submitted its Bids to the Owner vide Proposal No..... dated..... based on the Collaboration/Association of the Collaborator/Associate.

NOW THEREFORE THIS UNDERTAKING WITNESSES as under :

1.0 In consideration of the award of Contract by the Owner to the Bidder hereinafter referred to as the "Contract" we, the Collaborator/Associate and the Bidder/ Contractor do hereby declare that we shall be jointly and severally bound unto the **Rajasthan Rajya Vidyut Prasaran Nigam Ltd.** for the successful performance of the Contract and shall be fully responsible for the design, manufacture, shop testing, transportation, unloading at site, storage, erection, testing and commissioning and successful performance of (Name of the material) .....in accordance with the Contract specifications.

2.0 In case of any breach of the Contract by the Contractor, we, the Collaborator/ Associate do hereby agree to be fully responsible for successful performance of the Contract and undertake to carry out all the obligations under the Contract in order to discharge Contractor's obligations stipulated in the Contract. Further, if the Owner suffers any loss or damage on account of any breach in the contract or non-performance of the complete equipment fully meeting the performance guaranteed as per Bid specifications in terms of the Contract, we the Collaborator/ Associate and the contractor jointly and severally undertake to pay such loss or damages to the Owner on the demand without any demur. This is without prejudice to any rights of the Owner against the Contractor under the contract and connected

documents/guarantees. It shall not be necessary or obligatory for the Owner to proceed against Collaborator/Associate before proceeding against or while dealing with the Contractor, nor any extension of time or any relaxation by the Owner to the Contractor shall prejudice any rights of the Owner under this deed of undertaking against the Collaborator/Associate or the Contractor.

3.0 Without in any way effecting the quality and total responsibility in terms of this Deed of undertaking, the Collaborator/Associate in particular hereby agrees to depute their technical experts from time to time to the Contractor's works/Owner's Project site as mutually considered necessary by the Owner, Contractor and the Collaborator/Associate to ensure proper design, manufacture, shop testing, transportation, unloading at site, Storage, erection testing and commissioning and successful performance of the equipment package in accordance with Contract Specifications and if necessary the Collaborator/Associate shall advice the Contractor suitable modifications of designs and implement necessary corrective measures to discharge the obligations under the contract.

4.0 This deed of undertaking shall be construed and interpreted in accordance with the laws of India and the courts in **Jaipur** shall have exclusive Jurisdiction in all matter arising under the undertaking.

5.0 As a security, the collaborators/bidder shall apart from the contractor’s performance Bank guarantee, furnish an additional contract performance guarantee from its Bank in favour of the owner in a form acceptable to purchaser. The value of such guarantee shall be equivalent to ten percent (10%) of price of contract value and it shall be part of guarantee towards the faithful performance / compliance of this deed of undertaking in terms of the contract. The guarantee shall be unconditional, irrevocable and valid for the entire period of the contract, namely till the end of the warranty period (Name of the equipment /material) under the contract. The bank guarantee amount shall be payable to the owner on demand without any reservation or demur.

6. We, the Collaborator/Associate and the Bidder/Contractor agree that this undertaking shall be irrevocable and shall form an integral part of the Contract and further agree that this undertaking shall continue to be enforceable till the Owner discharges it. It shall become operative from the effective date of contract.

IN WITNESS WHEREOF the Collaborator/Associate and the Bidder/ Contractor have through their Authorised Representatives executed these presents and affixed Common Seals of their respective Companies, on the day, month and year first above mentioned.

For Collaborator/Associate

WITNESS

1.....
(Signature)

.....
(Name in Block Letters)

.....
(Office Address)

(Signature of Authorised Representative)

Name .....

Designation .....……...
Common Seal of Company....……

2 ……..... For Bidder/Contractor
(Signature)

…… ..... (Signature of Authorised
(Name in Block Letters) Representative)

...……..... Name
.....……..... .....
(Office Address)
. .....……..... .....

Common Seal of
The Company .....……

NOTE : This deed of joint undertaking duly certified by the company secretary shall be submitted alongwith bid. Further the deed of Joint undertaking should be attested by Notary Public of the place/ country of the respective executants or it should be duly registered with the Indian Embassy / High Commission in that country.

EXISTING CONTOUR SURVEY PLAN OF SUPER IMPOSE
FOR ELP :- 400 KV GSS AT NIWAI (PACHPADRA)
DIST:-BARMER (RAJ.)

AREA CALCULATION

AREA 197413.784 SQ. MTR.
AREA 19.74 HECTARE
AREA 121 BIGHA 16 Biswa

DIST:-AREA OF POINT A,B,C,D,E,F,G,H,I,J,K,L,M,N,O,P,Q,R,S,T,U,V,W,X -A

AVERAGE N.S.L. LEVEL
FOR COMPLETE YARD 103.350 MTR

Main Road Level 100.18 mtr
Minimum Level 99.129 mtr
Maximum Level 107.44 mtr

LILO OF 400KV RAJWEST -JODHPUR(KANKANI) LINE

400KV LINE(PUTURE)

LILO OF220KV BALOTRA-BORONADA LINE

TIN SHADE

WATER TANK

TBM R.L.107.57 M.ON WATER TANK

CART-WAY

BAAD

SPACE FOR LINE REACTORS

5.0 MT WIDE ROAD

SPACE FOR COLONY

POWER LINE

TBM R.L.100.18 M. ON POLE KUNDI

TBM R.L.100.27 M. ON POLE KUNDI

TBM R.L.100.00 M. PHED CHABUTRA

GRAM PANCHAYAT NIWAI LAND

MEGHA-HIGHWAY-28

P.H.E.D. WATER PIPE LINE

TO BIKANER

TO BALOTRA

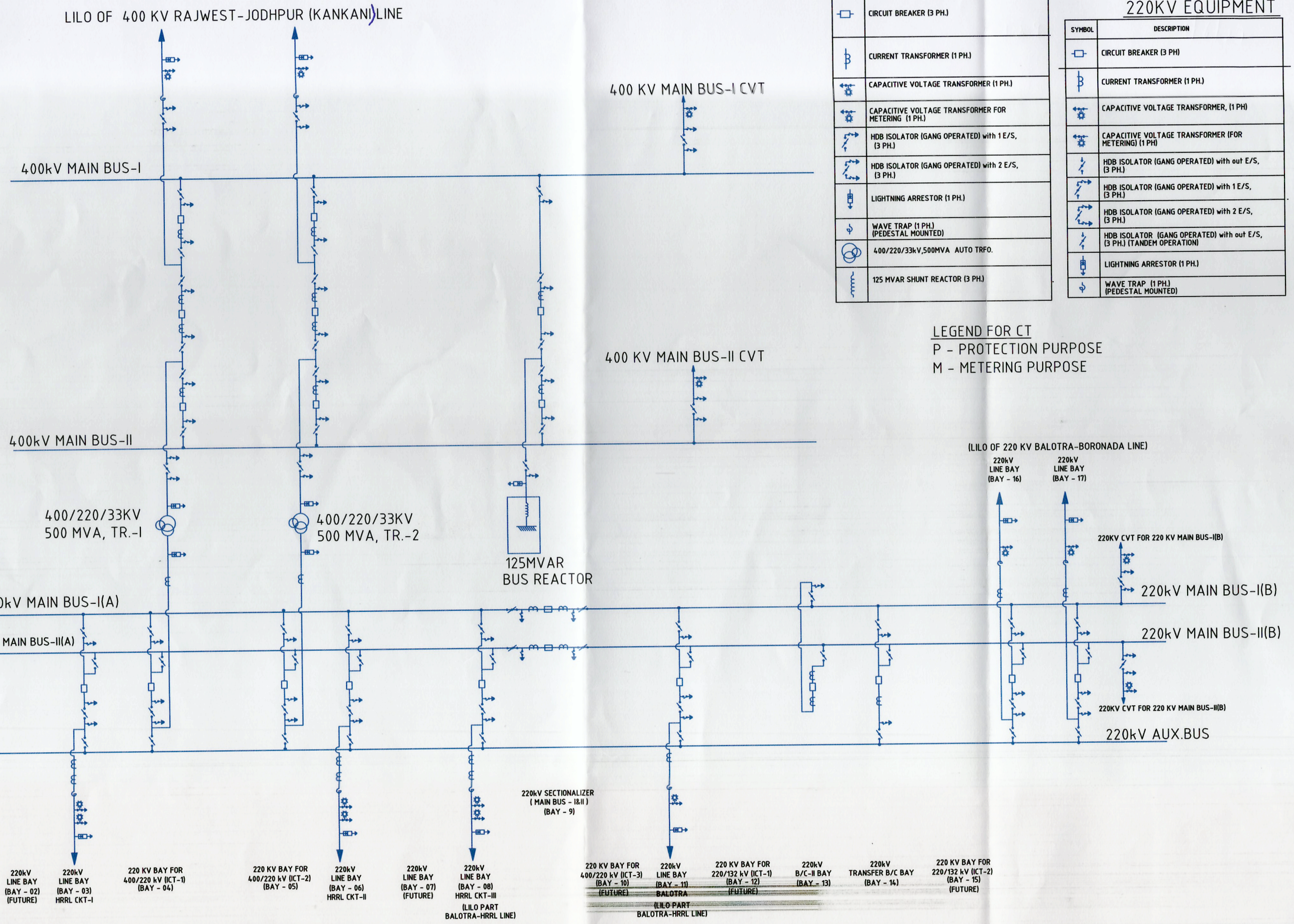
KM STONE 148

SURVEY BY SUNCITYASSOCIATE
ADDRESS : JODHPUR 342001

ALL DIMENSION ARE IN METRE
GRID INTERVAL 5.00 MTR X 5.00MTR
CONTOUR INTERVAL 0.20 MTR

JUNIOR ENGINEER	ASSISTANT ENGINEER	EXECUTIVE ENGINEER
RRVPNL - CIVIL	RRVPNL - CIVIL	RRVPNL - CIVIL
BARMER	BARMER	BARMER

SINGLE LINE DIAGRAM OF 400/220 KV GSS PACHPADRA (BARMER)



400KV EQUIPMENT

SYMBOL	DESCRIPTION
	CIRCUIT BREAKER (3 PH.)
	CURRENT TRANSFORMER (1 PH.)
	CAPACITIVE VOLTAGE TRANSFORMER (1 PH.)
	CAPACITIVE VOLTAGE TRANSFORMER FOR METERING (1 PH.)
	HDB ISOLATOR (GANG OPERATED) with 1 E/S, (3 PH.)
	HDB ISOLATOR (GANG OPERATED) with 2 E/S, (3 PH.)
	LIGHTNING ARRESTOR (1 PH.)
	WAVE TRAP (1 PH.) (PEDESTAL MOUNTED)
	400/220/33kV,500MVA AUTO TRFO.
	125 MVAR SHUNT REACTOR (3 PH.)

220KV EQUIPMENT

SYMBOL	DESCRIPTION
	CIRCUIT BREAKER (3 PH)
	CURRENT TRANSFORMER (1 PH.)
	CAPACITIVE VOLTAGE TRANSFORMER, (1 PH)
	CAPACITIVE VOLTAGE TRANSFORMER (FOR METERING) (1 PH)
	HDB ISOLATOR (GANG OPERATED) with out E/S, (3 PH.)
	HDB ISOLATOR (GANG OPERATED) with 1 E/S, (3 PH.)
	HDB ISOLATOR (GANG OPERATED) with 2 E/S, (3 PH.)
	HDB ISOLATOR (GANG OPERATED) with out E/S, (3 PH.) (TANDEM OPERATION)
	LIGHTNING ARRESTOR (1 PH.)
	WAVE TRAP (1 PH.) (PEDESTAL MOUNTED)

LEGEND FOR CT

P - PROTECTION PURPOSE

M - METERING PURPOSE

REPORT ON THE SOIL INVESTIGATIONS CARRIED OUT FOR PROPOSED 400 KV GSS NIWAI (PACHPADRA) DISTRICT BARMER

1.0 INTRODUCTION –

The present report embodies the findings of the field and laboratory investigations carried out by us to assess the nature of sub-soil strata for evaluating sub-soil parameters for foundation design of proposed civil structures of 400 KV GSS Niwai, Tehsil Pachpadra, district Barmer. The assignment for carrying out soil investigations was awarded to Hydro-Geosurvey Consultants Pvt. Ltd., Jodhpur by The Executive Engineer (Civil-Tr), RRVPNL, Barmer.

2.0 DETAILS OF SITE & ITS GEOLOGY -

The site of investigation is located near Village Niwai, Tehsil Pachpadra and has an undulating rural landscape.

The geology of the area is composed of a very thin alluvial cover comprising fine to coarse grained sediments followed by Volcanics at depth.

The depth to water ranges from 10-20metres below land surface. The Alluvium forms the principal source of groundwater in the area and is saline in quality. The groundwater occurs under water table conditions.

3.0 FIELD INVESTIGATIONS –

1. The testing equipment and personnel for conducting the requisite field investigations were mobilized to the site.
2. Three locations for borehole sampling and SPT were shown by the Engineer In-charge.
3. Standard penetration tests were attempted at all three locations but owing to the refusal strata (hard murram/calcareous gravel) occurring at less than 1 meters depth, N value of 50 is considered in calculation.

4.0 LABORATORY INVESTIGATIONS –

1. The following laboratory tests were conducted on selected soil samples recovered from various borehole locations: -

   a) Grain size analysis
   b) Liquid limit
   c) Plastic limit
   d) Triaxial / Direct shear test to determine c &ϕ parameters
   e) Dry unit weight of soil
   f) Borehole log
   g) Unconfined compressive strength test

2. The above laboratory tests were carried out as per relevant Indian Standards. The results of laboratory tests are in **Table-l and 2.**

5.0 TEST RESULTS AND INTERPRETATIONS –

1. The borehole log is attached as **Table-2.** The study of borehole log, laboratory test and other field test data reveal that boreholes could not be augured beyond 1 meter due to hard murram at very shallow.

2. Water table was not encountered in the boreholes/pits.

6.0 ANALYSIS OF FOUNDATION-

The **bearing capacity** of sub-soil strata has been computed for shear and settlement failure considerations as per IS 6403 – 1981 and IS – 1904 – 1986. The details of foundation analysis are presented as **Annexure-I.**

Depth(mt.) (bgl.)	BH-1 (Control Room)		BH-2 (132KV Yard)		BH-3 (Transformer)	
	ABC	SBC	ABC	SBC	ABC	SBC
0.5	Refusal	4.70	17.2	5.10	17.2	5.10
1.0	Refusal	10.28	Refusal	11.74	Reffusal	12.27

ABC: Allowable Bearing Capacity (By settlement) in t/m^2
SBC: Safe Bearing Capacity (By Shear Failure) in t/m^2

7.0 RECOMMENDATIONS:

In view of the field, laboratory test results and the analysis presented above, the following values of safe bearing capacity may be taken for design of foundation:

Borehole No.	Depth of foundation (meters)	Safe /Allowable Bearing Capacity (t/m^2)
BH-1	0.5	4.7
	1.0	10.3
BH-2	0.5	5.1
	1.0	11.7
BH-3	0.5	5.1
	1.0	12.3

The bearing capacity will depend on the weathering condition of the underlying murram which is likely to increase with depth thus the foundation may be placed at any depth below 1.50 meters below ground level taking a allowable bearing capacity of 15 t/m^2.

The above recommendations are based on the field data collected from the excavated pit and the results of laboratory tests carried out on soil samples recovered. In case the actual sub-soil conditions / properties during excavations are found different from what has been reported above, the consultants are to be referred for further suggestions prior to taking up of actual construction at site.

For Hydro-Geosurvey Consultants Private Limited,

(Dr. Rajneesh Khilnani)
Executive Director

Table-1: Soil Properties

S. No.	Depth (m)	Particle size analysis			Dry unit weight (gm/cc)	Attenberg limit		Triaxial / Direct Shear Test	
		Gravel (> 4.75 mm)	Sand (4.75–0.075 mm)	Silt + clay (0.075–<0.002 mm)		LL	PL	Cohesion (kg/cm^2)	Angle of internal friction
BH-1									
1.	0.00-0.65	0.00	93.05	6.95	1.70	N/P	N/P	0	30.0
2.	0.70-1.15	62.64	28.42	8.94	1.72	N/P	N/P	0	33.0
BH-2									
1.	0.00-0.56	0.00	94.02	5.98	1.70	N/P	N/P	0	31.0
2.	0.60-1.25	64.80	26.05	9.15	1.73	N/P	N/P	0	34.5
BH-3									
1.	0-0.72	0.00	93.53	6.47	1.70	N/P	N/P	0	31.0
2.	0.72-1.20	58.34	31.55	10.11	1.73	N/P	N/P	0	35.0

Table-2: Soil description and SPT values

S. No.	Sample type	Depth (m) (SPT depth)	SPT `N' Value	Soil description
BH-1				
1.	DS-1	0.00-0.65 **(0.50)** 0.65-1.15	**50 Refusal**	Fine to medium sand upto 0.65m followed by Semi-consolidated calcareous kankar/urram with some sand and silt.
BH-2				
2.	DS-2	0.00-0.56 **(0.50)** 0.56-1.25	**16 Refusal**	Fine to medium sand upto 0.56m followed by Semi-consolidated calcareous kankar/urram with some sand and silt.
BH-3				
3.	DS-5	0.00-0.72 **(0.50)** 0.72-1.20	**16 Refusal**	Fine to medium sand upto 0.72m followed by Semi-consolidated calcareous kankar/urram with some sand and silt.

BACKUP CALCULATIONS : BH-1 **Annexure-I**

(As per IS 6403 and IS – 1904 – 1986.)

Allowable Bearing Pressure based on Settlement Criteria :

(for permissible settlement of 25 mm.)

Corrected N'=0.77Log(200/λD)N

Qnu=5.54(N'-3)(B+0.3/2B)(B+0.3/2B)W*25/40

D	B	λ	N	Corr. N	Qnu	Qs
0.5	1.5	1.7	50	91.30703	55.03735	55.89
1	1.5	1.72	Refusal			

Safe bearing capacity based on shear failure criteria :

Qnu=2/3cN'cScDcIc+λD(N'q-1)SqDqIq+0.5λBN'rSrDrIr

First Term=2/3cN'cScDcIc

D	B	c	N'c	Sc	Dc	Ic	I Term
0.5	1.5	0	15.87079	1	1.097094	1.00	0
1	1.5	0	18.56067	1	1.203018	1.00	0

Second Term = λD(N'q-1)SqDqIq

D	B	λ	N'q-1	Sq	Dq	Iq	II Term
0.5	1.5	1.7	6.108668	1	1.048547	1.00	5.4444
1	1.5	1.72	8.035628	1	1.101509	1.00	15.224

Third Term = 0.5λBN'rSrDrIrW

D	B	λ	Nλ	Sr	Dr	Ir	III Term
0.5	1.5	1.7	6.242056	1	1.048547	1.00	4.1725
1	1.5	1.72	8.689617	1	1.101509	1.00	6.1737

The safe bearing capacity (Qs) :

Safety factor = 2.5

F	D	B	I Term	II Term	III Term	Qnu	Qnsc	Qs
2.5	0.5	1.5	0	5.444443	4.172495	9.62	3.8468	4.70
2.5	1	1.5	0	15.22426	6.17374	21.40	8.5592	10.28

BACKUP CALCULATIONS : BH-2
(As per IS 6403 and IS – 1904 – 1986.)

Allowable Bearing Pressure based on Settlement Criteria :
(for permissible settlement of 25 mm.)

Corrected N'=0.77Log(200/λD)N

Qnu=5.54(N'-3)(B+0.3/2B)(B+0.3/2B)W*25/40

D	B	λ	N	Corr. N	Qnu	Qs
0.5	1.5	1.7	16	29.21825	16.34052	17.19
1	1.5	1.73	Refusal			

Safe bearing capacity based on shear failure criteria :

Qnu=2/3cN'cScDcIc+λD(N'q-1)SqDqIq+0.5λBN'rSrDrIr

First Term=2/3cN'cScDcIc

D	B	c	N'c	Sc	Dc	Ic	I Term
0.5	1.5	0	16.69755	1	1.098521	1.00	0
1	1.5	0	20.17384	1	1.207754	1.00	0

Second Term = λD(N'q-1)SqDqIq

D	B	λ	N'q-1	Sq	Dq	Iq	II Term
0.5	1.5	1.7	6.6886	1	1.049261	1.00	5.9654
1	1.5	1.73	9.243397	1	1.103877	1.00	17.652

Third Term = 0.5λBN'rSrDrIrW

D	B	λ	Nλ	Sr	Dr	Ir	III Term
0.5	1.5	1.7	6.96085	1	1.049261	1.00	4.6561
1	1.5	1.73	10.30316	1	1.103877	1.00	7.3785

The safe bearing capacity (Qs) :
Safety factor = 2.5

F	D	B	I Term	II Term	III Term	Qnu	Qnsc	Qs
2.5	0.5	1.5	0	5.965372	4.656138	10.62	4.2486	5.10
2.5	1	1.5	0	17.65218	7.378511	25.03	10.012	11.74

BACKUP CALCULATIONS : BH-3
(As per IS 6403 and IS – 1904 – 1986.)

Allowable Bearing Pressure based on Settlement Criteria :
(for permissible settlement of 25 mm.)

Corrected N'=0.77Log(200/λD)N

Qnu=5.54(N'-3)(B+0.3/2B)(B+0.3/2B)W*25/40

D	B	λ	N	Corr. N	Qnu	Qs
0.5	1.5	1.7	16	29.21825	16.34052	17.19
1	1.5	1.73	Refusal			

Safe bearing capacity based on shear failure criteria :

Qnu=2/3cN'cScDcIc+λD(N'q-1)SqDqIq+0.5λBN'rSrDrIr

First Term=2/3cN'cScDcIc

D	B	c	N'c	Sc	Dc	Ic	I Term
0.5	1.5	0	16.69755	1	1.098521	1.00	0
1	1.5	0	20.75916	1	1.209386	1.00	0

Second Term = λD(N'q-1)SqDqIq

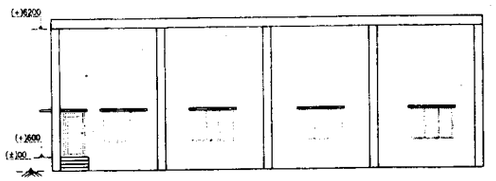
D	B	λ	N'q-1	Sq	Dq	Iq	II Term
0.5	1.5	1.7	6.6886	1	1.049261	1.00	5.9654
1	1.5	1.73	9.690479	1	1.104693	1.00	18.52

Third Term = 0.5λBN'rSrDrIrW

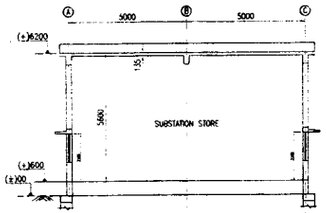
D	B	λ	Nλ	Sr	Dr	Ir	III Term
0.5	1.5	1.7	6.96085	1	1.049261	1.00	4.6561
1	1.5	1.73	10.91435	1	1.104693	1.00	7.822

The safe bearing capacity (Qs) :
Safety factor = 2.5

F	D	B	I Term	II Term	III Term	Qnu	Qnsc	Qs
2.5	0.5	1.5	0	5.965372	4.656138	10.62	4.2486	5.10
2.5	1	1.5	0	18.51965	7.821981	26.34	10.537	12.27



VIEW FROM C



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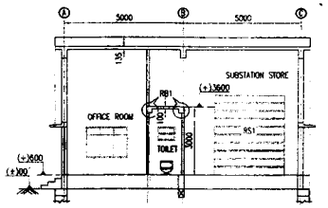

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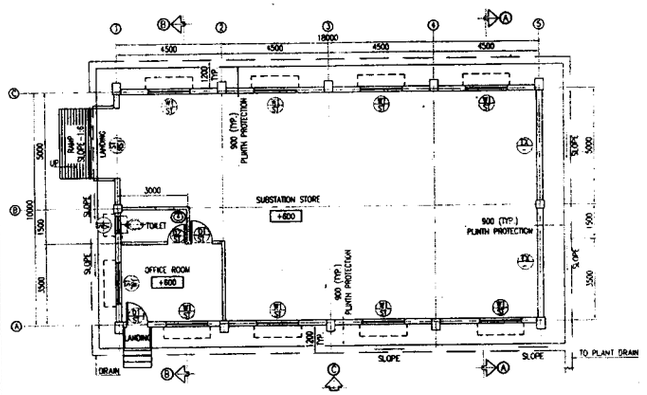
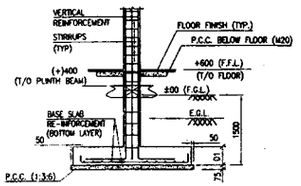
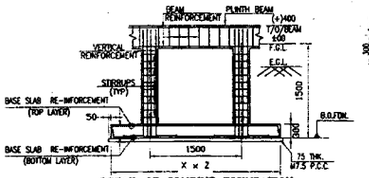


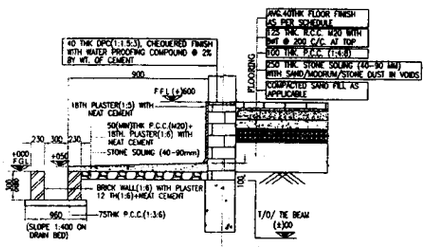
SUBSTATION BUILDING PLAN AT +600 LEV.



DETAIL OF FOUNDATION



DETAIL OF COMBINE FOUNDATION
SCALE-1:50



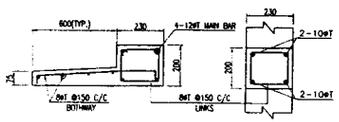
TYP. FLOORING & PLINTH PROTECTION WITH DRAIN

SCHEDULE OF DOOR & WINDOW

SR. NO.	ITEM MARK	MASONARY OPENING WIDTH	MASONARY OPENING HEIGHT	LEVELS SILL	LEVELS LINTEL BOTTOM	NOS.	LOCATION	DESCRIPTION
1.	D1	1000	2100	-	+2700	2	GF	STEEL DOOR FRAME WITH GLAZED DOOR SHUTTER
2.	D2	750	2100	-	+2700	1	GF	STEEL DOOR FRAME WITH GLAZED DOOR SHUTTER
3.	W1	1800	1350	-	+2700	8	GF	ALUMINIUM GLAZED WINDOW PARTLY FIXED PARTLY OPENABLE INCLUDING MS GRILL 19Kg/ Sq.M
4.	V1	750	600	-	+2700	1	GF	STEEL VENTILATOR
5.	RS1	3000	3500	-	+4100	1	GF	MANUALLY OPERATED STEEL ROLLING SHUTTER
6.	EF	450ø		-	AT BOTTOM OF ROOF BEAM	2	GF	OPENING FOR EXHAUST FAN

SCHEDULE OF ISOLATED FOOTINGS

FND. TYPE	FOUNDATION LOCATION	FOUNDATION SIZE △X × △Z	BASE DEPTH D1	REINFORCEMENT X-Direction	REINFORCEMENT Z-Direction
F1	C-1,C-5,A-1,A-5	1800 X 1800	300	12øT @ 200 C/C AT BOTTOM ONLY	12øT @ 200 C/C AT BOTTOM ONLY
F2	C-2, C-3, C-4 A-2, A-3, A-4	2300 X 2300	400	12øT @ 175 C/C AT BOTTOM ONLY	12øT @ 175 C/C AT BOTTOM ONLY
F3	B-1,B-5	1800 X 1800	300	12øT @ 200 C/C AT BOTTOM ONLY	12øT @ 200 C/C AT BOTTOM ONLY
CF1	B-2, B1-2	2000 x 2500	300	12øT @ 200 C/C AT BOTTOM 10øT @ 200 C/C AT TOP	12øT @ 200 C/C AT BOTTOM 10øT @ 150 C/C AT TOP



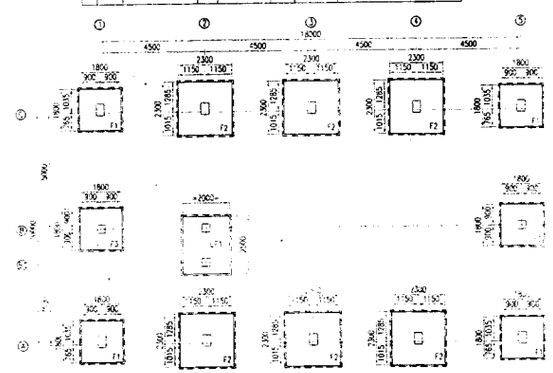
DETAILS OF LINTEL & CHAJJA

NOTES.

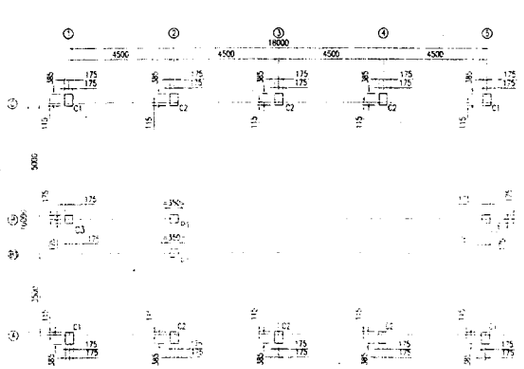
1. ALL DIMENSIONS & LEVELS ARE IN MM UNLESS NOTED OTHERWISE.
2. GRADE OF CONCRETE IS M-20
3. FOR GENERAL NOTES REFER TO MASTER DRAWINGS.
5. ANY AMBIGUITY IN THIS DRAWING IT SHOULD IMMEDIATELY BROUGHT TO THE NOTICE TO CONCERN AUTHORITY BEFORE COMMENCING THE WORK.
6. 5-16øT MEANS 5 NOS BAR OF 16mm DIA. T.M.T. BAR.
7. T.M.T. BAR REINFORCEMENT (YIELD STRESS fy =500 N/MM2) SHALL CONFORM TO IS:1786.
8. ALL HOOKS, BENDS, LAPS AND SPLICES SHALL BE AS PER IS:2502 UNLESS OTHERWISE INDICATED.
9. LAPS AND SPLICES OF REINFORCEMENT TO SUIT AVAILABLE LENGTH OF BARS SHALL BE MADE AS SHOWN ON THE DRAWINGS OR APPROVED BY THE ENGINEER AT SITE.
10. UNLESS NOTED OTHERWISE, THE LAP/ANCHORAGE LENGTH OF BARS OF DIAMETER 'D' SHALL BE 50D
11. CLEAR COVER FOR FOUNDATION=50mm, COLUMN=40mm, BEAM=25mm AND SLAB=20mm.
12. LAPPING OF BARS SHALL BE SUITABLY STAGGERED AND IN NO CASE MORE THAN 50% BARS SHALL BE LAPPED AT ANY SECTION.
13. LAPPING OF BARS FOR BEAM AND SLAB SHALL BE AVOIDED IN THE MAXIMUM TENSION ZONES.
14. REINFORCEMENT SHALL BE SUITABLY ADJUSTED AT SITE TO CLEAR POCKETS, BOLTS, OPENINGS, CUTOUTS ETC AS APPROVED BY THE ENGINEER IN CHARGE.

SPECIFICATION:

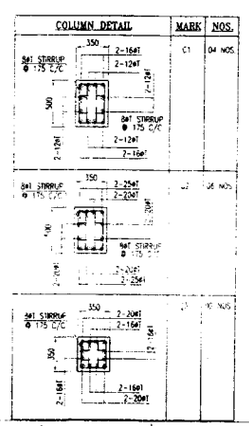
1. ALL CONCRETE WORK SHALL BE AS PER IS:456 WITH MINIMUM CEMENT CONTENT AND WATER : CEMENT RATIO AS INDICATED IN THE SPECIFICATION OR DRAWINGS.
2. ALL STRUCTURAL REINFORCED CONCRETE WORK SHALL BE WITH DESIGN MIX CONCRETE OF GRADE AS MENTIONED IN THE RELEVANT DRAWING.
3. UNLESS OTHERWISE SPECIFIED PLAIN CONCRETE WORK SHALL BE OF THE FOLLOWING GRADES OF NOMINAL MIX CONCRETE:
   a) 1:4:8 FOR FILLING CONCRETE UNDER FOUNDATION (WITH MAXIMUM AGGREGATE SIZE OF 40 MM.)
   b) 1:3:6 FOR PLINTH PROTECTION AND AS LEAN CONCRETE BELOW FOUNDATIONS, PITS, TRENCHES ETC.
4. a) T.M.T. BARS SHALL BE SHOWN AS T OT TOR OR ₹ OR øT
   b) BARS INDICATED IN PLAN THUS (— — — — —) TOP BARS.
   c) BARS INDICATED IN PLAN THUS (————————) BOTTOM BARS.
   d) LEVEL INDICATED THUS LEVEL SIGN LEVEL DIGIT TOP OF CONCRETE.
5. ROOF TREATMENT SHOULD BE DONE AS PER SPECIFICATION AND IF NOT MENTIONED IN SPECIFICATION THEN AS PER RELEVANT INDIAN STANDARD CODE OF PRACTICE.



FOUNDATION LAYOUT PLAN FOR SUBSTATION STORE



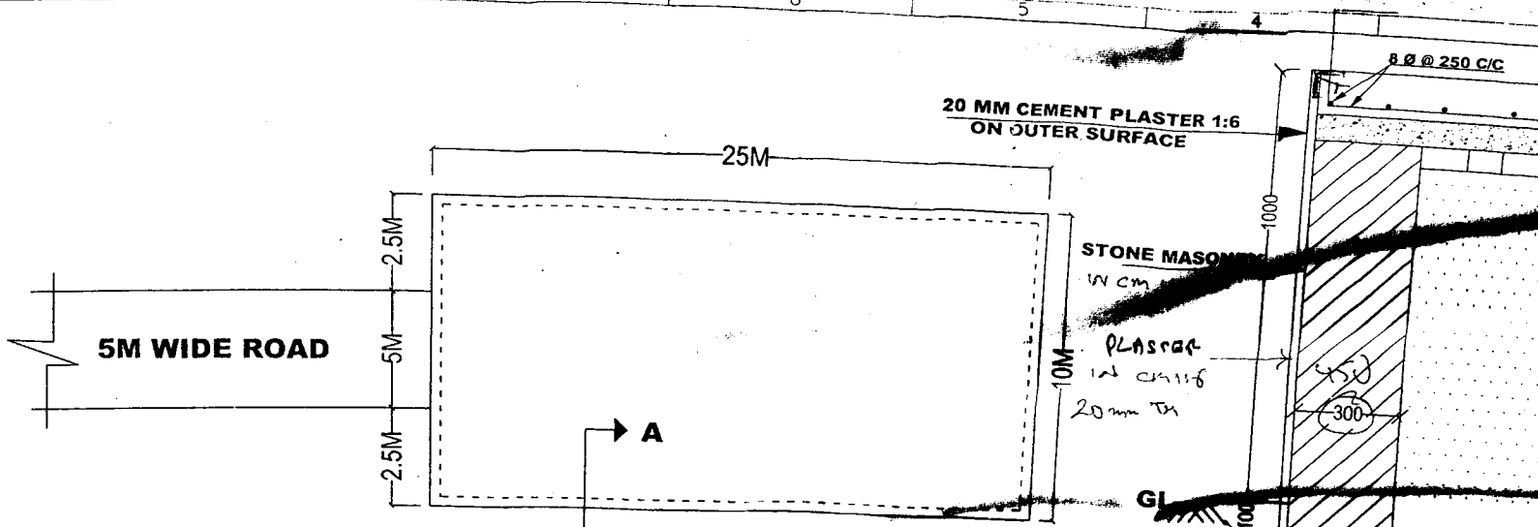
COLUMN LAYOUT PLAN FOR SUBSTATION STORE

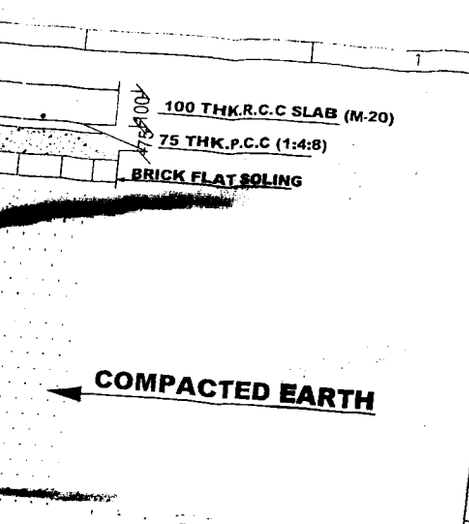


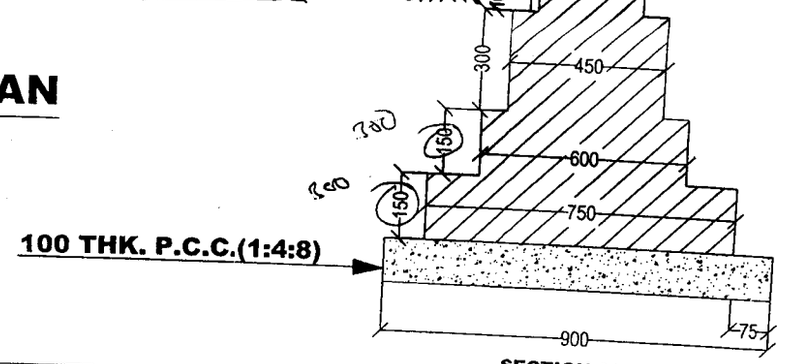
Tender purpose drawing.

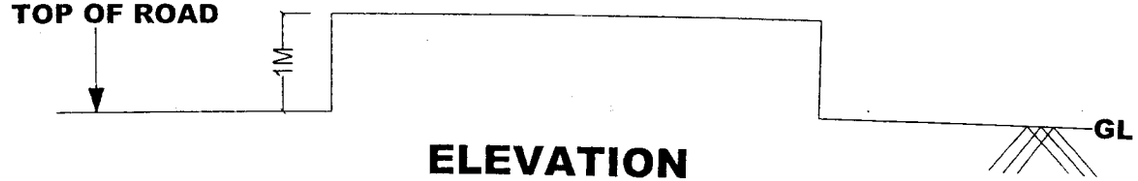
REV.	DESCRIPTION	PREP.	CHKD.	APPD.	DATE
1	FIRST SUBMISSION	P.M.	A.D.	A.D.	

CUSTOMER	RAJ RAJYA VIDYUT PRASARAN NIGAM LTD
NCA NO.	
PROJECT	
SUBSTATION	
DRG TITLE	GENERAL ARRANGEMENT AND R.C.C. DETAIL OF SUBSTATION STORE BUILDING
DRG NO	0726JO JODH SUBS SWYD C STORE-001
FILE	SCALE | JOB NO 0726JO | SHEET 1 OF 1 | REV - 0









NOTES:

1. ALL DIMENSIONS/LEVELS IN MM. UNLESS NOTED.
2. ALL RCC OF GR.M20 TO IS:456 & REINFORCEMENT OF GR. Fe 500 TO IS:1786.
3. CLEAR COVER TO MAIN REINFORCEMENT:- FOR SLAB=15mm
4. LAPS(50XØ),IF PROVIDED IN BARS,SHALL NOT BE MORE THAN 50% AT SAME SECTION.LAP/ANCHORAGE HOOKS/SPLICES AS PER IS:456 & 2502.

Tender Purpose drawing

REV	DESCRIPTION	PREP.	CHKD.	APPD.	DATE
0	FIRST SUBMISSION	P.M	A.D.	A.D	12-05-17
		SIGN			

CUSTOMER	RAJ.RAJYA VIDYUT PRASARAN NIGAM LTD
NOA NO.	
PROJECT	
SUBSTATION	
DRG. TITLE	OPEN PLATFORM DETAIL
DRG. NO.	0726JO JODH SUBS SWYD C OP 001
FILE	SCALE A JOB NO: 0726JO SHEET 1 OF 1 REV - 0

TECHNO ELECTRIC ENGINEERING CONSULTANTS KOLKATA

FINAL ELP OF 400/220 KVGSS PACHPADRA(BARMER)