

Clarification I**Design, Supply, Installation, Integration, Testing and Commissioning of Substation Automation System (SAS) for Existing Grid Substations in Kathmandu Valley**

S. No.	Volume/Section	Description	Bidder's Query	Employer's reply to the Query	Remarks
1			A) List of Items, Schedule of Requirements, Scope of Work, Terms of Reference, Bill of Materials required. B) Soft Copy of the Tender Document C) Information about the Tendering Procedure and Guidelines	Refer to go through the documents as posted in: https://nea.org.np/tender_prequalification	This is the official website of NEA
2			Names of countries that will be eligible to participate in this tender	Refer Vol I Section 5	
3			Estimated Budget	Cannot be disclosed	
4			Extension of Bidding Deadline Any Addendum or Pre Bid meeting Minutes	If there is any addendum, this shall be officially notified via national newspaper and also posted on NEA's official website.	There will not be pre-bid meeting
5	Volume II, Chapter 1 – Project Specification Requirement	3.0 Scope. e. Construction of Master Control Center (MCC) in Baneshwor Substation for monitoring and controlling of all 132 kV /66 kV /33 kV /11 kV bays of 14 (fourteen) existing substations under Kathmandu Grid Division, NEA and 7 (seven) under-construction substations at Kathmandu Valley.	what is the difference between the 14 (fourteen) existing substations under Kathmandu Grid Division, NEA and 7 (seven) under-construction substations at Kathmandu Valley and 13 substations in section 1.1.2 (Associated substations)? And if they are different substations, what need we do for the 21 substations.	A) There should be the provision in MCC to monitor and control all existing (14 nos.) and forthcoming (7 nos.) Substations. B) Thirteen Substations as envisaged in Volume II, Section 1.1.2 are those substations which are under the scope of this tendering procedure. One substation at Teku is excluded.	Refer to see Volume II, Chapter 1 – Project Specification Requirement, 3.0 Scope
6	Volume I, Section 3 - Evaluation and Qualification Criteria. 2.4 Bidder's Experience 2.4.1 Contracts of Similar Size and Nature	Bidder shall be a manufacturer of SAS equipment (i.e. BCU, Gateway and Protection relays) and has experience in participation in at least one contract that has been successfully or substantially completed within the last 10 (Ten) years and that are similar to the proposed contract, where the value of the Bidder's participation exceeds US\$ 4.5 Million. The similarity of the Bidder's participation shall be based on the physical size, nature of works, complexity, methods, technology or other characteristics as described in Section 6 (Employer's Requirements).	If an EPC Contractor participate as JV with manufacturer of SAS equipment (i.e. BCU, Gateway and Protection relays)	Refer to see the Joint Venture Column of Compliance Requirements of Volume I, Section 3 - Evaluation and Qualification Criteria, 2.4 Bidder's Experience 2.4.1 Contracts of Similar Size and Nature	



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7			<p>A) What is the maximum limit of JV partner including lead partner allowed</p> <p>B) What is the formats of JV Agreement and Lead Partner Power of Attorney</p> <p>C) What is the Mode of Payment (if it is a lead partner account or any partner of JV or JV account or Escrow account)</p>	<p>A) Three J/V Partner</p> <p>B) No specific format. Please refer Vol 1, section 1, clause 4</p> <p>C) Refer Section 9, Appendix A</p>	<p>Refer to see:</p> <p>i) Volume I, Section 3 - Evaluation and Qualification Criteria, 2.3.3 Financial Resources</p> <p>ii) Volume I, Section I, Information to Bidder, 4 Eligible Bidders and 11 Documents Comprising the Bid</p> <p>iii) All transactions shall be in the name of JV.</p>
8			Since the AC/DC panel upgrading is not listed in the BOQ, could NEA kindly provide the current AC/DC panel MCB situation, such as drawing, close distance photos	To be decided during DDE	
9			Could NEA provide the layout drawing of every substation to evaluate the cable length and the earthing conductor amounts	Available indicative SLD and Layout are attached herewith. The drawing provided are for bidding purpose and for general information only, and the bidders are advised to visit site for detailed information	
10			Clause 3.1.1 Section h. NEA mentioned the XLPE cable is "temporary supply arrangement". Is that mean the cable mentioned above will be removed after the whole project finished? And we would also like to know the material requirement for this XLPE cable	The scope mentioned is for temporary bypassing of the DS such as to minimize the Shutdown time. The contractor is required to provide the cable for temporary use and shall take it back after completion of work.	
11			<p>Could NEA kindly provide all the communication situation of each substation to the LDC?</p> <p>Could NEA kindly provide the detailed information of protections not to be replaced in each substation, such as brand, type, communication supporting information?</p>	<p>All substation are connected through FO cables with LDC.</p> <p>The bidder is requested make the necessary site visit. No site visit will be arranged by NEA.</p>	
12			Could NEA kindly provide the detailed information of existing SAS systems not to be replaced in this project, such as brand, communication equipment applied, communication protocol supported?	Existing SAS is installed at Baneshwor Substation (ABB Make). Compatible with IEC 61850.	



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13			According to the recent site survey in Baneshwor substation, there are panels installed with two vacuum circuit breakers in each switch-gear panel, shall the bidder consider about upgrading these panels into two switch-gear panels for each?	11kV switchgear upgrading is not in the current scope. The upgrading is being carried out by different agency of NEA, bidder is required to facilitate the integration of new panel with MCC and ex network where required.	
14	Volume II, Chapter 1 – Project Specification Requirement	3.0 SCOPE g. Integration of all 132/66/11 kV Bays of all substations under present scope with the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc.	In view of ensuring maximum participation under competitive bidding, we hope NEA to remove the integrating with the existing SCADA of SIEMENS work, or you ask SIEMENS give all bidders a fixed price and we will let SIEMENS complete this work under the price who offered.	The scope requirement is integration of SAS system with LDC and MCC through the gateway. The bidder is required to provide necessary accessories as per requirement. The provision cannot be removed.	
15	Volume II, Chapter 2– General Technical Requirement, Central Control System (MCC) ☐	2. System Architecture	The PCS-9000 is shown on the Fig. 2.1 CCS system structure schemes, so please clarify the PCS-9000 manufactured by NR is Mandatory.	The system architecture shwon is indicative only, for tendering purpose. The bidder is required to provide similar system as required for successful operation of the system, complying the minimum requirment specified.	
16	Schedule No.1: Plant and Equipment including Mandatory Spares to be supplied from abroad	11 kV Indoor Switchgear Panels	There is no any specification and parameter for the 11 kV Indoor Switchgear Panels, so please supply that	Indoor panel is not in scope. Please delete entire Schedule 1, Part C, (7).	
17	Schedule No.1		Bidder need to supply Line Differential Relay, so please supply the specification of relay on the opposite substations, including the brand, model and version of the relay.	Please refer specification of Control and relay panel.	
18			Is there any shortlist for the Isolator and 11 kV Indoor Switchgear Panels.	No shortlisting for Isolators. Indoor switchgears are not in scope.	
19	Clause No: 3.1.1.F of PSR,	Integration of all 132 kV /66 kV /33 kV /11 kV Bays of all substations under present scope with MCC. All the bays shall be controllable from local substations as well as from remote MCC at Baneshwor substation.	NEA to confirm availability of Optical Fibre Link from Substation to MCC(Baneshwor Substation)	All substations are connected through FO cables with LDC.	
20	Clause No: 3.1.1.G of PSR,	Integration of all 132/66/11 kV Bays of all substations under present scope with the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc.	For Matatirtha Substation(NARI SAS) & Baneshwor(ABB Make) -NEA can directly ask Nari and ABB to integrate the SAS with Siemens Spectrum.	Baneshwor is already integrated with LDC. Matatirtha integration is in other project scope.	



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21	Clause No: 3.1.1.G of PSR,	Integration of all 132/66/11 kV Bays of all substations under present scope with the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc.	We shall provide the SCADA data till the substation gateway in IEC104 Protocol, further integration with Siemens Sinaut Spectrum will be in customer scope	The tender is invited under turnkey contract. The whole scope of work is under contractor scope.	
22	Volume 3: BOQ	BOQ of 13 Substations for Which SAS to be provided	During our site visit we understood many BOQ given in the bid is not matching the site BOQ. Requesting NEA to provide the exact BOQ for Replacing the CRP for Bays and also Quantities of Relays and Meters required for Retrofit	Please quote your price as per the BOQ.	
23	Volume 3: BOQ	BOQ of 13 Substations for Which SAS to be provided	During Site Visit we understood at few locations, replacement of old Protection CRP is already done, but the same is mentioned in the BID BOQ to Replace. For ex. In New Patan Substation as per BID BOQ: 66KV 3 Line + 2 Trafo has to be replaced, during site visit we could see new CRP panel with IED with 61850 is already replaced from Others.	Please quote your price as per the BOQ.	
24	Clause No: 3.1.1.D of PSR,	Retrofitting of existing Control & Relay Panels and Indoor Switchgear Panels including replacement of protection relays for main and backup protection as and where required and other accessories, metering and indication facilities for the substation & remote control stations along with associated equipment	Please provide a Separate BOQ for Retrofitting of Protection Relays for Main and Backup & Also Meters at all KV Levels.	This retrofitting is covered under the BOQ item, Substation Automation in both schedule 1 and 4a. The project requirement is outlined in the Volume II, Chapter 1, PSR, 1.3.1.d. The bidder is required to make necessary site visit, and quote their rates for retrofitted Protection relays, metering system, other SAS equipment as required, included in this item.	
25	Clause No: 5.1.2	Cyber-security: The cyber security features shall improve the overall quality of the system and improve the reliability and the availability of operations by securing the access of each device and providing an audit capability. The solution should be based on IEC62351, IEC62443-3-3, and NERC-CIP Vendors shall be certified for Bronze Level Practice Certification (IEC62443-2-4).	Please provide us the hardware & Software Requirement required for the project. We generally comply with IEC Standards for cyber security	The bidder is required to include all required software and hardware required for the cyber security, fully licensed for required number of users.	
26	Clause No: 3.1.1.D of PSR,	Retrofitting of existing Control & Relay Panels and Indoor Switchgear Panels including replacement of protection relays for main and backup protection as and where required and other accessories, metering and indication facilities for the substation & remote control stations along with associated equipment	Do we need to consider Existing Control cables and Power cables for retrofit or new cables to be considered	The existing control and power cables can be reused. Any additional cables required shall be provided by the bidder.	



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27	Genral	AVR Integration with SAS	Do we need to consider Integration of AVR with SAS. If yes few substation doesn't have AVR which is communicable in 61850, do we need to consider replacing of AVR in scope	Yes.	
28	General	SLD for all Substation	We request you to please share the SLD for all the sub-stations under this project.	The Bidders are advised to visit Substations site and acquaint themselves with the topography, infrastructure, etc. The available SLDs and Layout shall be provided. The cable trenches where required shall be constructed, in coordination with the employer. The new isolators are to replace the existing isolator, after modification of existing structure.	
29	General	Existing Layout Plan & section for all Substations.	We request you to please share the Existing Layout Plan & Section drawing for all sub-stations under this project.		
30	General	Cable route layout drawing/distance from existing substation to proposed Control, relay panel	Request you to please share the cable trench layout drawings		
31	General	Control room, relay room and battery room layout drawing	Request you to please share the control room building layout drawing.		
32	General	Control & Power cables laying	We understand that existing cable trenches shall be used to lay the cables , hence no seprate cable trenches/ cable trays required. Kindly confirm.		
33	Volume 2,clause No. 3.1.1 b.	Supply and replacement of 132 kV /66 kV/33 kV isolators as per the BPS, after modification of existing foundations and steel supporting structures.....	We understand that existing isolators to be replaced/retrofitted by using /retaining existing foundation & structure. Kindly confirm your acceptance on our understanding. Hence we are not considering any civil work for the Isolator Replacement/ retrofitting.		
34	Volume 2,clause No. 3.1.1 b.	Supply and replacement of 132 kV /66 kV/33 kV isolators as per the BPS, after modification of existing foundations and steel supporting structures.....	Kindly confirm for the followings: 1. Existing conductor & connectors to be used or we need to supply new conductor ? 2. We understand that existing control cables can be used , however any additional cables required for isolator retrofitting to be considered in the bidder Scope.	Any additional cables, conductor & connectors required are under Contractor's responsibility.	
35	Volume 2,clause No. 3.1.1 c & d	Supply and replacement of 132kV / 66kV / 33kV Control & Relay Panels and 11 kV Indoor Switchgear Panels	For 11kV Indoor Switchgear panels , we understand that existing relays which are Non compliance 61850 are to be replace/ retrofitted. Hence replacement/ retrofitting of complete 11kV Switchgear panel not to be replaced / retrofitted. Kindly confirm.	Confirm	
36	Volume 3: BOQ, Schedule-1, Part-B (Vendor Accessed Quantities)	Earthing and lightning protection including necesaary connectors/connections, risers etc. complete in all respect(but excluding LM structures for Lightning protection)	As per our site visit ,we understand that existing equipments are having connectivity with existing earthing mat , hence we understand that only risers above the ground for isolator to be replaced.	Confirm	
37	Volume 3: BOQ, Schedule-1, Part-B (Vendor Accessed Quantities)	Earthing and lightning protection including necesaary connectors/connections, risers etc. complete in all respect(but excluding LM structures for Lightning protection)	We understand that there is no lightning protection scope under this package , if yes , kindly confirm the lightning protection scope.	There is no lightning protection scope under this package	
38	Volume 3: BOQ, Schedule-1, Part-B (Vendor Accessed Quantities)	POWER & CONTROL CABLES	We understand that Power & Control cables are for Isolators only. Please confirm.	Power and control cables under the scope are primalirly for DS, but any additional cables required for powering and control of SAS and CRP equipment shall also be included.	



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39	Volume 3: BOQ, Schedule-1, Part-B (Vendor Accessed Quantities)	Air conditioning : High wall type split AC unit of 2 TR capacities for control room, relay room and battery room with all wirings and accessories	We understand that requirement of Air Conditioning units to be installed in Control & Relay Room only. There is no AC requirement in 11kV Switchgear & Battery room. Kindly confirm.	The quantity of AC units are clearly indicated. The scope of installation shall be decided during DDE.	
40	Volume 1 , Appendix 1 - Terms and Procedures of Payment	Schedule No. 3 - Design Services	Schedule A-3: Design Services In volume 3 is not applicable. Please confirm	Refer to see Schedule A-3: Design Services, Volume III	Schedule A-3 is not applicable.
41	Volume 3, Schedule No. 4 : Installation and Other Services b & C	Training Charges for training to be imparted to Employer's Personnel by Bidder's	Payment terms for the training is not mentioned in Appendix1 - terms and procudures of payment.	Refer to see Volume Volume III, Schedule No. 4 (b,c and d) : Installation and Other Services (Common for all),	
42	Volume 2, Chapter 1 – Project Specification Requirement , Clause 12.0 ,e	SPECIFIC REQUIREMENT : Erection, testing and commissioning of Circuit breaker, Isolators, Substation automation system, Control and protection Panels & PLCC shall be done by the contractors under the supervision of respective equipment manufacturers.....	We understand that ETC for Circuit Breakers & PLCC are not in present scope of work. Kindly confirm	Confirm	
43	Volume 2,clause No. 3.1.1 g	Integration of all 132/66/11 kV Bays of all substations under present scope with the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc.	Since MCC has to be integrated with NEA LDC, which is of Siemens make, we request NEA to confirm that bidder scope is limited to making the data available at Router of LDC Control Centre. Integration of data in LDC system will be in existing vendor scope. Kindly remove the same from tender scope and BOQ	Refer to see Volume II,clause No. 3.1.1 and its subclauses. The works under this tender is on turnkey conctrct, therefore the bidders are understood to provide complete system, toally integrated with MCC and LDC.	

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44	Volume 1 , Clause 2.4 Bidder's Experience	<p>Bidder shall be a manufacturer of SAS equipment (i.e. BCU, Gateway and Protection relays) and has experience in participation in at least one contract that has been successfully or substantially completed within the last 10 (Ten) years and that are similar to the proposed contract, where the value of the Bidder's participation exceeds US\$ 4.5 Million. The similarity of the Bidder's participation shall be based on the physical size, nature of works, complexity, methods, technology or other characteristics as described in Section 6 (Employer's Requirements).</p> <p>The similarity here shall mean the bidder must have completed one contract of design, supply, installation, integration, testing and commissioning of Substation Automation System involving minimum three (3) number of Substations with the SAS equipment (i.e. BCU, Gateway and Protection relays) of their own make in last 10 Years and contract value not less than US\$ 4.5 Million.</p>	We understand Bidder need to provide atleast 1 contract as a whole turnkey project which has 3 Substation with SAS also in Scope, the contract worth US\$4.5 Million.	Yes	
45	Vol-I, Appendix 1	<p>Terms of Payment : Schedule 1 & 2 :Supply Part : Five percent (5%) of the total or pro rata CIP or amount upon successful completion of AMC period in equal quarterly installment.</p> <p>Schedule 4 : Installation & construction charges: Five percent (5%) of the total or pro rata value of installation services amount upon successful completion of AMC period in equal quarterly installment</p>	<p>We would like to inform that AMC charges prices are being quoted in Price schedule 4 d) of Installation & Construction charges hence AMC payment should not be linked with Supply & installation charges .</p> <p>We request for the seprate payment terms for AMC portion & we propose that AMC payment should be paid on monthly basis , as we would have operational /running cost for the AMC.</p>	Refer to see Volume I, Section 9 – Contract Forms Page: 9-7 Appendix 1 - Terms and Procedures of Payment □	
46	Volume-III, Price schuled , Schedule 4 b & C	<p>Schedule 4 b : Training charges for training to be imparted abroad</p> <p>Schedule 4 c: Training charges for training to be imparted in Nepal</p>	<p>Payment terms for the Training part are missing in the tender documents. Request you to please confirm the Training payment terms for Schedule 4 b & c.</p>	Refer to see: Volume III, Schedule No. 4 : Installation and Other Services (Common for all) (b):Training Charges for training to be imparted abroad Payment terms are indicated in Section 9.	



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47	Vol-I, Appendix 1	Terms of payment : Schedule No. 3 - Design Services	In Volume-III, Price schedule , Schedule A-3: Design Services : Schedule is not applicable . Kindly confirm	Refer to see Schedule A-3: Design Services, Volume III	Schedule A-3 is not applicable.
48	Volume 1, Appendix 2	Price adjustment	Considering the scope involves & completion schedule, we request NEA to consider price on variable basis and provide price adjustment formula.	This is a fixed price contract.	Price Adjustment is not applicable to this Contract
49	Volume 1, Appendix 6	Scope of Works and Supply by the Employer	Kindly provide the applicable charges or NEA rules for the facilities and supplies being arranged by NEA.	Shall be as per NEA regulation and contract.	
50	Volume-I, ITB Clause 34.1 (b)	Detailed Evaluation of Technical Bids	We will supply spares parts as per list and quantity given in the price schedule only. No other spares shall be in our scope. Please confirm.	Conirm	
51	GCC Clause 10.2, GCC Clause 10.2	Employer Responsibilities - Handing over of Site and Right to way to the Site	We understand that in the event of delay in handover of Site and delay by Employer under GCC Clause 10, we would be entitled to claim extension of time with costs under Clause 40 of the GCC. Please confirm.	Refer to see Volume I, Section 7 - General Conditions of Contract, Page: 7-51, Clause No. 40, Extension of Time for Completion	
52	Vol-I, Section 7 - General Conditions of Contract, Clause 7.3 & Section 8 - Special Conditions of Contract 7.3 of SCC	The Contractor agrees to supply spare parts for a period of years: 10 Years. The Contractor shall carry sufficient inventories to ensure an ex-stock supply of consumable spares for the Plant. Other spare parts and components shall be supplied as promptly as possible, but at the most within 6 months of placing the order and opening the letter of credit. In addition, in the event of termination of the production of spare parts, advance notification will be made to the Employer of the pending termination, with sufficient time to permit the Employer to procure the needed requirement. Following such termination, the Contractor will furnish to the extent possible and at no cost to the Employer the blueprints, drawings and specifications of the spare parts, if requested.	(i) XYZ will ensure to keep the availability of mandatory spares parts. However, we understand that time duration to do so needs to be practically feasible. Technology is continuously evolving and maintaining spares inventory for such a long period is not practical. Requesting NEA to change period from 10 years to 2 year of DLP Period ii) With respect to the requirement of sharing all drawing and technical information of spares – We can only share non-proprietary drawings. We can provide alternate source for the spares or provide the spares from another factory.	Please follow the instructions written in the bidding document.	
52	Volume-I "Section 7 - General Conditions of Contract, Clause 20.3.1	The Contractor shall prepare or cause its Subcontractors to prepare, and furnish to the Project Manager the documents listed in the Appendix (List of Documents for Approval or Review) to the Contract Agreement for its approval or review as specified and in accordance with the requirements of GCC Subclause 18.2 (Program of Performance).	The Contractor shall not share any proprietary information, drawings, designs etc., produced or developed by the contractor for this Project. Requesting NEA to amend the clause accordingly.	The contractor is required to provide all document as required during DDE.	



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53	Volume-I "Section 7 - General Conditions of Contract, Clause 15.1	License/ Use of Technical Information- For the operation and maintenance of the Plant, the Contractor hereby grants a non-exclusive and nontransferable license (without the right to sublicense) to the Employer under the patents, utility models, or other industrial property rights owned by the Contractor or by a third party from whom the Contractor has received the right to grant licenses thereunder, and shall also grant to the Employer a nonexclusive and nontransferable right (without the right to sublicense) to use the know-how and other technical information disclosed to the Employer under the Contract. Nothing contained herein shall be construed as transferring ownership of any patent, utility model, trademark, design, copyright, know-how, or other intellectual property right from the Contractor or any third party to the Employer.	We propose following: For the operation and maintenance of the Plant, the Contractor hereby grants a non-exclusive and non-transferable license (without the right to sublicense) to the Employer under the patents, utility models, or other industrial property rights owned by the Contractor or by a third party from whom the Contractor has received the right to grant licenses thereunder, and shall also grant to the Employer a nonexclusive and non-transferable right (without the right to sublicense) to use the know-how and other technical information disclosed to the Employer under the Contract for the operation and maintenance of the Plant.	This clause cannot be altered	
54	Volume-I "Section 7 - General Conditions of Contract, Clause 15.2	The copyright in all drawings, documents, and other materials containing data and information furnished to the Employer by the Contractor herein shall remain vested in the Contractor or, if they are furnished to the Employer directly or through the Contractor by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party.	We propose following: The copyright in all drawings, documents, and other materials containing data and information furnished to the Employer by the Contractor herein shall remain vested in the Contractor or, if they are furnished to the Employer directly or through the Contractor by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party. However, the Employer shall be obligated to use such drawings, documents and other material for the intended purpose only and shall indemnify and keep Contractor indemnified against any losses, claims, damages, penalty and compensation arising out of or in connection thereto.	This clause cannot be altered	
55	Volume-I "Section 7 - General Conditions of Contract, Clause 16	Confidential Information	We understand that in absence of any specified protection period, the obligation of confidentiality shall survive for 2 years. Please confirm.	Refer to see: Volume I, Section 7 - General Conditions of Contract Page 7-15, 15 License/Use of Technical Information	



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56	Volume-I "Section 7 - General Conditions of Contract, Clause 21.2.2	Upon receipt of such item, the Contractor shall inspect the same visually and notify the Project Manager of any detected shortage, defect, or default. The Employer shall immediately remedy any shortage, defect, or default, or the Contractor shall, if practicable and possible, at the request of the Employer, remedy such shortage, defect, or default at the Employer's cost and expense.....	We understand that there shall be no employer supplied material under this contract and hence this clause shall not be applicable. However if Employer supplied material, we understand that Time for Completion shall be extended accordingly in the event of delay on account of the Employer as per clause 40.1 (e).	Confirm	
57	Volume-I "Section 7 - General Conditions of Contract, Clause 22.6	If the work done or caused to be done by the Employer is work that the Contractor was liable to do at its own expense under the Contract, the reasonable costs incurred by the Employer in connection therewith shall be paid by the Contractor to the Employer.	We Propose following: If the work done or caused to be done by the Employer is work that the Contractor was liable to do at its own expense under the Contract, the reasonable actual costs incurred by the Employer in connection therewith shall be paid by the Contractor to the Employer.	This clause cannot be altered	
58	Volume-I "Section 7 - General Conditions of Contract, Clause 27.8	If the Facilities or any part thereof cannot be used by reason of such defect and/or making good of such defect, the Defect Liability Period of the Facilities or such part, as the case may be, shall be extended by a period equal to the period during which the Facilities or such part cannot be used by the Employer because of any of the aforesaid reasons.	We request that warranty for replaced items shall have a cut-off date beyond which all obligations of Contractor for warranty shall cease to exist. The existing clause may result in evergreen warranty obligations for contractor.	This clause cannot be altered	

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59	Volume-I "Section 7 - General Conditions of Contract, Clause 27.8	Except as provided in GCC Clauses 27 and 33, the Contractor shall be under no liability whatsoever and howsoever arising, and whether under the Contract or at law, in respect of defects in the Facilities or any part thereof, the Plant, design, or engineering, or work executed that appear after Completion of the Facilities or any part thereof, except where such defects are the result of the gross negligence, fraud, criminal, or willful action of the Contractor.	<p>We propose following:</p> <p>Except as provided in GCC Clauses 27 and 33, the Contractor shall be under no liability whatsoever and howsoever arising, and whether under the Contract or at law, in respect of defects in the Facilities or any part thereof, the Plant, design, or engineering, or work executed that appear after Completion of the Facilities or any part thereof, except where such defects are the result of the gross negligence, fraud, criminal, or willful misconduct action of the Contractor.</p> <p>Willful action needs to be changed to willful misconduct. Definition should be as provided below:</p> <p>1.1 "Willful Misconduct" means, on the part of a Party's Managerial or Senior Supervisory Personnel, an intentional and wrongful act, or an intentional and wrongful omission of some act, in either case with the intent to inflict damage or injury.</p> <p>1.2 "Managerial or Senior Supervisory Personnel" means any person employed by a party that is not an hourly worker, clerk, craft labourer, mechanic, foreman, subcontractor, engineer, inspector, Technical Advisor ("TA"), TA Site Manager, Customer Performance Manager, first level of managerial or supervisory personnel, or Senior Supervisory Personnel, an intentional and wrongful act, or an intentional and wrongful omission of some act, in either case with the intent to inflict damage or injury.</p>	This clause cannot be altered	
60	Volume-I "Section 7 - General Conditions of Contract, Clause 29.1	Such indemnity shall not cover any use of the Facilities or any part thereof other than for the purpose indicated by or to be reasonably inferred from the Contract, any infringement resulting from the use of the Facilities or any part thereof, or any products produced thereby in association or combination with any other equipment, plant or materials not supplied by the Contractor, pursuant to the Contract Agreement.	<p>Please add the below to clause 29.1:</p> <p>Notwithstanding anything contained in the Contract, the Contractor shall have no obligation or liability with respect to any Claim based upon (a) Products or Services that have been modified, or revised, (b) failure of Employer to implement any update provided by Contractor that would have prevented the Claim, or (c) Products or Services made or performed to Employer's specifications.</p> <p>For avoidance of any doubt each party shall retain ownership of all confidential information and intellectual property it had prior to the contract. All rights in and to products not expressly granted to Employer are reserved by contractor. All new intellectual property conceived or created by contractor in the performance of this contract, whether alone or with any contribution from Employer, shall be owned exclusively by contractor. Employer agrees to deliver assignment documentation as necessary to achieve that result.</p>	This clause cannot be altered	

S. No.	Volume/Section	Discription	Bidder's Query	Employer's reply to the Query	Remarks
61	Volume-I "Section 7 - General Conditions of Contract, Clause 30.1(b)	The aggregate liability of the Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the amount resulting from the application of the multiplier specified in the SCC, to the Contract Price or, if a multiplier is not so specified, the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment, or to any obligation of the Contractor to indemnify the Employer with respect to patent infringement.	<p>We propose following:</p> <p>The aggregate liability of the Contractor to the Employer, whether under the Contract, in tort or otherwise, shall not exceed the amount resulting from the application of the multiplier specified in the SCC, to the Contract Price or, if a multiplier is not so specified, the total Contract Price, provided that this limitation shall not apply to the cost of repairing or replacing defective equipment, or to any obligation of the Contractor to indemnify the Employer with respect to patent infringement.</p> <p>There should not be exceptions to the limit of liability for the cost of repairing and replacing defective equipment. This should be a part of the limitation of liability. Please modify.</p> <p>The terms Gross Negligence and Willful Misconduct shall have following meaning:</p> <p>1.3 "Gross Negligence" means tortious acts or omissions by Seller's Managerial or Supervisory Personnel, well in excess of negligence and amounting to an intentional disregard of a grave, known risk, where such disregard constitutes an extreme deviation from even minimal care.</p> <p>1.4 "Willful Misconduct" means, on the part of a Party's Managerial or Senior Supervisory Personnel, an intentional and wrongful act, or an intentional and wrongful omission of some act, in either case with the intent to inflict damage or injury.</p>	This clause cannot be altered	

S. No.	Volume/Section	Discription	Bidder's Query	Employer's reply to the Query	Remarks
62	Volume-I "Section 7 - General Conditions of Contract, Clause 33.1	The Contractor shall indemnify and hold harmless the Employer and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney's fees and expenses, in respect of the death or injury of any or loss of or damage to any property, arising in connection with the supply and installation of the Facilities and by reason of the negligence of the Contractor or its Subcontractors, or their employees, officers or agents, except any injury, death or property damage caused by the negligence of the Employer, its contractors, employees, officers or agents.	<p>We Propose following: The Contractor shall indemnify and hold harmless the Employer and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of whatsoever nature, including attorney's fees and expenses, in respect of the death or injury of any Third party or loss of or damage to any third party property, arising in connection with the supply and installation of the Facilities and by reason of the negligence of the Contractor or its Subcontractors, or their employees, officers or agents, except any injury, death or property damage caused by the negligence of the Employer, its contractors, employees, officers or agents.</p> <p>Please add the following as Clause 33.1:</p> <p>Employer (as an "indemnifying party") shall indemnify the contractor (as an "indemnified party") from and against claims brought by a third party, on account of personal injury or damage to the third party's tangible property, to the extent caused by the negligence of the indemnifying party in connection with this contract. In the event the injury or damage is caused by joint or concurrent negligence of the Employer and contractor, the loss or expense shall be borne by each party in proportion to its degree of negligence. For purposes of contractor's indemnity obligation, no part of the products or site is considered third party property.</p>	This clause cannot be altered	
63	Volume-I "Section 7 - General Conditions of Contract, Clause 41 & 42	Suspension and Termination	There is no recourse available to the Contractor for Suspension/ termination in case of non-payment or delayed payment. This is onerous. We request that the Contractor shall be entitled to suspend/ terminate the agreement for non-payment or delayed payment of amounts due to it under the Contract.	Refer to see: Clause No. 41.2 and 42.3 of GCC, Volume -I, Section 7.	
64	Volume-I "Section 7 - General Conditions of Contract, Clause 43	Neither the Employer nor the Contractor shall, without the express prior written consent of the other party (which consent shall not be unreasonably withheld), assign to any third party the Contract or any part thereof, or any right, benefit, obligation or interest therein or thereunder.	<p>Please add the following at the end of the Clause:</p> <p>Nothing herein shall affect the right of the Contractor to assign receivable under the Contract by way of factoring.</p>	This clause cannot be altered	

Clarification I**Design, Supply, Installation, Integration, Testing and Commissioning of Substation Automation System (SAS) for Existing Grid Substations in Kathmandu Valley**

S. No.	Volume/Section	Discription	Bidder's Query	Employer's reply to the Query	Remarks
65	Volume-I "Section 7 - General Conditions of Contract, Clause 34.1	To the extent specified in the Appendix (Insurance Requirements) to the Contract Agreement, the Contractor shall at its expense take out and maintain in effect, or cause to be taken out and maintained in effect, during the performance of the Contract, the insurances set forth below in the sums and with the deductibles and other conditions specified in the said Appendix. The identity of the insurers and the form of the policies shall be subject to the approval of the Employer, who should not unreasonably withhold such approval.	To the extent specified in the Appendix (Insurance Requirements) to the Contract Agreement, the Contractor shall at its expense take out and maintain in effect, or cause to be taken out and maintained in effect, during the performance of the Contract, the insurances set forth below in the sums and with the deductibles and other conditions specified in the said Appendix.	Refer to see: Volume-I "Section 7 - General Conditions of Contract, Clause 34. "Insurance" No amendment is allowed	
66	Volume-I "Section 7 - General Conditions of Contract, Clause 34.1 (b)	Covering physical loss or damage to the Facilities at the Site, occurring prior to Completion of the Facilities, with an extended maintenance coverage for the Contractor's liability in respect of any loss or damage occurring during the Defect Liability Period while the Contractor is on the Site for the purpose of performing its obligations during the Defect Liability Period.	As upon completion of switchyard all the installation activities shall be over and considering the same we propose that Installation all risks insurance will be effective till TOC, beyond that it should be covered under client's property insurance. Please confirm.	Refer to see: Volume-I "Section 7 - General Conditions of Contract, Clause 34.1 (b) and Appendix 3 - Insurance Requirements No amendment is allowed	
67	Volume-I "Section 7 - General Conditions of Contract, Clause 34.1 (c)	Third Party Liability Insurance Covering bodily injury or death suffered by third parties including the Employer's personnel, and loss of or damage to property occurring in connection with the supply and installation of the Facilities.	As Employee's personnel shall be covered in Employee's own insurance program, we request to amend the clause as below: Third Party Liability Insurance Covering bodily injury or death suffered by third parties including the Employer's personnel, and loss of or damage to property occurring in connection with the supply and installation of the Facilities.	This clause cannot be altered	
68	Volume-I "Section 7 - General Conditions of Contract, Clause 34.1 (f)	Employer's Liability In accordance with the statutory requirements applicable in any country where the Contract or any part thereof is executed	Kindly specify the statutory requirements if any.	These requirements shall be governed by the Laws of Nepal	
69	Volume-I "Section 7 - General Conditions of Contract, Clause 34.5	The Employer shall at its expense take out and maintain in effect during the performance of the Contract those insurances specified in the Appendix (Insurance Requirements) to the Contract Agreement, in the sums and with the deductibles and other conditions specified in the said Appendix.	Please specify the amount of deductibles.	Refer to see: Volume-I "Section 7 - General Conditions of Contract, Clause 34.1 (b) and Appendix 3 - Insurance Requirements ☐	



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S. No.	Volume/Section	Discription	Bidder's Query	Employer's reply to the Query	Remarks
70	Volume-I "Appendix 3 - Insurance Requirements (A) Insurances To Be Taken Out By The Contractor	In accordance with the provisions of GCC Clause 34, the Contractor shall at its expense take out and maintain in effect, or cause to be taken out and maintained in effect, during the performance of the Contract, the insurances set forth below in the sums and with the deductibles and other conditions specified. The identity of the insurers and the form of the policies shall be subject to the approval of the Employer, such approval not to be unreasonably withheld.	In accordance with the provisions of GCC Clause 34, the Contractor shall at its expense take out and maintain in effect, or cause to be taken out and maintained in effect, during the performance of the Contract, the insurances set forth below in the sums and with the deductibles and other conditions specified.	This clause cannot be altered	
71	Volume-I "Appendix 3 - Insurance Requirements (a) Cargo Insurance"	(*) Excess 5% of claimed amount subject to minimum of NRs. 20,000 or its equivalent for Normal and NRs. 80,000 or its equivalent for act of God perils and collapse.	We request NEA to delete the foot note: (*) Excess 5% of claimed amount subject to minimum of NRs. 20,000 or its equivalent for Normal and NRs. 80,000 or its equivalent for act of God perils and collapse.	This clause cannot be altered	
72	Volume-I "Appendix 3 - Insurance Requirements (b) Installation All Risks Insurance"	Installation All Risks Insurance Covering physical loss or damage to the Facilities at the Site, occurring prior to completion of the Facilities, with an extended maintenance coverage for the Contractor's liability in respect of any loss or damage occurring during the defect liability period while the Contractor is on the Site for the purpose of performing its obligations during the defect liability period	As upon completion of switchyard all the instatllation activities shall be over and considering the same we propose that Installation all risks insurance will be effective till TOC, beyond that it should be covered under client's property insurance. Please confirm.	This clause cannot be altered	
73	Volume-I "Appendix 3 - Insurance Requirements (b) Installation All Risks Insurance"	(*) Excess 5% of claimed amount subject to minimum of NRs. 10,000 or its equivalent for Normal and NRs. 30,000 or its equivalent for testing period.	We request NEA to delete the foot note: (*) Excess 5% of claimed amount subject to minimum of NRs. 10,000 or its equivalent for Normal and NRs. 30,000 or its equivalent for testing perioerils and collapse.	This clause cannot be altered	
74	Volume-I General	New Clause- No Nuclear use	The Owner shall confirm that the products/goods and services provided under this contract shall not be used in connection with any nuclear plant or nuclear use. Any such use shall be in fundamental breach of this agreement. Please confirm.	There will be no neuclear use.	

Clarification I**Design, Supply, Installation, Integration, Testing and Commissioning of Substation Automation System (SAS) for Existing Grid Substations in Kathmandu Valley**

S. No.	Volume/Section	Discription	Bidder's Query	Employer's reply to the Query	Remarks
75	Volume-I General	SAFETY	Contractor has no responsibility or liability for the pre-existing condition of Employer's equipment or the Site. Prior to Contractor starting any work at Site, Employer will provide documentation that identifies the presence and condition of any Hazardous Materials existing in or about Employer's equipment or the Site that Contractor may encounter while performing under this Contract. Employer shall disclose to Contractor industrial hygiene and environmental monitoring data regarding conditions that may affect Contractor's work or personnel at the Site. Employer shall keep Contractor informed of changes in any such conditions	Confirm	
76	Volume-I General	GENERAL INDEMNITY	Employer (as an "Indemnifying Party") shall indemnify the Contractor (as an "Indemnified Party") from and against claims brought by a third party, on account of personal injury or damage to the third party's tangible property, to the extent caused by the negligence of the Indemnifying Party in connection with this Contract. In the event the injury or damage is caused by joint or concurrent negligence of Employer and Contractor, the loss or expense shall be borne by each party in proportion to its degree of negligence. For purposes of Contractor's indemnity obligation, no part of the Products or Site is considered third party property.	This clause cannot be altered	
77	Volume-I SCC	DEFECT LIABILITY	As per our understanding, defect liability period for all the equipment is 2 years from commissioning. Kindly clarify extended warranty means that for SAS we have to give 2+2 years warranty.	Such obligation of the Contractor shall be in addition to the Defect Liability Period specified under GCC Subclause 27.2. Also refer to see Vol I, Section-8, SCC- 27.10	
78	Volume-I Appendix 8	Functional Guarantees	Please clearly mention the criteria of Funtional Guarantee & specify the test	Not applicable	
79	Volume-2 Annexure -IV	Visual Monitoring system	Please specify the existing make of Visual Monitoring system	Not available	
80	Volume 2 Page 5, Clause B:"Supply and replacement of 132 kV /66 kV/33 kV isolators as per the BPS, after modification of existing foundations and steel supporting structures"		About the existing isolators, which one need to be dismantled or replaced or modified in BPS? Please also kindly confirm whether the contractor needs to install new isolators on old foundation and steel supporting structure or dismantle old foundation and steel structure then install new complete set of isolators? Also, please kindly provide all substations' layout drawings and substation sectional drawings and cable layout drawings and existing isolators foundation and supporting structure drawings, in order to estimate the requirement of material.	The Bidders are advised to visit Substations site and acquaint themselves with the topography, infrastructure, etc. The new isolators are to replace the existing isolator, after modification of existing structure. Any equipment including its	



Clarification I**Design, Supply, Installation, Integration, Testing and Commissioning of Substation Automation System (SAS) for Existing Grid Substations in Kathmandu Valley**

S. No.	Volume/Section	Discription	Bidder's Query	Employer's reply to the Query	Remarks
81	Volume 2 Page 6, Clause C: "Supply and replacement of 132kV /66kV I 33kV Control & Relay Panels and 11 kV Indoor Switchgear Panels	Number of Panels to be replaced is specified in BPS. Dismantling of the replaced panels and storing the dismantled material/ equipment in the substation stores or any other places as specified by the employer shall be in the scope of the contractor. Cost of dismantling and storing deemed to be included in the installation and other services in BPS.	About the existing 11 kV indoor Switchgear which need to be dismantled or replaced in BOQ, please kindly confirm whether the contractor needs to dismantle all old 11kV switchgear and then install new 11 kV switchgear according to your BPS or just need to install 11 kV panels? Also, please kindly provide existing equipment single line drawings and electrical installation drawing and sectional drawings and cable trench drawings and panel foundation drawings and control room layout drawings. Control room structure drawings in order to estimate the requirement of material.	Any equipment including its foundation, which is replaced, dismantled or modified should meet the international standard as mentioned in documents. Also refer to see: Volume -II, Chapter 11 – General Technical Requirement, Civil Works The available SLDs and Layout shall be provided.	
82	Volume 2 Page 5-6. about isolators and switchgears dismantle works	dismantled material/ equipment in the substation stores or any other places as specified by the employer shall be in the scope of the contractor"	Please kindly clarify the scope of equipment need to be dismantled and where to storage the dismantled material and the transport distance.	All replaced equipemnt shall be handed over to Local NEA office, and sored at the designated storage area, which will be within Kathmandu valley.	
83			provide the air-conditioned room size and where to install the air condition	The quantity of AC units are clearly indicated. The scope of installation shall be decided during DDE.	
84			For isolators which need to be dismantled and then re-installed, what any other requirements that bidder should obey. please kindly clarify	Please refer comments above for Isolators	
85			If a bidder provides a multifunctional system which could display alarm annunciator on the display screen, would NEA accept software alarm annunciator instead of the one installed on the cubical?	If there is a justifiable, technically acceptable and certified then NEA can accept.	
86		The network topology indicates that the energy meter shall be compatible with IEC 61850 standard	is it the requirement for the energy meters?	Yes for new panels and if required for retrofitted panels also.	
87		contractor shall provide amp meter, volt meter, MW meter and Mvar meter.	Is it possible that the bidder provides multifunctional meter instead	To be decided during DDE	
88			Is STAR shaped network with redundancy configuration acceptable for this project?	Refer to see: Volume -II of the bidding document. To be decided during DDE	The prospective Bidder Suggests that The RING network topology is good at locating network fault while STAR network topology is good at improve stability and reliability
89			For time synchronization equipment, our product doesn't have 30 mins pulse, is it necessary?	Refer to see: Volume -II of the bidding document.	
90			In order to realize the SAS function, the AC/DC panel alarms shall be provided. Since the AC/DC panel upgrading is not listed in the BOQ, could NEA kindly provide the current AC/DC panel MCB situation, such as drawing, dose distance photos?	The Bidders are advised to visit Substations site and acquaint themselves with the topography, infrastructure, etc.	

Clarification I**Design, Supply, Installation, Integration, Testing and Commissioning of Substation Automation System (SAS) for Existing Grid Substations in Kathmandu Valley**

S. No.	Volume/Section	Discription	Bidder's Query	Employer's reply to the Query	Remarks
91			Could NEA provide the layout drawing of every substation to evaluate the cable length and the earthing conductor amounts	For layout and SLD, refer comment above	
92	volume 2, Clause 3.1.1 Section h	XLPE cable is "temporary supply arrangement.	Is that mean the cable mentioned above will be removed after the whole project finished? And we would also like to know the material requirement for this XLPE cable.	Yes. Refer comment above in 10. Any additional cables, conductor & connectors required are under Contractor's responsibility.	
93			Could NEA kindly provide situation of all the communication channels from each substation connected to the LDC?		
94			Could NEA kindly provide the detailed information of protections not to be replaced in each substation, such as brand, type, communication supporting information	The Bidders are advised to visit Substations site and acquaint themselves with the topography, infrastructure, etc.	
95			Could NEA kindly provide the detailed Information of existing SAS system not to be replaced in this project, such as brand, communication equipment applied, communication protocol supported		
96			According to the recent site survey in Baneshwar Substation, there are panels installed with two vacuum circuit breakers in each switch-gear panel, shall the bidder consider about upgrading these panels into two switch-gear panels for each?	Panel upgrading is not in scope.	
97			For the substations which required partial upgrading, shall the contractor consider about the BUSBAR protection relay upgrading?	Yes	
98	volume 2, Clause 3.1.1-e	the MCC shall monitoring and controlling of 14 existing substations and 7 under construction substations.	Could NEA kindly provide the information of the communication channels and systems applied of these 21 substations?	Yes	
99	Volume 2, Chapter 1 3.1.1.c.	Supply and replacement of 132kV / 66kV / 33kV Control & Relay Panels and 11 kV Indoor Switchgear Panels.	there is no technical requirement for the 11 kV indoor switchgear panels in the bidding document, please confirm it	No supply of 11kV panels. Only retrofitting of protection and metering requirement.	
100	Volume 2, Chapter 1, 3.1.1.h	132 kV/ 66 kV/ 33 kV/ 11 kV XLPE cable along with termination kit and other accessories for temporary supply arrangement while replacing isolators or indoor switchgears	there is no quantity in the BOQ, please confirm it	Refer comment 10 above.	
101			Please specify the voltage level of DC system	Station auxiliary in most substations: 110V DC, Communication voltage: 48V DC. Matatirtha 220kV S/S: 220V DC	
102			Please kindly provide 13 substations' current communication equipment situation, include existing communication equipment brand, direction of signal transmission and running status		
103	Volume II, Chapter 1 - Project Specification Requirement, 1.1.2 Associated Substations:	The following substations are envisaged under Substation Automation Project: -	Request you to share all substation Siteplan /Layout (Indoor & Outdoor) Premises.		



S. No.	Volume/Section	Discription	Bidder's Query	Employer's reply to the Query	Remarks
104	Volume II, Chapter 1 - Project Specification Requirement, 3.1.1 Works associated with 132/66/11 kV Substations under the scope of the Project	c. Supply and replacement of 132kV / 66kV / 33kV Control & Relay Panels and 11 kV Indoor Switchgear Panels. Number of Panels to be replaced is specified in BPS.	We understand that there is no requirement of replacement of 11kV Switchgear Panels as same is not specified in BPS. Please confirm.	confirm	
105	Volume II, Chapter 1 - Project Specification Requirement, 3.1.1 Works associated with 132/66/11 kV Substations under the scope of the Project	d. Retrofitting of existing Control & Relay Panels and Indoor Switchgear Panels including replacement of protection relays for main and backup protection as and where required and other accessories, metering and indication facilities for the substation & remote control stations along with associated equipment.	We understand that all existing non numerical / non IEC618150 compliant numerical relays (Main & Backup) needs to be replaced with IEC61850 compliant numerical relays with in-built event recording and disturbance recording feature for offering a full fledged IEC61850 based Substation Automation System as specified in other parts of the specification. Please confirm whether our understanding is correct or not.	Confirm	
106	Volume II, Chapter 1 - Project Specification Requirement, 3.1.1 Works associated with 132/66/11 kV Substations under the scope of the Project	g. Integration of all 132/66/11 kV Bays of all substations under present scope with the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc.	We request you to limit the scope of works under this contract to only necessary support for integration of substation data with Siemens make LDC. i.e., providing necessary support for point to point testing at Gateways located in the respective substations. Modification / engineering works / Integration / upgradation works in LDC SCADA to be taken up by NEA directly with Siemens. This is required to facilitate all the bidders with same level playing ground. Please also note, this is the same modality being followed by all the utility customers.	Refer comment 14 above.	
107	Volume II, Chapter 1 - Project Specification Requirement, 3.1.1 Works associated with 132/66/11 kV Substations under the scope of the Project	h. 132 kV/ 66 kV/ 33 kV/ 11kV XLPE cable along with termination kit and other accessories for temporary supply arrangement while replacing isolators or indoor switchgears.	Considering the safety point of view and the practical difficulties, we recommend for shutdown of the respective bay for performing the retrofit activities. Shutdown can be made bay wise, so that there is no major outage of power flow in a particular substation. Please confirm.	The installation shall be done such as to minimize the shutdown period. If major shutdown is required, the bpass arrangement shall be provided by the contractor without any additional cost to employer.	
108	Volume II, Chapter 1 - Project Specification Requirement, 3.1.1 Works associated with 132/66/11 kV Substations under the scope of the Project	k. Temporary arrangement of the materials and equipment for the control and protection of the associated line(s) and transformer(s) while bypassing the control and relay panels shall be in the scope of the contractor and cost of the arrangement deemed to be included in the retrofitting works.	Considering the practical difficulties of using temporary control & protection panels for line(s) and transformer(s) bays, we recommend for shutdown of the respective bay for performing the retrofit activities. Shutdown can be made bay wise, so that there is no major outage of power flow in a particular substation. Please confirm.		
109	Volume II, Chapter 1 - Project Specification Requirement, 12.0 SPECIFIC REQUIREMENT	f. The Contractor shall impart the necessary training to Owner's Personnel as per following details:- Training at Manufacturer's works. The Contractor shall include in the training charges payment of per Diem allowance to NEA trainees @ USD 200 per day per trainee for the duration of training abroad towards accommodation, meals and other incidental expenses, and to and fro economy class air ticket from Nepal to place of training. The duration of training shall be excluding travelling period.	We request you to exclude following from the present scope. - per Diem allowance to NEA trainees @ USD 200 per day per trainee. - Accommodation, meals and other incidental expenses. - To and fro economy class air ticket from Nepal to place of training	The clause cannot be altered	

Clarification I**Design, Supply, Installation, Integration, Testing and Commissioning of Substation Automation System (SAS) for Existing Grid Substations in Kathmandu Valley**

S. No.	Volume/Section	Discription	Bidder's Query	Employer's reply to the Query	Remarks
110	Volume II, Chapter 1 - Project Specification Requirement, 12.0 SPECIFIC REQUIREMENT	On Job Training in Nepal: The traveling and living expenses of Owner's personnel for the training programme conducted in Nepal shall be borne by the Owner.	We understand that On Job Training in Nepal will be conducted only in one location for the complete scope of this project.	To be decided during start of installation and AMC	
111	Volume II, Chapter 1 - Project Specification Requirement, 12.0 SPECIFIC REQUIREMENT	I. The switchyard panel room as detailed in section Substation Automation System is not required for GIS station.	We understand that there is no requirement of Switchyard panel room in this project, as all control & relay panels and Substation automation system will be housed in existing control room building. Please confirm.	Confirm	
112	Volume II, Chapter 1 - Project Specification Requirement, 12.0 SPECIFIC REQUIREMENT	ANNEXURE- I, LIST OF PREFERED (SHORTLISTED) MAKE (ii) Energy Meters from: ELSTER (ABB), ACTARIS (Schlumberger), EDM1, SIEMENS or equivalent	Please provide us the detailed technical specification of energy meters to be considered in the present scope as same is missing in the tender documents.	Seperately attached as annexure V of this clarification	
113	Volume II, Chapter 1 - Project Specification Requirement, 12.0 SPECIFIC REQUIREMENT	ANNEXURE- I, LIST OF PREFERED (SHORTLISTED) MAKE (ii) Energy Meters from: ELSTER (ABB), ACTARIS (Schlumberger), EDM1, SIEMENS or equivalent	We understand that supply of Energy Meters is applicable only for the new Control & Relay Panels being supplied in the present scope. For existing panels, where retrofit / replacemet of Main & Backup protection relay is required, existing Energy Meters to be retained as it is. Please confirm whether our understanding is correct or not.	Energy meter if required for complete integration of SAS shall be provided.	
114	Volume II, Chapter 1 - Project Specification Requirement, 12.0 SPECIFIC REQUIREMENT	ANNEXURE- I, LIST OF PREFERED (SHORTLISTED) MAKE (iii) Communication System: NOKIA, NOKIA SIEMENS, SIEMENS, ABB, AREVA/ALSTOM or equivalent	We understand that Communication System is not part of present scope of work. As same is not specified in BPS, Technical specification, elsewhere in the tender documents. Please confirm.	Confirm except for as required for SAS system	
115	Volume II, Chapter 4 – General Technical Requirement, Air Conditioning, 2.2.2	Controllers shall be provided in Control room and Battery room, one controller for each room, to control and monitoring of AC units and shall have the following facilities	Request you to provide us Individual room dimension or individual room wise AC Machine qty for selection of Controllers.	Refer clause above	
116	Volume II, Chapter 6 - Control and Relay Panels, 18. TRANSMISSION LINE PROTECTION	For 132KV Main: Numerical distance protection scheme Back up: Directional Over Current and Earth fault Protection	We understand that Backup Directional Over Current and Earth Fault protection as in-built function of Bay Control Unit will be acceptable. Please confirm.	To be decided during DDE.	
117	Volume II, Chapter 6 - Control and Relay Panels. BUS BAR PROTECTION	Single bus bar protection scheme shall be provided for each main bus and transfer bus (as applicable) for 220KV and 132 KV voltage levels	We understand that Numerical centralized bus bar protection will be acceptable for the present scope, as all the control & relay panels are located in a centralized control room. This is also in-line with all previous supplies in NEA substations for the similar specification / application. Please confirm	Confirm as required	
118	Volume II, Chapter 6 - Control and Relay Panels, BUS BAR PROTECTION	Single bus bar protection scheme shall be provided for each main bus and transfer bus (as applicable) for 220KV and 132 KV voltage levels	Please clarify whether Bus Bar protection is required for 66kV Substation also.	Confirm as required	
119	Volume II, Chapter 6 - Control and Relay Panels, BUS BAR PROTECTION	Single bus bar protection scheme shall be provided for each main bus and transfer bus (as applicable) for 220KV and 132 KV voltage levels	We understand that existing non numerical / non IEC61850 compliant Bus Bar protection relays needs to be replaced / retrofitted with IEC61850 compliant numerical bus bar protection relays with in-built event recording and distrurbance recording feature for offering a full fledged IEC61850 based Substation Automation System as specified in other parts of the specification. Please confirm whether our understanding is correct or not.	Confirm	
120	Volume II, Chapter 6 - Control and Relay Panels, BUS BAR PROTECTION	Single bus bar protection scheme shall be provided for each main bus and transfer bus (as applicable) for 220KV and 132 KV voltage levels	Please provide us separate line item in tender price schedule for offering Bus Bar Protection in the present scope.	The existing busbar protection, if required retrofitting shall be provided.	

S. No.	Volume/Section	Discription	Bidder's Query	Employer's reply to the Query	Remarks
121	Volume II, Chapter 6 - Control and Relay Panels, 31. RELAY TEST KIT	31.1. One relay test kit shall comprise of the following equipment as detailed here under 3 sets Relay tools kits 2 nos. Test plugs for TTB 2 nos. Test plugs for using with modular type relays (if applicable)	Please clarify whether supply of relay test kit as mentioned in this clause is required to be offered in the present scope. If yes, please provide us the necessary line item in tender price schedule for offering the same.	Not in scope	
122	Volume II, Chapter 6 - Control and Relay Panels, 33. CONFIGURATION OF RELAY AND PROTECTION PANELS	LINE PROTECTION PANEL (220 & 132kV) 9. Cut-out and wiring with TTB for POWERGRID supplied energy meter	We understand that supply of Energy Meters is part of present scope, as mentioned in other parts of the specification. Please confirm.	Refer clause above	
123	Volume II, Chapter 7 - Substation Automation System, -	1.2. The SAS shall contain the following main functional parts: - Remote HMI.	We understand that "Remote HMI" mentioned in this clause is not applicable for this project, as all the substations under this project will be controlled & Monitored from "Master Control Centre" being supplied in this project.	To be decided during DDE	
124	Volume II, Chapter 7 - Substation Automation System, -	2.2 SYSTEM ARCHITECTURE Optional data concentrators, even redundant, providing the interface between legacy field bus communicating IED's and the IEC61850 substation bus. The protocols are serial or TCP/IP versions for IEC 60870-5, DNP3.0 and Modbus	We recommend that existing legacy numerical relays needs to be replaced with IEC61850 compliant numerical relays with in-built event recording and distrurbance recording feature for offering a full fledged IEC61850 based Substation Automation System as specified in other parts of the specification. Please confirm.	Confirm	
125	Volume II, Chapter 7 - Substation Automation System, -	2.2 SYSTEM ARCHITECTURE	We understand that we need to follow "TYPICAL ARCHITECTURAL DRAWING OF SUBSTATION AUTOMATION SYSTEM" as shown in page 7-14, which is a full fledged IEC61850 based Substation Automation System and also in-line with earlier Substation Automation Systems delivered in NEA substations. Please confirm.	Confirm	
126	Volume II, Chapter 7 - Substation Automation System, -	Each IED shall have its own integrated Ethernet switch.	As per "TYPICAL ARCHITECTURAL DRAWING OF SUBSTATION AUTOMATION SYSTEM" as shown in page 7-14 and requirements mentioned in other parts of specification, integrated Ethernet switch as part of each IED is not applicable. Please confirm.	Confirm	
127	Volume II, Chapter 7 - Substation Automation System, 3.3.4 Communication Protocol	The communication protocol for gateway to control centre must be open protocol and shall support IEC 60870-5-101 and IEC 61850 for all levels of communication for sub-station automation such as Bay to station HMI, gateway to remote station etc.	We understand that communication protocol between gateway and LDC/MCC should be on IEC60870-5-104. Please confirm.	Confirm	
128	Volume II, Chapter 7 - Substation Automation System, 4.1.5 Switched Ethernet Communication Infrastructure:	The bidder shall provide the redundant switched optical Ethernet communication infrastructure for SAS. One switch shall be provided to connect all IEDs for two bays of 220kV yard to communication infrastructure. Each switch shall have at least two spare ports for connecting bay level IEDs and one spare port for connecting station bus	Guidelines for estimation of Ethernet Switches for 132kV, 66kV, 33kV & 11kV is not provided in the specification. Hence we propose as below: - 132kV: One switch for every two bays. - 66kV: One switch for every two bays. - 33kV: One switch for every four bays. - 11kV: One switch for every eight bays. Please confirm your acceptance for the same. □	To be decided during DDE	
129	Volume II, Chapter 7 - Substation Automation System, 4.2.1 Input/Output (I/O) modules	Technical Parameters of BCU: 2. Protocol Capabilities: Ethernet based communication: Dual on -Board with dual I.P. addresses on IEC-61850 & upgradeable in future.	As per clause 2.2 page 7-5 and "TYPICAL ARCHITECTURAL DRAWING OF SUBSTATION AUTOMATION SYSTEM" as shown in page 7-14, the redundant connectivity between IEDs and Ethernet switches is not required. Hence the requirement of dual on board with dual IP adress mentioned in this clause will not be applicable for this project. Please confirm.	To be decided during DDE	

S. No.	Volume/Section	Discription	Bidder's Query	Employer's reply to the Query	Remarks
130	Volume II, Chapter 7 - Substation Automation System, 4.2.1 Input/Output (I/O) modules	Technical Parameters of BCU: 10. Event Logging : Storage of events up to 2000 in ROM.	As per clause 3.1.1 Bay control functions overview, page no. 7-9, is referred to Data storage for at least 200 events. We understand that "2000 events" mentioned in this clause is a typographical error and same should be read as "200 events". Please confirm.	To be decided during DDE	
131	Volume II, Chapter 7 - Substation Automation System, 4.2.1 Input/Output (I/O) modules	Technical Parameters of BCU: 12. Gateway support : Should interface with Gateway for Remote Control facility.	As per "TYPICAL ARCHITECTURAL DRAWING OF SUBSTATION AUTOMATION SYSTEM" as shown in page 7-14 and requirements mentioned in other parts of specification, there will be no direct interface from BCU to LDC/MCC. Hence the gateway functionality in BCU is not applicable. Please confirm your acceptance for the same.	To confirm as per requirement of the specification and decided during DDE	
132	Volume II, Chapter 7 - Substation Automation System, 4.2.1 Input/Output (I/O) modules	Technical Parameters of BCU: 16. Internal Ethernet : 4 X 10/100 Base T (RJ-45) ports+2X10/100 Base Switches Fx (optical) ports for redundant Ethernet network.	As per "TYPICAL ARCHITECTURAL DRAWING OF SUBSTATION AUTOMATION SYSTEM" as shown in page 7-14 and requirements mentioned in other parts of specification, there is no requirement of so many ethernet ports in BCU. Hence same is not applicable for this project. Please confirm your acceptance for the same.	To confirm as per requirement of the specification and decided during DDE	
133	Volume II, Chapter 7 - Substation Automation System, 4.2.1 Input/Output (I/O) modules	Technical Parameters of BCU: 17. Additional ports : 1 X RS232 and 3 X RS485 can support IEC 103 Modbus, should be s/w configurable.	We recommend that existing legacy numerical relays needs to be replaced with IEC61850 compliant numerical relays with in-built event recording and disturbance recording feature for offering a full fledged IEC61850 based Substation Automation System as specified in other parts of the specification. Hence additional ports mentioned under this clause is not applicable for this project. Please confirm.	To confirm as per requirement of the specification and decided during DDE	
134	Volume II, Chapter 7 - General Technical Requirement, Central Control System (MCC), 4.4 Extendibility in future	The SAS must be able to have a 30% expansion in term of bays and 20% configurable I/O s within the bays. This reserved capacity shall be used without any additional hardware such as CPU, I/O Cards and Terminal Blocks etc.	We understand that SAS should be designed considering software and server capacity to cater 30% future expansion. However hardware like Ethernet Switches and Bay Control Units for 30% future expansion bays will not be part of present scope. Please confirm whether our understanding is correct or not.	To be decided during DDE	
135	Volume II, Chapter 9 - Substation Automation System, 1.2 Data Acquisition	And CSS shall have large capability of 1024 channels to communicate with RTUs.	As per Table 7.3 EMS Model Capacity in CCS, Total number of substations to be connected to CCS is 100. Where in the present clause of specification calls for 1024 channels to communicate with RTUs. We understand that CCS should be sized for 100 RTUs as per table 7.3. Please confirm.	To be decided during DDE	
136	Volume II, Chapter 9 - Substation Automation System, 1.2.3	The front-end (abbreviated FE) module of SCADA CCS supports main remote control protocols. They are listed as following: <input type="checkbox"/> IEC60870-5-101 remote communication protocol <input type="checkbox"/> IEC60870-5-104 <input type="checkbox"/> IEC60870-5-103 <input type="checkbox"/> IEC60870-6-TASE.2 network communication protocol <input type="checkbox"/> IEC61850 <input type="checkbox"/> DL476-92 <input type="checkbox"/> CDT <input type="checkbox"/> Modbus	As per clause 1. Introduction, Page No. 9-4, The CCS will connect to several substations via IEC 101/IEC 104, and as work as a master control center for these substations, so the connected substations can be unattended substations. And IEC60870-6-TASE.2 network communication protocol is required for exchanging the information between other control centres. So, we do not foresee the requirement of additional protocols mentioned in the present clause of specification. Please clarify.	The relevant protocols shall be referred, such as to complete the scope of works.	
137	Volume II, Chapter 9 - Substation Automation System, 1.1.5	5) Integrative Diagram Model Library technology based on CIM for the establishment of primary models and secondary models.	As there is no Network Model Integration we don't envisage the requirement of CIM/IEC61970. Please confirm.	TO be decided during DDE	

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S. No.	Volume/Section	Discription	Bidder's Query	Employer's reply to the Query	Remarks
138	Volume II, Chapter 9 - Substation Automation System,1.3.1	The system configures data quality flags for all remote measurement values, BI value and calculated value to indicate degree of data reliability and current data operation condition. Quality attribute name is set up in the same name if an attribute name has been configured in the measurement quality type in IEC61970-301 and if not, the related part of IEC61970-303 or IEC61850 can be referred to or it can be self extended	As there is no Network Model Integration we dont envisage the requirement of CIM/IEC61970. Please confirm.	TO be decided during DDE	
139	Volume II, Chapter 9 - Substation Automation System,2.1.1	Basic object-oriented characteristics such as enclosure, inheritance and incidence etc. are supported, essentially ensuring support of IEC61970 standard CIMmodel;	As there is no Network Model Integration we dont envisage the requirement of CIM/IEC61970. Please confirm.	TO be decided during DDE	
140	Volume II, Chapter 9 - Substation Automation System,2.1.3	Data access interface meeting CIS (Component Interface Specification, It is one of the IEC 61970 series that define an application program interface for an energy management system)standard allows application program to not only easily access data from external data source, but also easily pack them to "plug-and-play"components that can be plugged or unplugged on each application frame	As there is no Network Model Integration we dont envisage the requirement of CIM/IEC61970. Please confirm.	TO be decided during DDE	
141	Volume II, Chapter 9 - Substation Automation System,1.3.4	Accumulator Process	The MFM will provide all the electrical parameter data such voltage, frequency, energy etc.. directly to the gateway and hence need not be calculated at SCADA.	TO be decided during DDE	
142	Volume II, Chapter 9 - Substation Automation System,1.3.5	Real time calculation	The MFM will provide all the electrical parameter data such voltage, frequency, energy etc.. directly to the gateway and hence need not be calculated at SCADA.	TO be decided during DDE	
143	Volume II, Chapter 9 - Substation Automation System,1.4.1	Supervisory Control 1.4.1 Control Triggering Mode	AGC(Automatic Generation Control) or AVC(Automatic Voltage Control) module may not be relevant for the present Master Control Centre application requirements menioned in other parts of the specification. Please review and confirm.	Confirm	
144	Volume III,	132 kV Line Control & Relay Panel along with Line Differential Relay or Numerical Distance relay complete with all accessories as per Technical Specification	Please clarify whether we need to offer Line Distance Protection / Line Differential Protection.	Shall be as per site conditions or existing relays provided in existing panels.	
145	Volume III,	66 kV Line Control & Relay Panel along with Line Differential Relay or Numerical Distance relay complete with all accessories as per Technical Specification	Please clarify whether we need to offer Line Distance Protection / Line Differential Protection.	Shall be as per site conditions or existing relays provided in existing panels.	
146	Volume III	66 kV Line Control & Relay Panel along with Line Differential Relay or Numerical Distance relay complete with all accessories as per Technical Specification	Please clarify whether we need to offer Line Distance Protection / Line Differential Protection.	Shall be as per site conditions or existing relays provided in existing panels.	
147	Volume III	Integration of all 132/33/11 kV Bays under present scope with the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc. as per TS Section Project.	As per the tender price schedule, there is no requirement of Control & Relay Panels and Substation Automation System in the present scope for Matathirtha Substation. Please review and clarify the scope of wrok needs to be performed under this line item.	Matatirtha substation is covered by Kathamndu - Marsyangdi T.L. Project. So. Only necessary integration works required are under the scope.	

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S. No.	Volume/Section	Discription	Bidder's Query	Employer's reply to the Query	Remarks
148	Volume III	Virtual Projection systme for MCC - 1 Set	Request you to provide us the detailed technical specification of Virtual Protection system as same is missing in the present tender documents.	The specification is attached herewith	
149	Volume III	Integration of all 66/11 kV Bays under present scope with the SCADA of SIEMENS (SINAUT Spectrum) at Load Dispatch Centre, Kathmandu including supply of Hardware, Software, accessories etc. as per TS Section Project.	There is no requirement of CRP & SAS in the present scope. We understand that existing Baneshwor Substation is already equipped with ABB make CRP & SAS system (IEC61850 based) which is already integrated to LDC. Request you to kindly clarify the scope to be performed against this scope of work called in tender price schedule.	The scope is integration of SAS in all substtion with LDC as well as MCC, without any los of function of existing LDC system which is Rtu based. Therefore, suitable architecture shall be decided during DDE. Also, the existing Baneshwor substaton servers is required to be upgraded or new servers added to achive the required functionality of the MCC.	
150	Volume III	3.1.1 Numerical distance or line differential relay (1 no. of each type) - 2 Set	We understand that Qty 2 Set means, 2 Nos. of Line Distance protection relay and 2 Nos. of Line differential relay. Please confirm.	Confirm	
151	Volume III	3.2.3 Directional over current & E/F Protection Relay	As per technical specification, Transformer protections are covered in two numerical relays i.e., Group 1 & Group 2. So, there is no requirement of stand-alone over current and earth fault protection relay in the main scope. Considering above, we request you to remove this line item from tender price schedule.	The protection requirement is for providing the separate Main and Backup protection system.And Overcurrent and earthfault relay is considered as a backup protection.	
152	Volume III	3.3.1 Power supply module for Bus Bar protection.	Qty of this line item is missing. Kindly check and provide us the qty for offering accordingly.	Please provide your rates as per Price schedule.	
153	Volume III	3.3.2 Bay unit module- 2 Set	Request you to review this requirement as there is no 132kV Bus Bar Protection in the Main scope.	Please provide your rates as per Price schedule.	
154	Volume III	3.3.1 Power supply module for Bus Bar protection.	Qty of this line item is missing. Kindly check and provide us the qty for offering accordingly.	Please provide your rates as per Price schedule.	
155	Volume III	3.3.2 Bay unit module- 2 Set	We understand that Bay unit module is not applicable incase of low impedance centralized type / high impedance type Bus bar protection is offered in Main scope. In that case, we need to offer Bus Bar protection relay itself as a spare instead of bay unit module. Please confirm whether our understanding is correct or not.	If there are no seperated Bay unit, the main relays has to be provided.	
156	Volume I, Section 7 - General Conditions of Contract, 7.2.	The Contractor shall, unless specifically excluded in the Contract, perform all such work and/or supply all such items and materials not specifically mentioned in the Contract but that can be reasonably inferred from the Contract as being required for attaining Completion of the Facilities as if such work and/or items and materials were expressly mentioned in the Contract.	We understand that this clause is not applicable as the scope of work is clearly defined in the BOQ part of tender price schedule. Please confirm	Refer to see: Volume I, Section 7 - General Conditions of Contract, 7 - "Scope of Facilities"	



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S. No.	Volume/Section	Discription	Bidder's Query	Employer's reply to the Query	Remarks
157	Volume I, Section 7 - General Conditions of Contract, 9.3.	The Contractor shall acquire and pay for all permits, approvals, and/or licenses from all local, state, or national government authorities or public service undertakings in the country where the Site is located, which such authorities or undertakings require the Contractor to obtain in its name and which are necessary for the performance of the Contract, including, without limitation, visas for the Contractor's and Subcontractor's personnel and entry permits for all imported Contractor's Equipment. The Contractor shall acquire all other permits, approvals, and/or licenses that are not the responsibility of the Employer under GCC Subclause 10.3 hereof and that are necessary for the performance of the Contract.	We understand that these licenses are approvals to be limited to, those that contractor is required under law to take. No licenses, approvals etc. to be taken in the name of NEA should be in contractor's scope. Please confirm.	Refer to see: Volume I, Section 7 - General Conditions of Contract, 9 - "Contractor's Responsibilities" and 10- "Employer's Responsibilities"	
158	Volume I, Section 7 - General Conditions of Contract, 27.2.	The Defect Liability Period shall be 540 days from the date of Completion of the Facilities (or any part thereof) or 1 year from the date of Operational Acceptance of the Facilities (or any part thereof), whichever first occurs, unless specified otherwise in the SCC pursuant to GCC Subclause 27.10.	The Defect Liability Period shall be 18 months from the date of supply or 12 months from the date of commissioning, whichever first occurs. Please confirm.	Refer to see: 1. Volume I, Section 7 - General Conditions of Contract, 27 - "Defect Liability" and 2. Volume I, Section 8 - Special Conditions of Contract, 27 - "Defect Liability"	

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S. No.	Volume/Section	Discription	Bidder's Query	Employer's reply to the Query	Remarks
159	Volume I, Section 7 - General Conditions of Contract , 28.3.	If, for reasons attributable to the Contractor, the Functional Guarantees specified in the Appendix (Functional Guarantees) to the Contract Agreement are not attained either in whole or in part, but the minimum level of the Functional Guarantees specified in the said Appendix to the Contract Agreement is met, the Contractor shall, at the Contractor's option, either (a) make such changes, modifications, and/or additions to the Facilities or any part thereof that are necessary to attain the Functional Guarantees at its cost and expense, and shall request the Employer to repeat the Guarantee Test or (b) pay liquidated damages to the Employer in respect of the failure to meet the Functional Guarantees in accordance with the provisions in the Appendix (Functional Guarantees) to the Contract Agreement.	We request you to remove clause (b) of this clause.	These clauses are mandatory.	
160	Volume I, Section 7 - General Conditions of Contract ,40	Extension of time- any default or breach of the Contract by the Employer, or any activity, act or omission of the Employer, or the Project Manager	Contractor shall be entitled for the cost compensation for the ground as specified in 40.1 (e). - Employer shall compensate the Contractor with any additional cost and expense that the Contractor is likely to incur due to such delays	The clauses listed in Volume I, Section 7 - General Conditions of Contract are mandatory and that cannot be altered.	
161	Volume I, Section 7 - General Conditions of Contract ,43.	Assignment	We request you to include below additional clause. Notwithstanding the foregoing, it is hereby agreed between the Parties that the "XYZ" may transfer or assign all if its rights and obligations under this Order/Contract to another legal entity of the "XYZ" Group of Companies. This Order/Contract, and the obligations hereunder, shall be binding upon the parties hereto, their successors and permitted assigns		
162	Volume I, Section 9 – Contract Forms, 4.4	Subject to para. 4.3 above, the Contractor's aggregate liability to pay liquidated damages for failure to attain the functional guarantees shall not exceed ten percent (10%) of the Contract price.	Kindly clarify how performance LD on functional guarantee is calculated.		
163	Volume I, Section 9 – Contract Forms, 4.4	Subject to para. 4.3 above, the Contractor's aggregate liability to pay liquidated damages for failure to attain the functional guarantees shall not exceed ten percent (10%) of the Contract price.	We request you kindly remove this clause i.e. "LD on functional gurantee" from the tender conditions.	These clauses are mandatory.	

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S. No.	Volume/Section	Discription	Bidder's Query	Employer's reply to the Query	Remarks
164	Volume I, Section 8 - Special Conditions of Contract, 26.2	Applicable rate for liquidated damages: 0.05 % of Contract Price per day of delay Maximum deduction for liquidated damages: 10% of Contract Price	Maximum deduction of LD shall be 5% of contract price of delayed portion. Request you to kindly acctpet for the same.	Maximum deduction for liquidated damages is 10% of Contract Price	
165	Volume I, Section 8 - Special Conditions of Contract, 14.5.2, General: (b)	Value Added Tax (VAT): the Contractor, Subcontractor or its nominated Subcontractor, shall be eligible for refund on all imported equipment and materials to be supplied and delivered exclusively for use in the Project.	This clause is contradicting with the cluase - e of Duties on equipment, plant, materials and supplies. The clause says that VAT applicable on plant & equipment supplied directly from manufacturing plant in the employers country shall be reimbursed. Where as clause 14.5 (2) of SCC says that the bid price shall include business taxes and any other taxes. Kindly clarify, whether Bid price will include Local Nepal VAT or need not to be included as it will be reimbursed.	All taxes applicable at country of origin, bidders country shall be included in the bid price. TDS as applicable by the law of Nepal shall be in the part of Contractor. The taxes applicable in Nepal like VAT, and Custom will be borne by the Employer and will be reimbursed at actual.	
166	Volume I, Section 8 - Special Conditions of Contract, 14.5.2, Duties on Equipment, Plant, Materials and Supplies: (a)	Equipment, plant, materials and supplies, imported by the Contractor for execution of the Works, shall be subject to payment of customs duty at a special rate of one percent (1%) of CIP or Customs entry point value. This customs duty shall be paid by the Contractor at the time of import and will be reimbursed by the Employer to the Contractor upon submission of the original receipt issued by the Customs Department.	Should the contractor request for payment in indian currency, the equipment and materials must have been imported under the " Duty Refundable Procedure" and should the contractor request for payment in in other convertible currency, the equipment and materials must have been imported under the " In Bond transfer Procedure". Kindly clarify, these rules are applicable in Indian Land where an Indian buyer is buying material/equipment is transferring the the same under In Bond transfer procedure. How this is applicable for any materials procured in India OR from Out side India is getting shipped and billed in the name of NEA. Kindly clarify the intent of this clause.	Please refer above clause 165	
167	Volume I, Section 8 - Special Conditions of Contract, 14.5.2, Duties on Equipment, Plant, Materials and Supplies: (c)	Equipment, plant, materials and supplies, imported by the Contractor for execution of the Works, shall be subject to payment of customs duty at a special rate of one percent (1%) of CIP or Customs entry point value. This customs duty shall be paid by the Contractor at the time of import and will be reimbursed by the Employer to the Contractor upon submission of the original receipt issued by the Customs Department.	Should the contractor request for payment in indian currency, the equipment and materials must have been imported under the " Duty Refundable Procedure" and should the contractor request for payment in in other convertible currency, the equipment and materials must have been imported under the " In Bond transfer Procedure". Kindly clarify, these rules are applicable in Indian Land where an Indian buyer is buying material/equipment is transferring the the same under In Bond transfer procedure. How this is applicable for any materials procured in India OR from Out side India is getting shipped and billed in the name of NEA. Kindly clarify the intent of this clause.	As above	



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S. No.	Volume/Section	Discription	Bidder's Query	Employer's reply to the Query	Remarks
168	Volume I, Section 8 - Special Conditions of Contract, 14.5.2, Duties on Equipment, Plant, Materials and Supplies: (g)	Income tax assessed in accordance with the prevailing Income Tax Act of Nepal and as per the provision of any specific Double Taxation Agreement, shall be imposed on the Contractor, its sub-contractors and nominated sub- contractors. An advance income tax as per the prevailing income Tax Act and Finance Act shall be deducted from the monthly progress payment of the Contractor.	Kindly clarify, what percentage of WHT will be applicable and will be deducted from the payment. Kindly confirm that Advance Tax will not be deducted from Offshore supply where NEA is the Importer of goods/equipments and the title of goods is transferred outside the Jurisdiction of Nepal.	The TDS as applicable by the regulation of Nepal shall be deducted.	
169	Volume II, Annexure-IV, Technical Specification for Visual Monitoring System, 1.2 (j)	System shall have provision of WAN connectivity for Remote Monitoring.	We understand that Router & ISP link to be in purchaser scope for Connectivity. Kindly confirm our understanding.	This contract being a turnkey contract, all works required for the successful completion of work shall be in Contractor,s scope. However, the visual monitroing system is planned to be connected through existing OF connection.	
170	Volume II, Annexure-IV, Technical Specification for Visual Monitoring System, 1.2 (k)	The major EMC required for Cameras and other equipment shall be as under: (6) Ripple on DC input Power Supply Port immunity test(level 4) - As per IEC 61000-4-17	Request you to kindly consider DC Input test only for Bullet /Fixed camera as it take DC Input Power. PTZ camera uses AC Input (18 to 32 VAC).	Shall be as per the specification, to be decided during DDE.	
171	Volume II, Annexure-IV, Technical Specification for Visual Monitoring System, 1.2.2 (8)	Alarm/Event Recording Capable To be provided with built-in external alarm input/ output ports minimum(8 in, 2 out)	Since PC Based Recording System is asked for where this feature not available as inbuilt therefore we can provide it through External I/O device. Please confirm.	Confirm, shall meet all requirement.	
172	Volume II, Annexure-IV, Technical Specification for Visual Monitoring System, 1.1.5	The surveillance VMS System shall operate on 230 V, 50 Hz single-phase power supply. System shall have back up UPS power supply meeting the power supply need of all the cameras in the stations including those which are installed at gate for a period of 2 hours. The bidder shall submit the sizing calculation for the UPS considering the total load requirement of Video Monitoring System.	These two Clauses are contradictory to each other. Please clarify which clause need to follow as UPS Backup time .	Please consider the clause 1.1.5	
173	Volume II, Annexure-IV, Technical Specification for Visual Monitoring System, 1.2.2 (15)	230V AC or equivalent with UPS as a back up for 30 minutes.			
174	Volume II, Annexure-IV, Technical Specification for Visual Monitoring System, 1.2.3- A- (11)	Video Output One channel composite Streaming	As per RFP IP Based camera is asked for which works on Packet based TCP/IP protocol .So composite port/analog output has no use in IP CCTV. We request you to remove this point and accept with RJ-45 port camera only .	Shall be decided during DDE	

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S. No.	Volume/Section	Discription	Bidder's Query	Employer's reply to the Query	Remarks
175	Volume II, Annexure-IV, Technical Specification for Visual Monitoring System, 1.2.3- A- (12)	Supported Protocols TCP, UDP, IP, HTTP, FTP, SMTP, DHCP, DNS, ARP, ICMP, POP3, NTP, IPsec, UpnP, RTP, RTCP	ARP Is the feature of Layer 2 Switch, POP 3 is used to store incoming mail at POP server, IPsec is the feature for Ip security used in VPN & Router. Since these specification are for other application as mentioned above , therefore you are requested to accept camera without these protocols.	Shall be decided during DDE	
176	Volume II, Annexure-IV, Technical Specification for Visual Monitoring System, 1.2.3- A- (14)	Operating Humidity 10~90%	Request you to kindly consider 15 to 85 % which is generalize specification and available with all reputed OEMs.	Please provide as per specification	
177	Volume II, Annexure-IV, Technical Specification for Visual Monitoring System, 1.2.3- B- (1)	Image sensor 1/3 type Solid State Progressive Scan CCD, WDR(High Definition)	Noadays all the megapixel cameras comes with CMOS sensors. Therefore you are requested to please accept CMOS in place of CCD.	shall be decided during DDE, if the proposed feature is advance to proposed one.	
178	Volume II, Annexure-IV, Technical Specification for Visual Monitoring System, 1.2.3- B- (7)	Electronic Shutter 1/60 ~ 1/10,000 sec. automatic or better	Request you to kindly consider 1 - 1/8,000 sec which is generalize specification and available with all reputed OEMs.	Please provide as per specification	
179	Volume II, Annexure-IV, Technical Specification for Visual Monitoring System, 1.2.3- B- (21)	Working Humidity 10 ~ 90%	Request you to kindly consider 20 ~80 % which is generalize specification and available with all reputed OEMs.	Please provide as per specification	
180	Volume II, Annexure-IV, Technical Specification for Visual Monitoring System, 1.2.4- (3)	PTZ Data Transfer Baud Rates Supported selectable 1200 bps / 2400 bps / 4800 bps / 9600 bps	Baud rate is applicable for serial connectivity which earlier requires in analogue PTZ cameras. Since we are offering true IP PTZ camera where data transmits over TCP/IP therefore baudrate is not applicable.	Shall be decided during DDE.	



Annexure-V**Specification for Revenue Meter & Metering (Instrument) Transformer****General**

The units shall be suitable for operating in Outdoor environment and shall be manufactured by International Reputed ISO 9001 Company

Energy Meter

The Energy Meter shall have the following minimum requirement

Type	Electronic, 3Phase, 4wire, Wye Connection, Bi-directional
Accuracy Class	0.2
Applicable Standard	IEC 687 (latest edition) or Equivalent
Measurement	a) Polyphase Quantities kWh, kVARh, kVAh b) Instantaneous Quantities Real Time, kW, kVA, PF, Volts,Amps,Frequency
Rated Current (In)	5A or 1A
Rated Maximum Current	1.2*In
Starting Current	0.001*In
Voltage (Phase)	110V/√3
Frequency	50Hz
Programmable Interval length	At least 1 to 30 min
Load Profile Memory Storage	At Least 60 days of storage using 4 channels at 15min Intervals
Channels of Load Profile Data	At Least 4 channels of storage (kWh import, kWh export, kVARh Import, kVARh export)
Other Features to be Included	a) Serial communication port and Accessories b) Optical Port Communication (With optical Probe) c) Remote Download Modem (in built) d) Hardware Key to Prevent any Calibration and configuration change e) PT or CT error gain correction f) Non Volatile memory g) Inbuilt Super capacitor h) Meter shall be able to record and store in Non-Volatile memory the instant of Power failure and the instant of supply restoration.

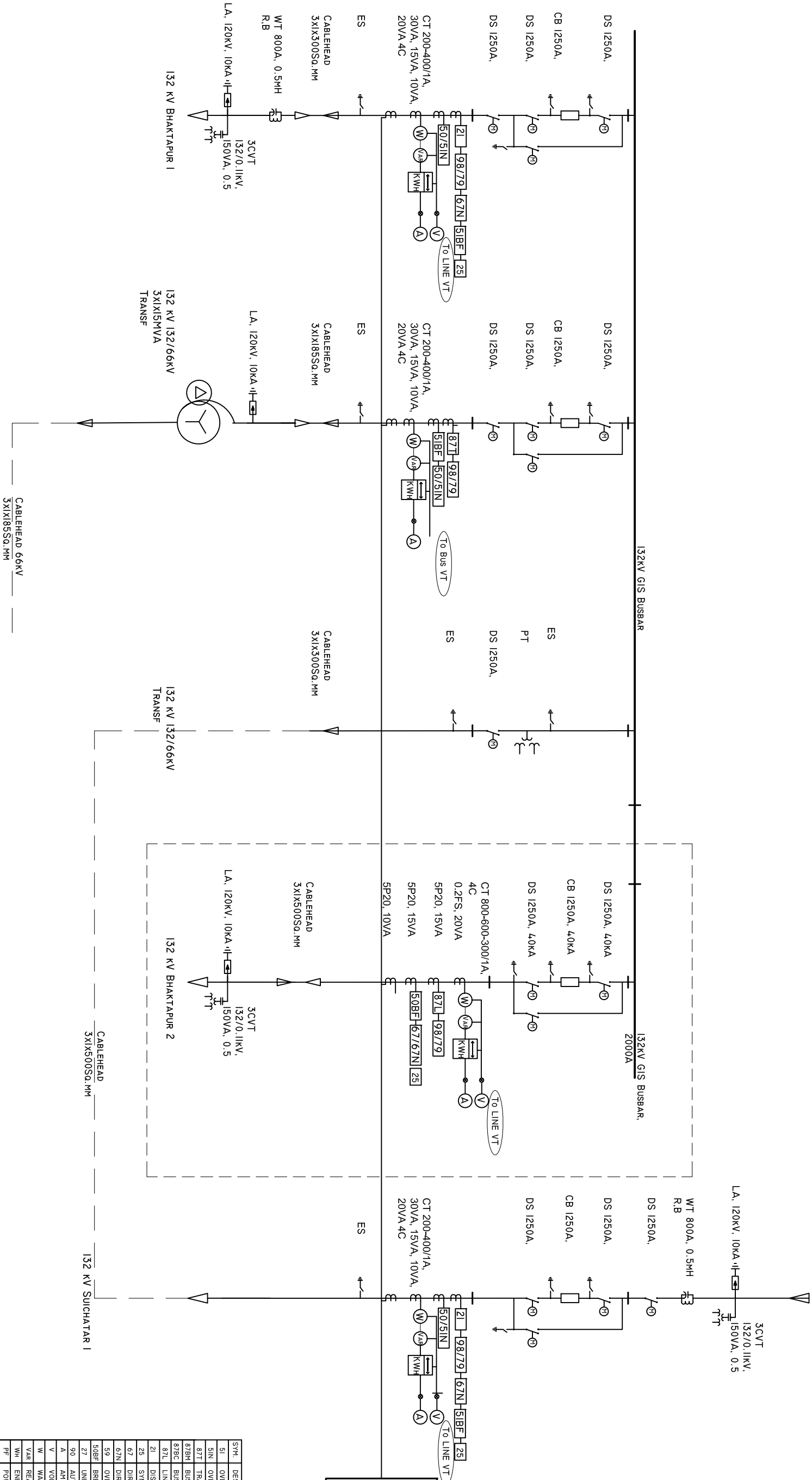
Single Line Diagrams and Layouts*

****(Available indicative SLD and Layout are attached herewith. The drawing provided are for bidding purpose and for general information only, and the bidders are advised to visit site for detailed information)***



SCALE :
SHEET :1/2

SYM.	DESCRIPTIONS
51	OVER CURRENT RELAY
51N	OVER CURRENT GROUND RELAY
87T	TRANSFORMER DIFFERENTIAL RELAY
87BM1	BUS DIFFERENTIAL RELAY MAIN
87BC	BUS DIFFERENTIAL RELAY CHECK
87L	LINE DIFFERENTIAL RELAY
21	DISTANCE CHECK RELAY
67	SYNCHRO CHECK RELAY
67N	DIRECTIONAL OVER CURRENT RELAY
59	DIRECTIONAL O/C GROUND RELAY
50BF	OVER VOLTAGE RELAY
27	BREAKER FAILURE RELAY
27N	UNDER VOLTAGE RELAY
90	AUTOMATIC VOLTAGE REGULATOR
A	AMMETER
V	VOLT METER
W	WATT METER
VAR	REACTIVE POWER METER
WH	ENERGY METER
PF	POWER FACTOR
HZ	FREQUENCY METER
DS	DISCONNECTING SWITCH
CB	CIRCUIT BREAKER
LA	LIGHTNING ARRESTOR
CVT	CAPACITIVE VOLTAGE TRANSFORMER
VT	VOLTAGE TRANSFORMER
WT	WAVE TRAP AND COUPLING CAPACITOR
CT	CURRENT TRANSFORMER
81	FREQUENCY RELAY
79	AUTORECLOSE RELAY
98	FAULT LOCATOR
O/E	OPTICAL TRANSMITTER/ RECEIVER

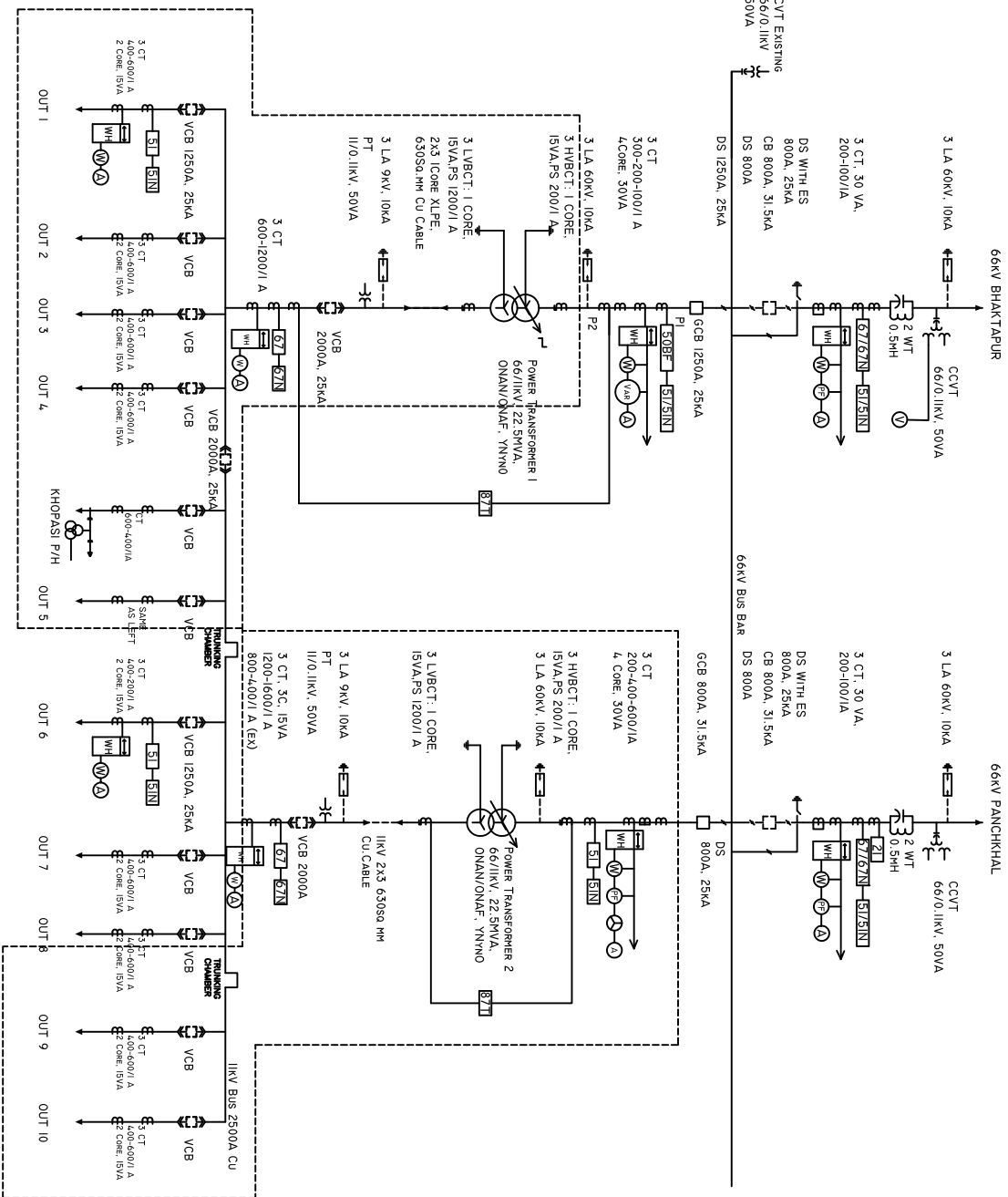


PROJECT MANAGEMENT DIRECTORATE
KATHMANDU VALLEY SUBSTATION AUTOMATION PROJECT

SIGN	DATE	General Line Diagram	Sheet: 1 of 1	SCALE: NTS
DRN				
CHD				
APPD				

ALL DIMENSIONS ARE IN mm.

SYM.	DESCRIPTIONS
SI	OVER CURRENT RELAY
SIN	OVER CURRENT GROUND RELAY
87T	TRANSFORMER DIFFERENTIAL RELAY
87BM	BUS DIFFERENTIAL RELAY MM
87L	LINE DIFFERENTIAL RELAY
21	DISTANCE RELAY
25	SYNCHRO CHECK RELAY
67	DIRECTIONAL OVER CURRENT RELAY
67N	DIRECTIONAL O/C GROUND RELAY
59	OVER VOLTAGE RELAY
59BF	BREAKER FAILURE RELAY
27	UNDER VOLTAGE RELAY
90	AUTOVOLTAGE VOLTAGE REGULATOR
A	AMMETER
V	VOLT METER
W	WATT METER
VAR	REACTIVE POWER METER
WH	ENERGY METER
PF	POWER FACTOR
DS	DISCONNECTING SWITCH
CB	CIRCUIT BREAKER
LA	LIGHTNING ARRESTOR
CVT	CAPACITIVE VOLTAGE TRANSFORMER
VT	VOLTAGE TRANSFORMER
WT	WAVE TRAP AND COUPLING CAPCITOR
CT	CURRENT TRANSFORMER
81	FREQUENCY RELAY
79	AUTORECLOSE RELAY
98	FAULT LOCATOR
O/E	OPTICAL TRANSMITTER/RECEIVER



PROJECT: GRID SUBSTATION REINFORCEMENT PROJECT

CONTRACT NO: PMD/GSRP/071/72-01

GRID SUBSTATION CAPACITY EXPANSION PROJECT

PROJECT MANAGEMENT DIRECTORATE, NEA

DWG No: NHE/BAN/ELECT-02

SHEET: 1 OF 3

SCALE: NTS

CANEC - NHE CONSORTIUM

DURBAR MARG, WARD NO. 6

POB, I, BUTWAL, RUPANDEHI

TEL: + 977 1 540212 FAX: 071 540565

General Line Diagram

BANEP A SUBSTATION

DRN

CHD

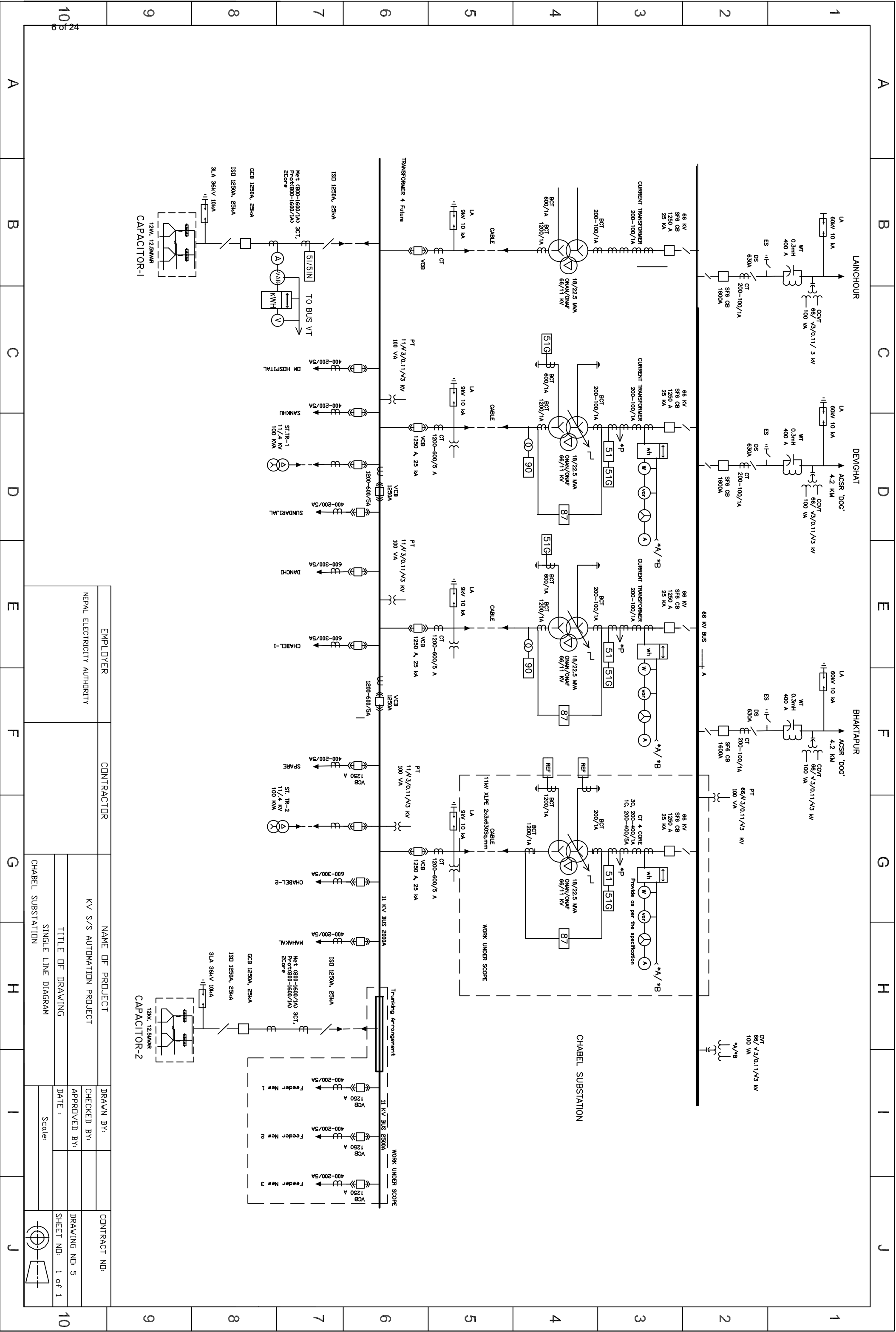
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SIGN

DATE

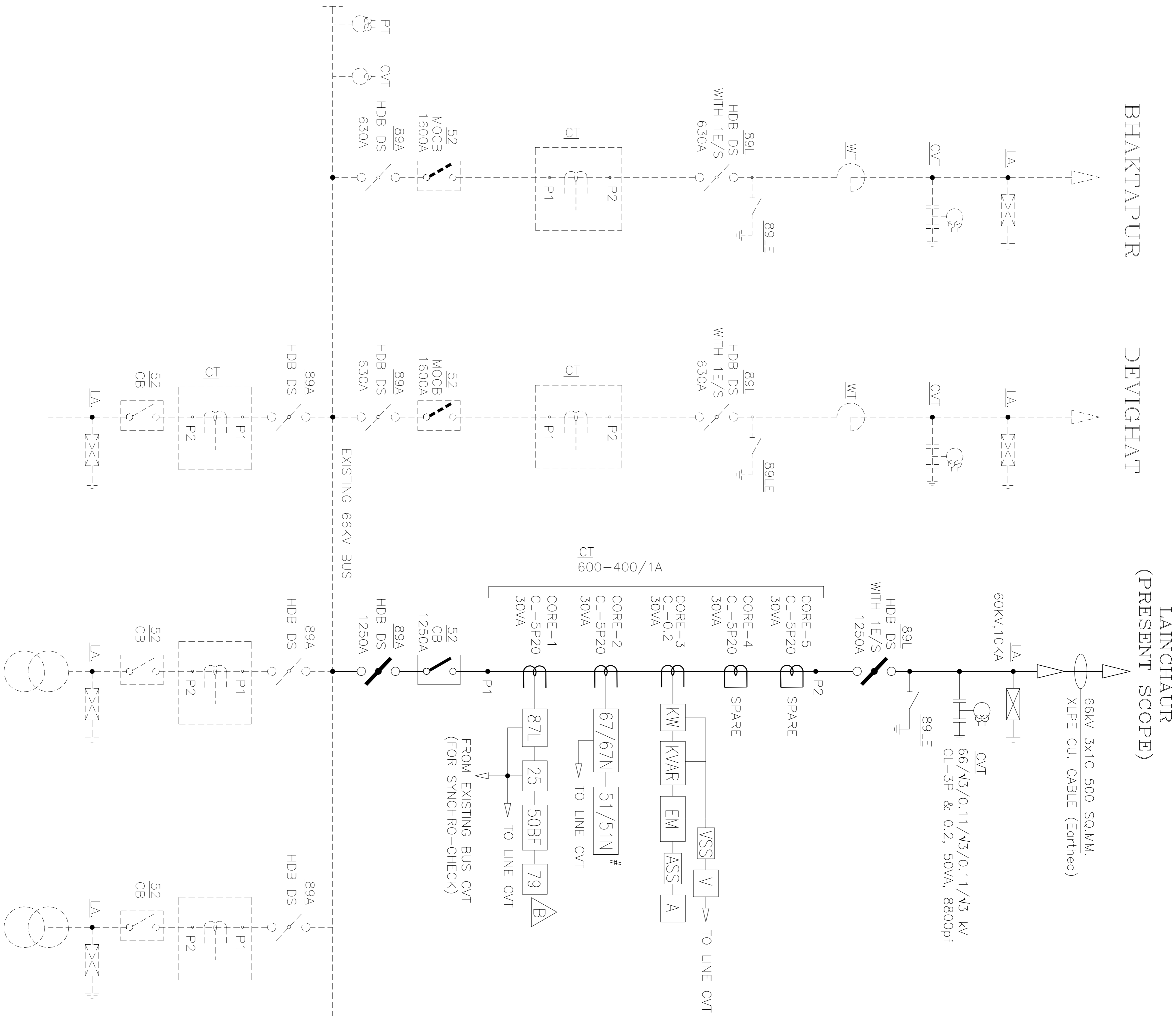
29/02/2016

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



EMPLOYER	CONTRACTOR	NAME OF PROJECT	DRAWN BY:	CONTRACT NO:
NEPAL ELECTRICITY AUTHORITY		KV S/S AUTOMATION PROJECT	CHECKED BY:	
		TITLE OF DRAWING	APPROVED BY:	DRAWING NO: 5
		SINGLE LINE DIAGRAM	DATE :	SHEET NO: 1 of 1
		CHABEL SUBSTATION	Scale:	



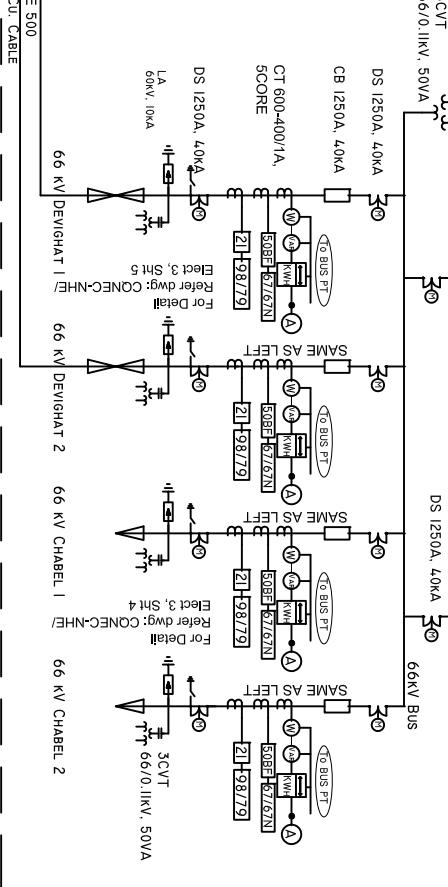
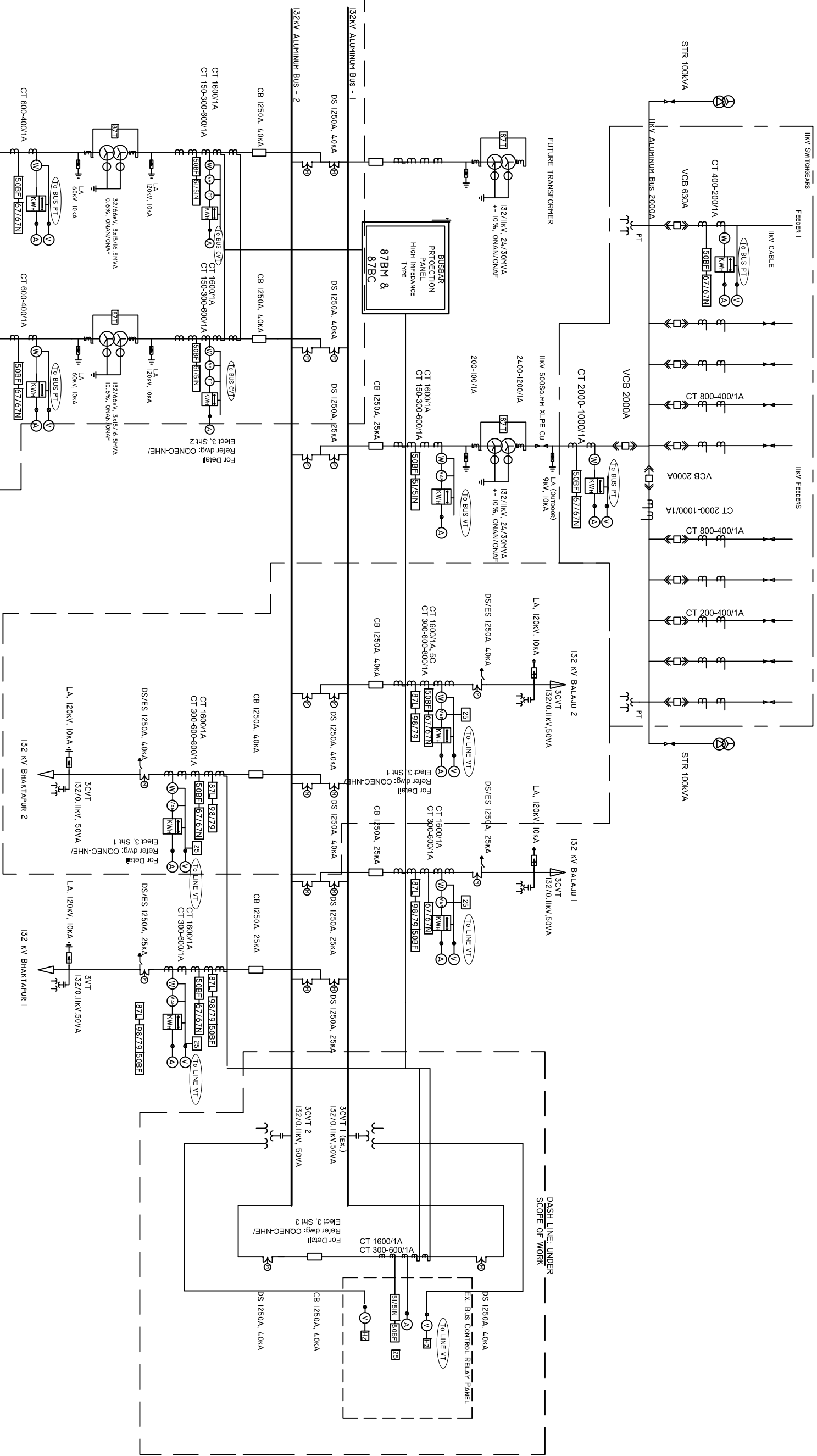


RELAY, METER & EQUIPMENT		
Str.No.	DESCRIPTION	LEGEND
1.	LINE DIFFERENTIAL PROTECTION WITH INBULT SYNCHRO-CHECK, AUTO-RECLOSE FUNCTION AND BREAKER FAILURE PROT.	$\boxed{87L} + \boxed{25} + \boxed{50BF} + \boxed{79}$
2.	DIR. O/C & E/F WITH INBULT NON DIR. O/C & EF	$\boxed{67/67N} + \boxed{51/51N} \#$
3.	ENERGY METER WITH 3PH, 4WIRE	\boxed{EM}
4.	WATT METER	\boxed{KW}
5.	VAR METER	\boxed{KVAR}
6.	AMMETER+ASS	$\boxed{\text{Ammeter Symbol}} - \boxed{A}$
7.	VOLTMETER+VSS	$\boxed{\text{Voltmeter Symbol}} - \boxed{V}$

- 66KV LINE FEEDER : ADDITIONAL NON DIR. O/C & E/F PROT. SHALL BE INBUILT INBUILT FEATURE OF DIR. O/C & E/F PROT. AND SHALL BE ACTIVE IN CASE OF POTENTIAL LOSS.

ITEM No.	ITEM DESCRIPTION	LEGEND	QTY.
1.	66kV, 1250A, 3PH, 25KA / 3SEC. VACUUM CIRCUIT BREAKER (THREE POLE GANG OPERATION)		1
2.	66kV, 1250A, 3PH, 25KA / 1SEC. HDB DISCONNECTOR (MOTOR & MANUAL OPERATION) WITH T.E/S (MANUAL OPERATION)		1
3.	66kV, 1250A, 3PH, 25KA / 1SEC. HDB DISCONNECTOR (MOTOR & MANUAL OPERATION) WITHOUT E/S		1
4.	60kV, 3PH, 100A, LA, HEAVY DUTY, STATION CLASS, GAPLESS		3
5.	66kV, CURRENT TRANSFORMER (1-PH) 5-CORE, 600-400/1A		3
6.	66kV, CAPACITOR VOLTAGE TRANSFORMER (1-PH)		3

[illegible]



CQNEC - NHE CONSORTIUM

KATHMANDU

Tel: + 977 1 4785250
+ 977 1 4785136
Fax: + 977 1 4781851

PROJECT: SUPPLY, CONSTRUCTION & INSTALLATION OF 132/66 KV CHAPAL SUBSTATION & ASSOCIATED WORKS

CONTRACT NO: CHAEP -069/70-01

CHAPALI AUGMENTATION (132kV SUBSTATION EXPANSION) PROJECT
GRID DEVELOPMENT DEPARTMENT, NEA

SIGN

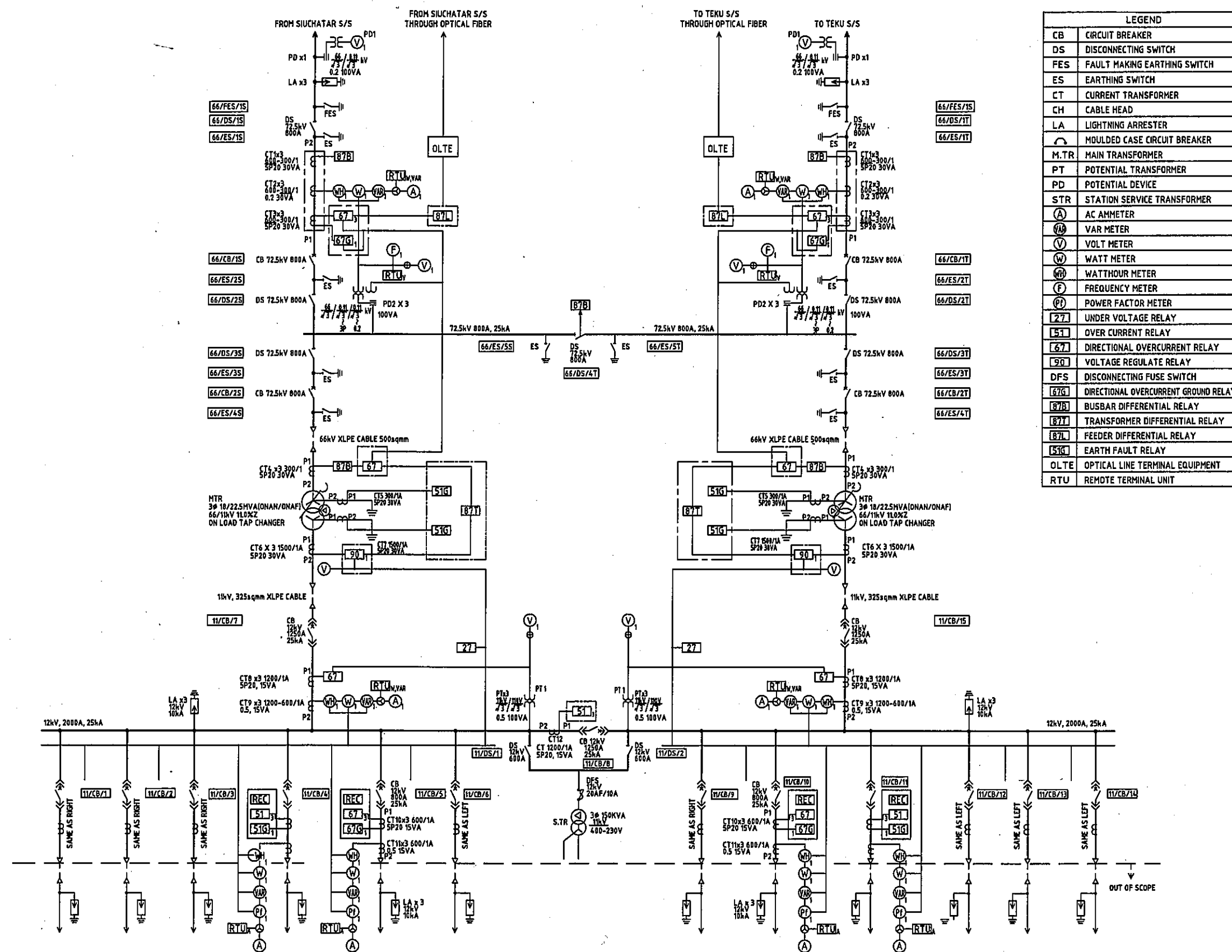
DATE
26/03/2015

General Line Diagram

CHAPALI SUBSTATION

Dwg No: CQNEC-NHE/CHAP/Elect-01
Sheet: 1 of 1 SCALE: NTS

ALL DIMENSIONS ARE IN mm.



REVISION				
Rev	Description	Date	Ch'kd	App'd
3	Changed Description	Mar.17.'05	H.A.	K.N.
2	Changed Description	Jul.23.'04	H.A.	K.N.
1	Changed Description	Jun.15.'04	H.A.	K.N.

Client
**The Kingdom of Nepal
Nepal Electricity Authority**

Project Name
K3 SUBSTATION PROJECT
**The Project for the Extension and
Reinforcement of Power Transmission
and Distribution System
in Kathmandu Valley (Phase III)**

Consultant
**Consortium of
Sumitomo Corporation and Kinden
Corporation Japan**

Drawing Title
**SINGLE LINE DIAGRAM
OF K3 SUBSTATION**

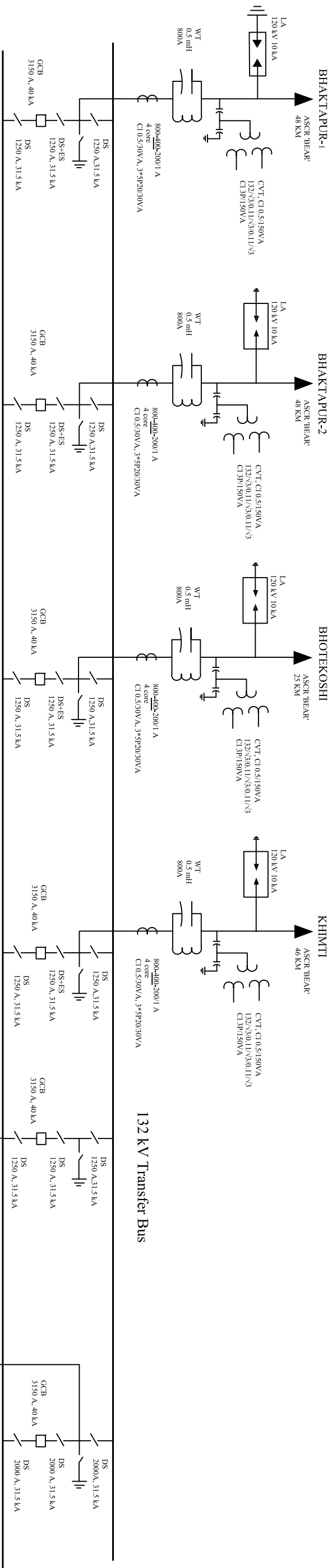
Size **A2** Scale **N/S** Signature *S. J. Hakinhi*

Drawing No.
K3-DIA-SIN-001

CHANGE
Changed Description
15/JUNE.'04 K. NODDA

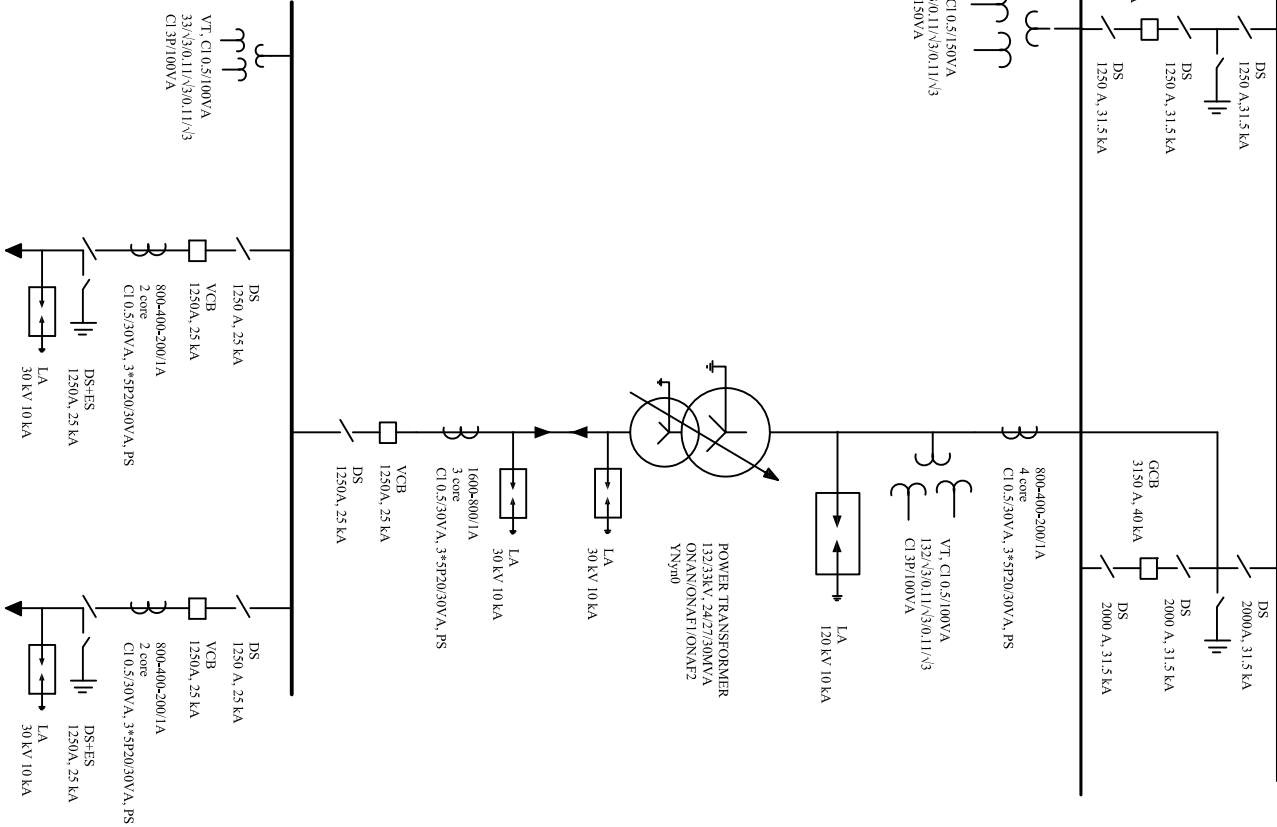
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SKIP	DUP												
APPROVED BY K. Noda May 19. '04		CHECKED BY H. Fujino May 19. '04		DESIGNED BY H. Arahawa May 19. '04		DRAWN BY H. Arahawa May 19. '04		TITLE K3 S/S Single Line Diagram					
DATE 19 APR 2004								DRAWING NO. K3-DIA-SIN-001					
								REV. MARK 3					

TMT&D
TMT&D Corporation



132 kV Main Bus

CVT, CI 0.5/150V A
132/√30.11/√30.11/√3
CI 3P/150V A



LAYOUT PLAN FOR ELECTRICAL WORKS AT LAMASANGHU SUBSTATION

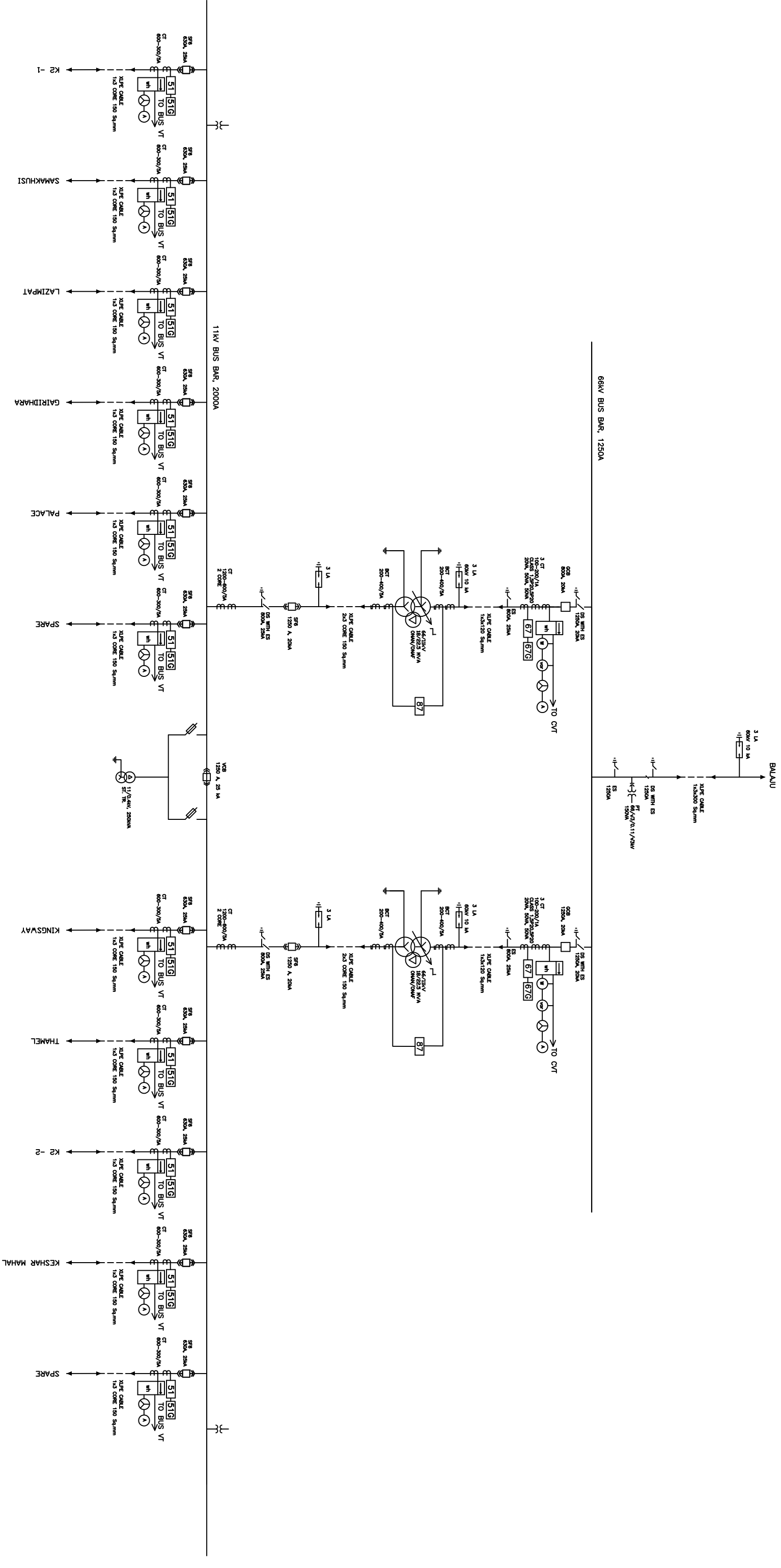
NEPAL ELECTRICITY AUTHORITY

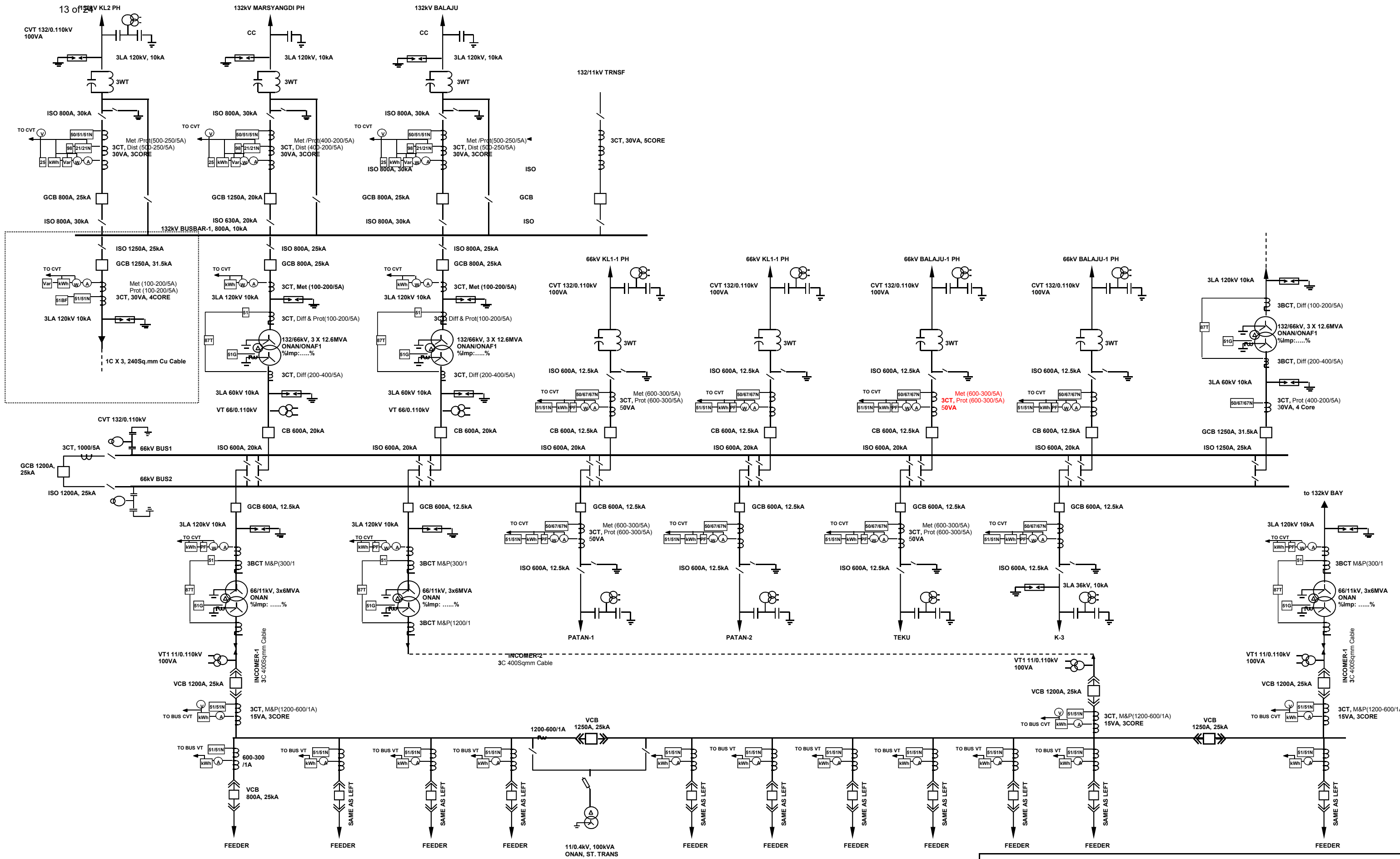
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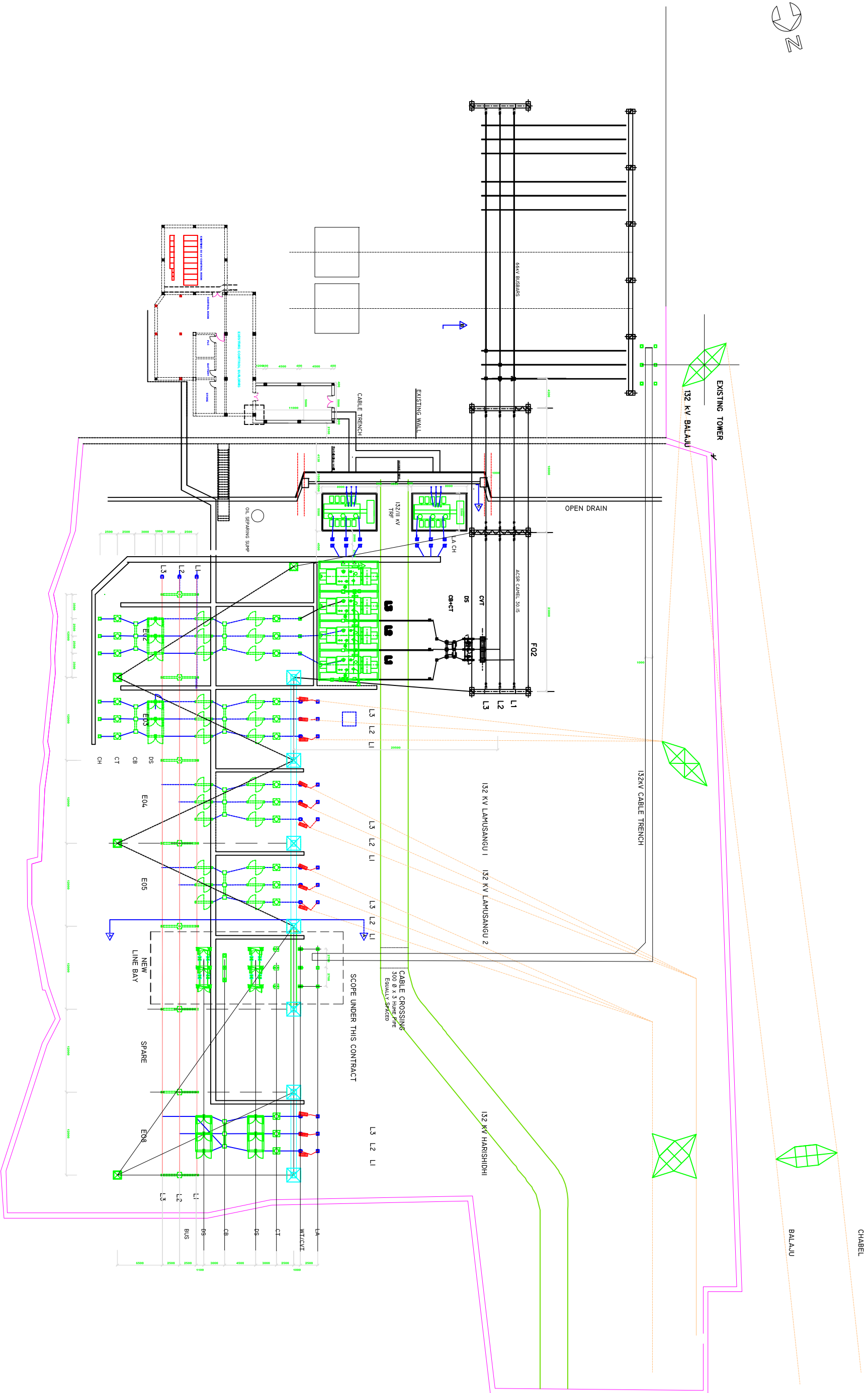
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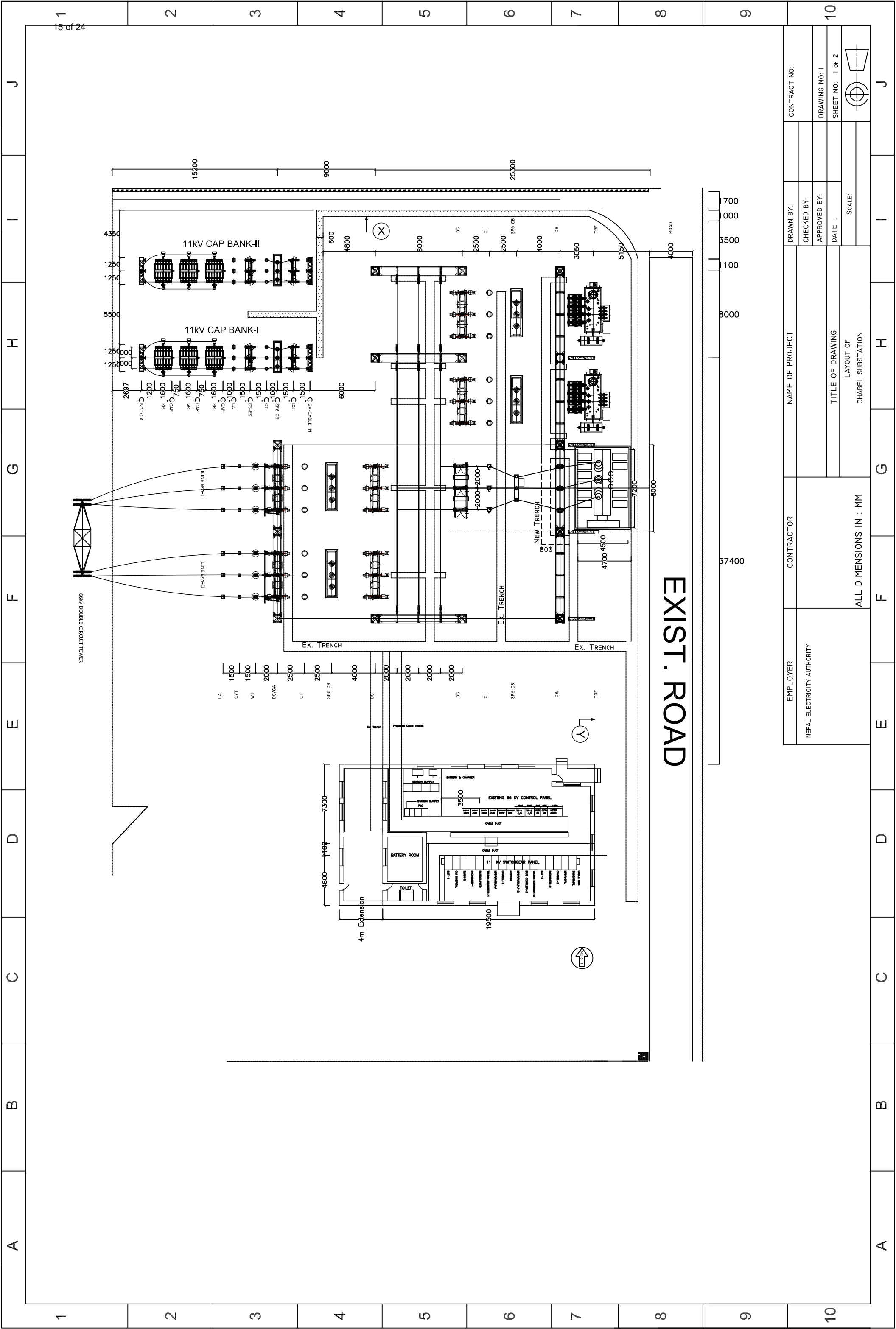



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				PROJECT: KATHMANDU VALLEY SUBSTATION AUTOMATION PROJECT			REF.	DRN	CHD	DATE

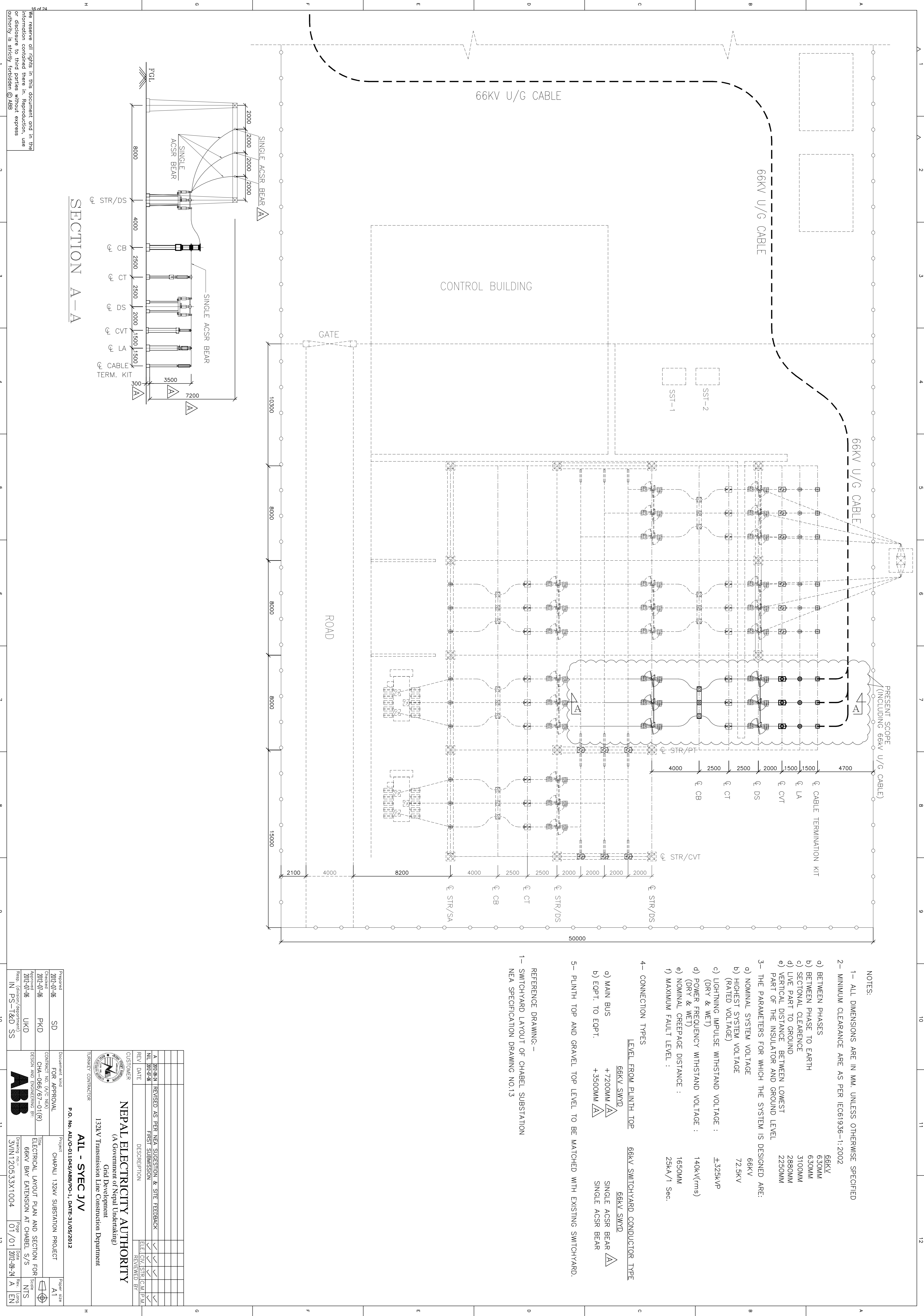


SIGN		DATE		LAYOUT PLAN		Sheet: 1 of 2		SCALE: 1:500 (A3)	
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CHD									
APPD									

ALL DIMENSIONS ARE IN mm.



NEPAL ELECTRICITY AUTHORITY	EMPLOYER	CONTRACTOR	NAME OF PROJECT		DRAWN BY:	CONTRACT NO:
					CHECKED BY:	
					APPROVED BY:	DRAWING NO: 1
			TITLE OF DRAWING		DATE :	SHEET NO: 1 of 2
			LAYOUT OF CHABEL SUBSTATION		SCALE:	
ALL DIMENSIONS IN : MM						



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SECTION A-A

Prepared
2012-07-06
Checked
2012-07-06
Approved
2012-07-06
Responsible (division/department)
IN PS-1&D SS

SD
PKD
UKD

Document kind
FOR APPROVAL

Contract No. (A/C NEA)
CHA-066/67-01(R)

Design and Engineering by
ABB

Project
CHAPALI 132kV SUBSTATION PROJECT

The
ELECTRICAL LAYOUT PLAN AND SECTION FOR
66kV BAY EXTENSION AT CHABEL S/S

Drawing no.-
3VIN120533X1004

Project
01/01

Date
2012-08-24

Rev.
A

Scale
N.T.S.

Unit
EN

Customer
NEPAL ELECTRICITY AUTHORITY
(A Government of Nepal Undertaking)
Grid Development
132kV Transmission Line Construction Department

Turnkey Contractor
AIL - SYEC J/V
P.O. No. A/UO-011045/ABR/PO-1, DATE-31/05/2012

REV	DATE	DESCRIPTION	REVIEWED BY
A	2012-07-06	REVISED AS PER NEA SUGGESTION & SITE FEEDBACK	✓
NIL	2012-07-06	FIRST SUBMISSION	✓

Customer
NEPAL ELECTRICITY AUTHORITY
(A Government of Nepal Undertaking)
Grid Development
132kV Transmission Line Construction Department

Turnkey Contractor
AIL - SYEC J/V
P.O. No. A/UO-011045/ABR/PO-1, DATE-31/05/2012

1- ALL DIMENSIONS ARE IN MM. UNLESS OTHERWISE SPECIFIED

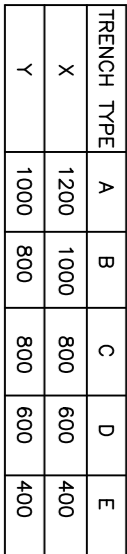
2- MINIMUM CLEARANCE ARE AS PER IEC61936-1:2002

3- THE PARAMETERS FOR WHICH THE SYSTEM IS DESIGNED ARE:
a) NOMINAL SYSTEM VOLTAGE 66kV
b) HIGHEST SYSTEM VOLTAGE (RATED VOLTAGE) 72.5kV
c) LIGHTNING IMPULSE WITHSTAND VOLTAGE : ±325kVp (DRY & WET)
d) POWER FREQUENCY WITHSTAND VOLTAGE : 140kV(rms) (DRY & WET)
e) NOMINAL CREEPAGE DISTANCE : 1650MM
f) MAXIMUM FAULT LEVEL : 25kA/1 Sec.

4- CONNECTION TYPES
LEVEL FROM PLINTH TOP 66kV SWBD 66kV SWITCHYARD CONDUCTOR TYPE
a) MAIN BUS 66kV SWBD +7200MM SINGLE ACSR BEAR
b) EQPT. TO EQPT. +3500MM SINGLE ACSR BEAR

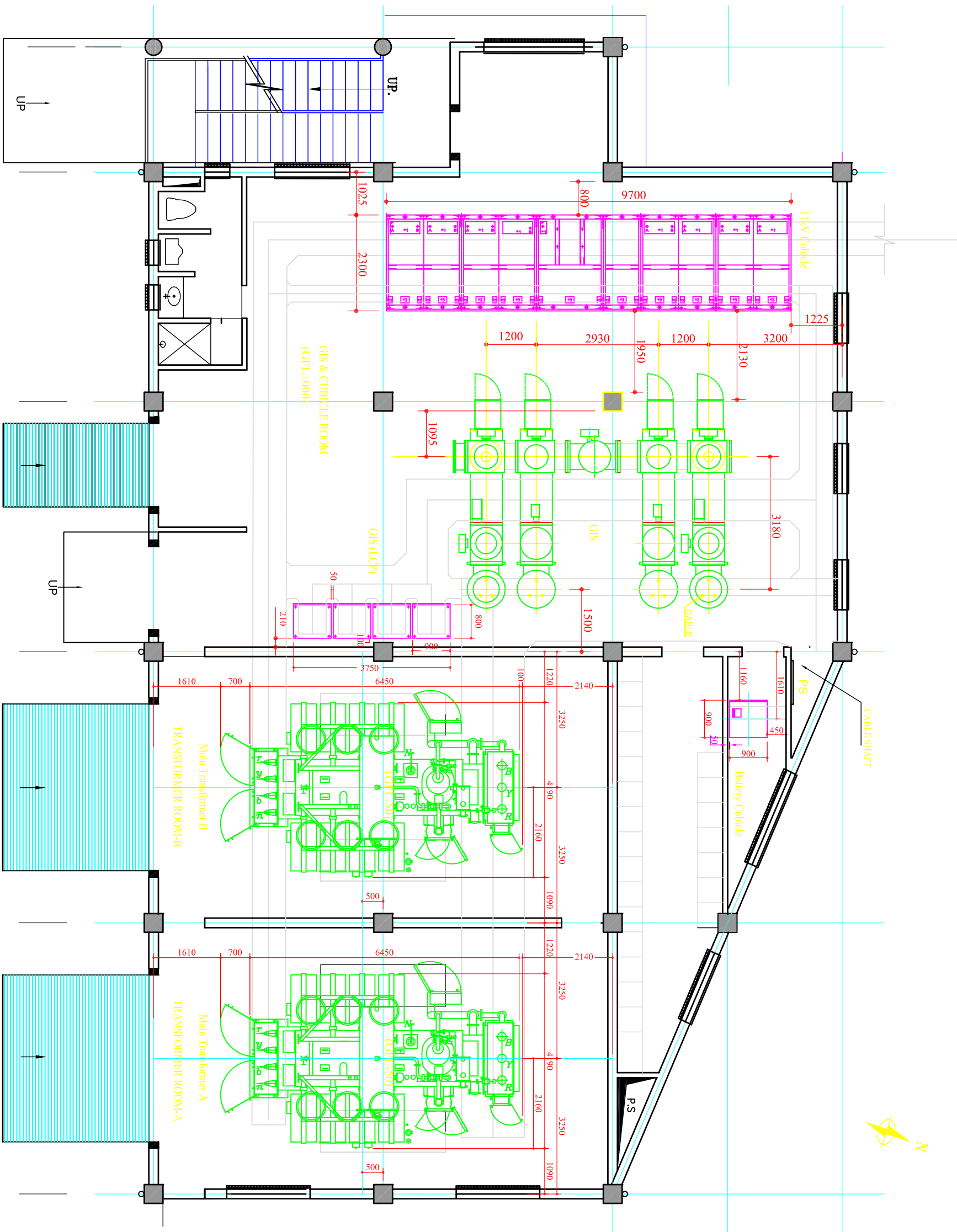
5- PLINTH TOP AND GRAVEL TOP LEVEL TO BE MATCHED WITH EXISTING SWITCHYARD.

REFERENCE DRAWING:-
1- SWITCHYARD LAYOUT OF CHABEL SUBSTATION
NEA SPECIFICATION DRAWING NO.13



PROJECT MANAGEMENT DIRECTORATE
KATHMANDU VALLEY SUBSTATION AUTOMATION PROJECT

PROJECT MANAGEMENT DIRECTORATE KATHMANDU VALLEY SUBSTATION AUTOMATION PROJECT			
	SIGN	DATE	<u>GENERAL LAYOUT</u> <u>CHAPALI SUBSTATION</u> Sheet: 1 of 1 SCALE: 1:350 (A1) ALL DIMENSIONS ARE IN mm.
DRN			
CHD			
APPD			



Legend

- 250 mm Brick Wall
- 120 mm Brick Wall
- RCC Column
- Cable Trench

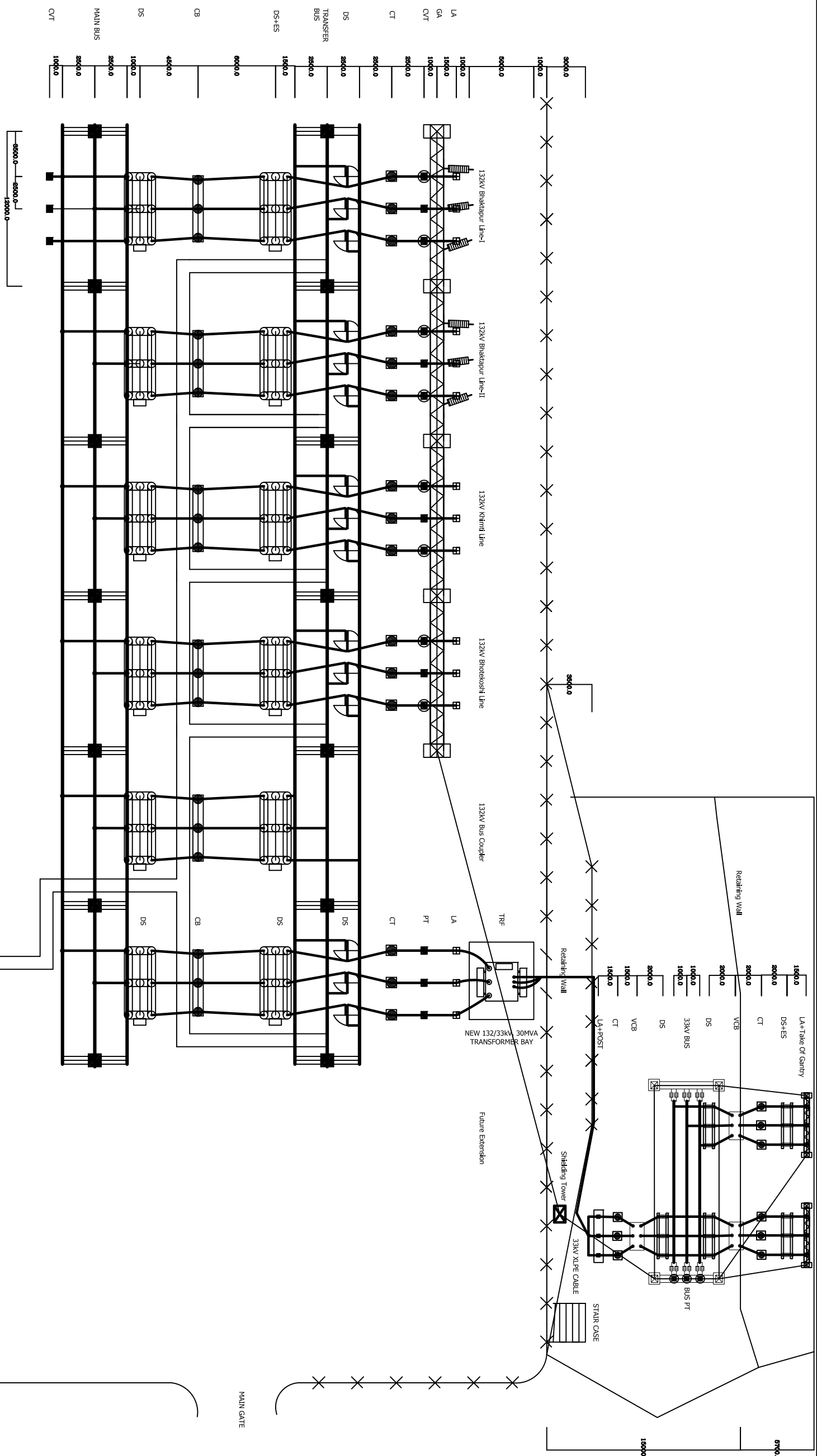
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REVISION	
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The Kingdom of Nepal
Nepal Electricity Authority

Consortium of
Sumitomo Corporation and Kinden
Corporation Japan

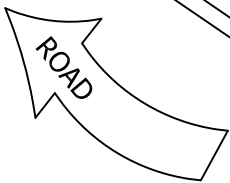
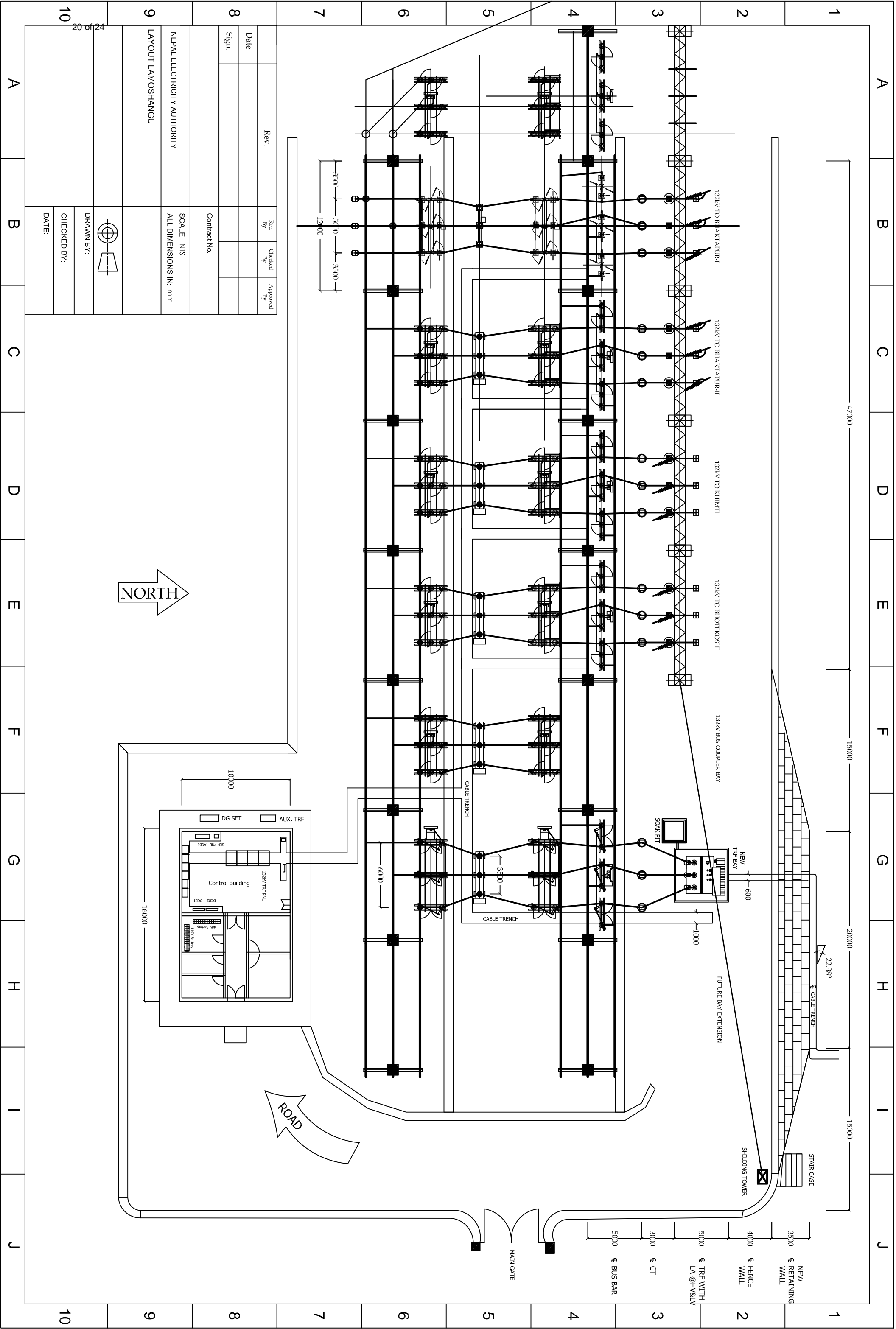
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A3	1/100	



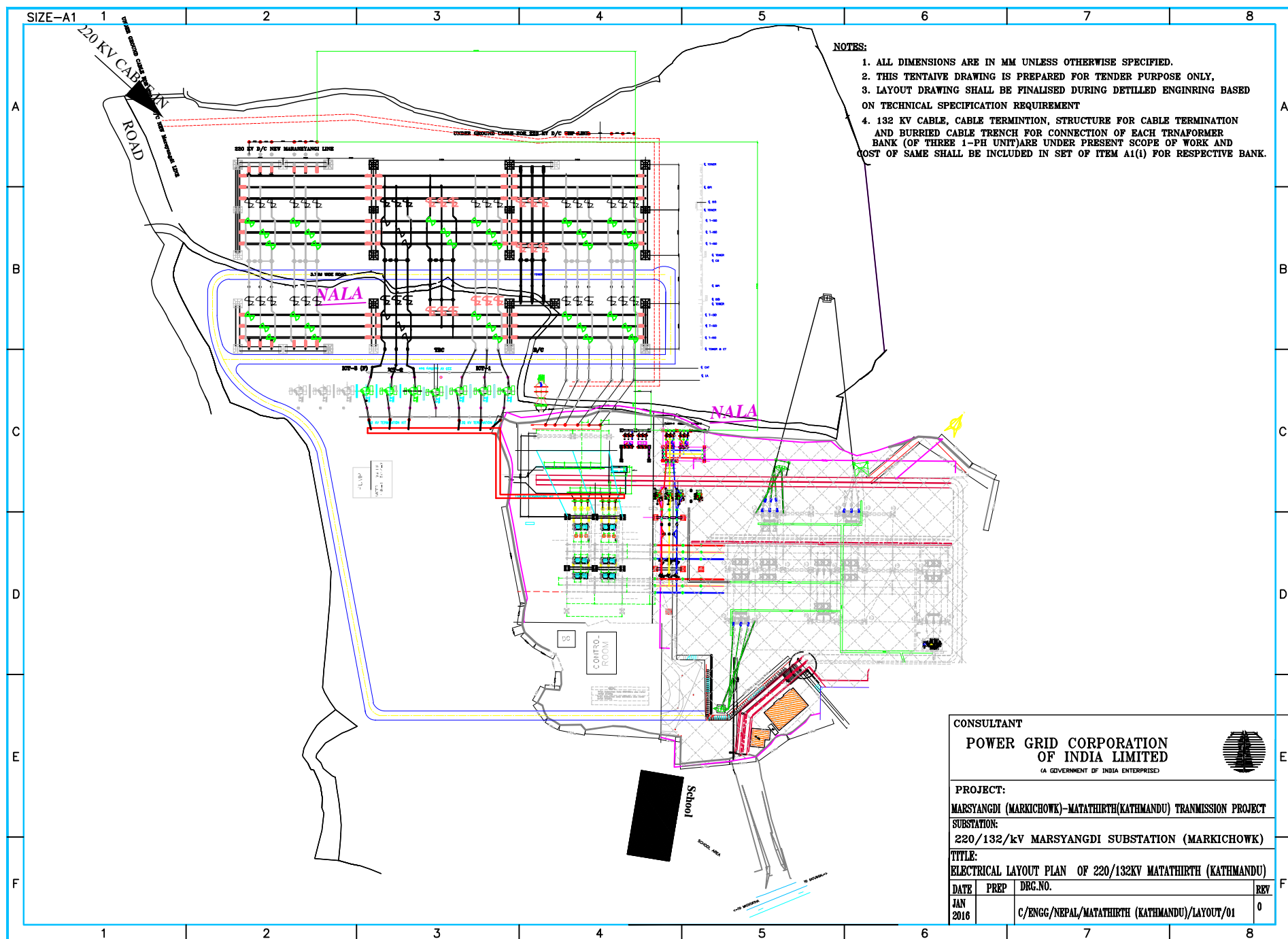
LAYOUT PLAN FOR ELECTRICAL WORKS AT LAMASANGHU SUBSTATION

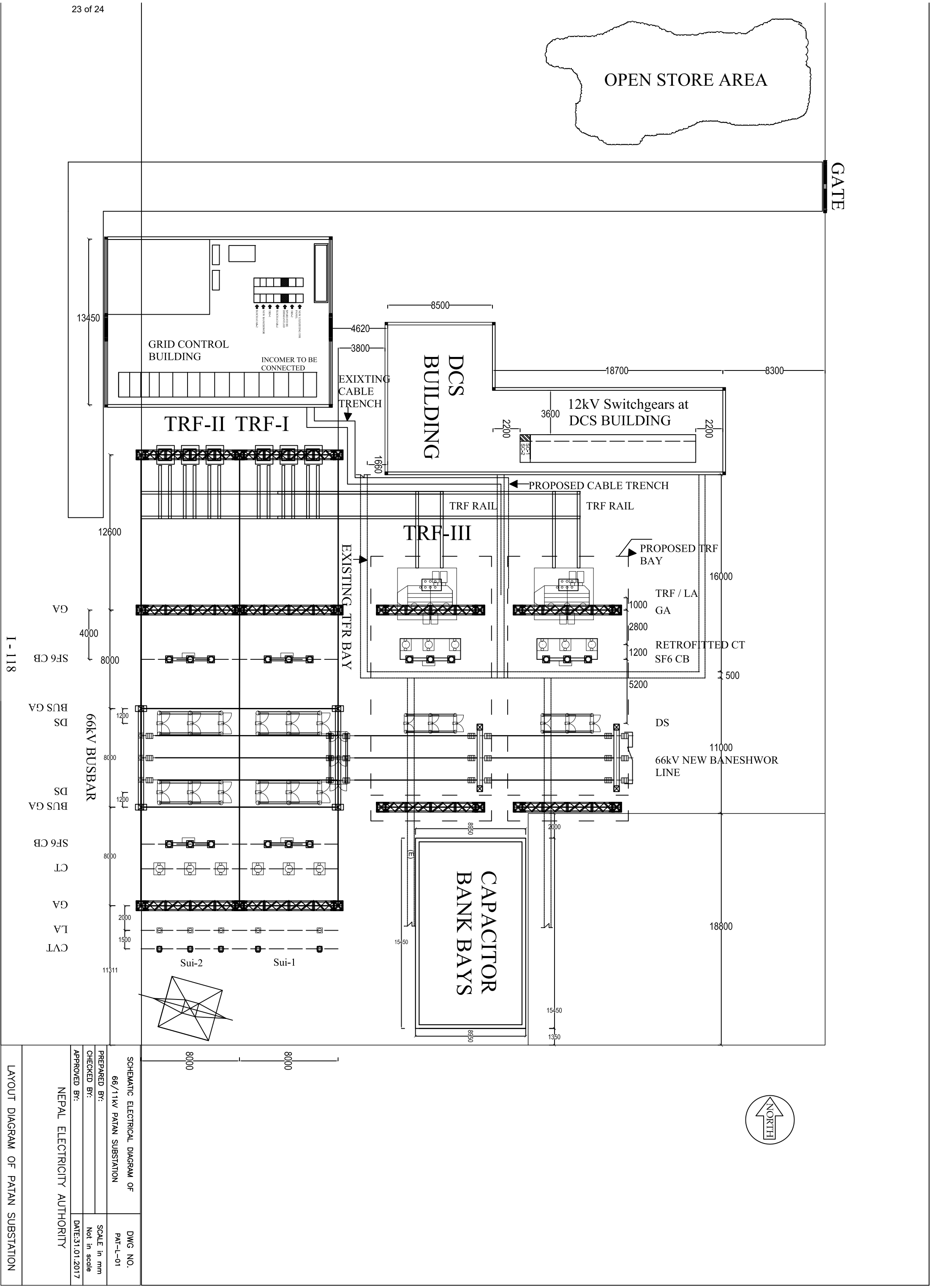
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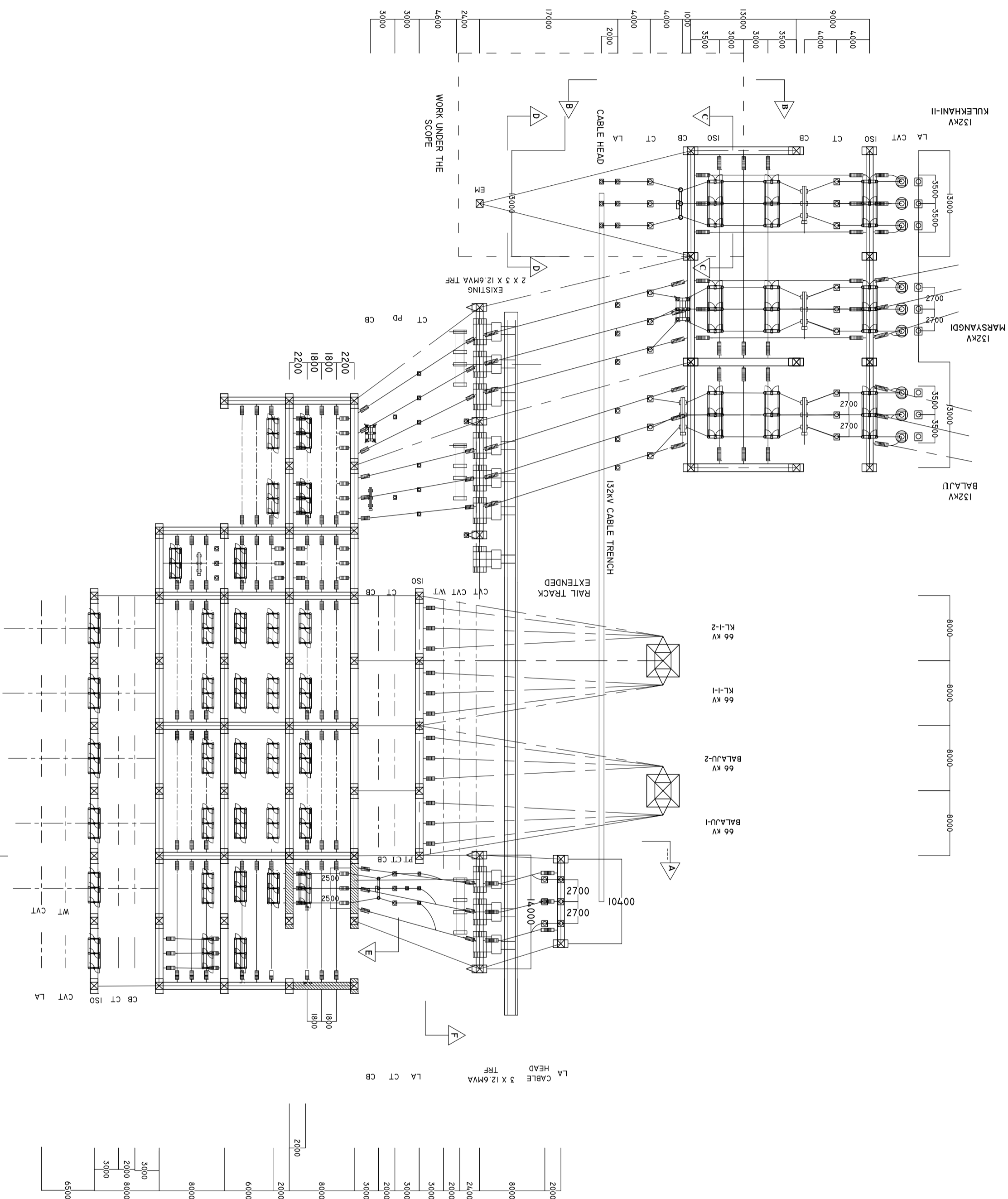
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CHECKED BY:			
APPROVED BY:			



Rev.	Rec. By	Checked By	Approved By
Date			
Sign.			
Contract No.			
SCALE: NTS			
NEPAL ELECTRICITY AUTHORITY			
ALL DIMENSIONS IN: mm			
LAYOUT LAMOSHANGU			
DRAWN BY:			
CHECKED BY:			
DATE:			







ASBUILT

PROJECT: KATHMANDU VALLEY S/S AUTOMATION PROJECT	
PROJECT MANAGEMENT DIRECTORATE	G
PTDEEP	

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Chapter 12- Video Projection System

INTRODUCTION AND GENERAL INFORMATION

This section describes the technical specifications for to the supply , installation ,testing and commissioning of Video projection System (VPS) at Master Control Center (MCC) at Baneshwor Substation.

1.1 Proposed system

1. Projection System of 1024X768 pixel, with 3X2 50" configuration.

1.3 Scope of Work

The scope of work shall include in complete conformity with the subsequent sections of this volume Design, Engineering, Supply, Delivery to site, Unloading, Storing, Insurance (Storage cum erection) ,Handling transportation to final location, Installation, Termination, Testing, Commissioning and Demonstration for acceptance including overall Project Management of following:

- a) 3X2 50" Configuration Video Projection system of 1024X768 pixel,
- b) Integration of Video Projection System with existing system
- c) Installation of one frequency meter along with VPS
- d) All cabling, wiring, and interconnections to the equipment being supplied and integrated (new and existing) at the defined interfaces.
- f) Preparation of equipment layout of the Control Room
- g) The contractor scope shall include training owner personnel for maintenance of system as per specification.

The bidder is requested to survey the site for VPS installation including furniture reorientation/replacement and submit the details along with the offer.

1.4.1 General Requirements

It should be noted that design information and bill of quantity are provisional only. The Contractor shall verify the input before detail engineering and finalise the BoQ as required for ultimate design & system performance.

The Bidder's proposal shall address all functional and performance requirements within this specification and shall include sufficient information and supporting documentation in order to determine compliance with this specification without further necessity for enquiries.

The Bidder's proposal shall clearly identify all features described in the specifications or in any supporting reference material that will not be implemented; otherwise, those features shall



become binding as part of the final contract.

An analysis of the functional and performance requirements of this specification during design, and engineering may lead the Contractor to conclude that additional items and services are required that are not specifically mentioned in this specification. The Contractor shall be responsible for providing at no additional cost to the Employer, all such items and services that are necessary to meet the specified capacity, and performance requirements. Such materials and services shall be considered to be within the scope of the contract. To the extent possible, the Bidders shall identify and include all such additional items (hardware / software) and services in their proposal.

All equipment provided shall be designed to interface with existing equipment and shall be capable of supporting all requirements including spare capacity identified in this specification.

The Contractor shall demonstrate compliance to specification and a specified level of performance of the offered items during well-structured tests.

1.5 General Responsibilities and Obligations

This section describes the general responsibilities and obligations of the Contractor and the Employer/Owner.

1.5.1 Responsibilities for the Implementation Plan

The contractor shall be responsible for development of detailed project implementation plan. The Implementation plan shall include the activities of both the Contractor and the Employer/owner, showing all key milestones such as facilities readiness and clearly identifying the nature of all information and project support expected from the Employer /owner. The Employer/owner and Contractor shall finalise the detailed Implementation plan following award of the contract.

1.5.2 Contractor's Responsibilities and Obligations

The Contractor shall be responsible for all cables and wiring associated with the equipment provided. The Contractor shall also be responsible for determining the adequacy of the local power source for the equipment and for wiring to it, with adequate circuit protective breakers. In addition, the Contractor shall be responsible for shielding equipment and cabling to eliminate potential interference to or from the equipment and for earthing of all cabinets and shields as required for system.

Training of the owner personnel for maintenance of the system such as replacement of Bulbs, filters, colour/brightness setting.

Hardware, software, and firmware maintenance, debugging, and support of the equipment through final acceptance, and maintenance on all new equipment as per specifications.

Availability of service and expansion parts for the supplied items for the complete design life of the project as per details in various parts of this specification.



2. Video Projection System (VPS)

The contractor shall provide a video projection system based on modular DLP (Digital Light Processing) technology and will be connected on the Existing Dual SCADA/EMS LAN. All the screen modules of the VPS system, shall be suitable to form combined high resolution projection images. All the screen modules of the VPS system will be with Dual LAMP facility and hot standby facility. The VPS system will be used to project displays of SCADA/EMS system independently of workstation console monitors.

2.1 General Requirements for VPS

The VPS shall be manufactured, fabricated, assembled with workmanship of the highest quality and shall conform to applicable quality control standards of the original equipment manufacturer (OEM) and the Contractor. All hardware components shall be new and suitable for the purposes specified and shall be of reputed make.

The contractor should ensure that all the above hardware are of current industry standard models and that the equipment manufacturer has not established a date for termination of its production at the time of approval.

2.1.1 Power supply requirement:

The VPS shall normally be supplied from a UPS (Uninterruptible Power supply) but at times may be connected directly to the utility raw power supply. It shall be capable of operating between $230\text{ V} \pm 10\%$ voltage range and a frequency range of $50 \pm 5\%$. The VPS system will be with Dual Power Supply facility.

2.1.2 Environmental requirements:

The VPS shall normally be provided an air-conditioned environment with temperature maintained between 16 degrees to 30 degrees centigrade. The VPS shall operate in a environment with relative humidity from 35% to 65% non-condensing.

2.2 Technical Requirements of Video Projection System (VPS)

The contractor shall provide a video projection system based on modular DLP (Digital Light Processing) technology. All the screen modules of the VPS system shall be suitable to form combined high resolution projection images. The VPS system will be used to project full graphic displays from computer system, pictures from a Video signal source and pictures from a RGB signal source simultaneously.

The VPS shall be used for round the clock Control room function. The Contractor shall supply all necessary hardware and software, including the multi-screen drivers, adapters and memory to seamlessly integrate the video projection system with the computer system for the user interface requirements. The contractor shall also supply all maintenance software for configuration, setup, debugging etc.

The Clock of the VPS shall be configured for synchronization with the Time synchronization



facility of MCC.

The video projection systems shall be rear projection systems and shall be complete with all projection modules, supporting structures and cabling. The VPS system requirements include:

- a) VPS screen shall form a seamless rectangular array using 3 X 2 modules mounted in a curved arrangement with 5 degree angle. b) The size of each VPS screen module shall be 50" diagonal. The screen shall be of high contrast black type. c) VPS system shall be interfaced with the MCC computer system through dual LAN connectivity.
- d) Each projector shall provide a minimum resolution of 1024X768 pixels per module. The rear projection screens shall be capable of displaying full resolution of the source.
- e) The VPS shall be capable of supporting multiple display modes in which one or more modules show one or more SLDC displays concurrently as selected by the user.
- f) The VPS shall have a horizontal and vertical viewing angle of approximately 160 degrees.
- g) The overall brightness of each individual module shall be 600 ANSI lumens screen output.
- h) The projection bulb shall have a rated operating life of 9,000 hours typical. i) The brightness uniformity shall be 90% from Centre to corner of the screen.
- j) The VPS controller shall have audio-video signal input module to interface with video conferencing equipment, CCTV, VCD/DVD players. The VPS controller shall support three types of video signal inputs (PAL, SECAM, NTSC) k) The VPS controller shall include an audio card and two external speakers having adequate sound output level (suitable for a control room of 10X10 Sq. meter). l) The VPS controller shall have one RGB input port for interfacing computer presentations. m) MS Windows based operating system shall be used for VPS system.

2.2.1 VPS consumables

The Contractor shall supply the following VPS consumables for future use: a) VPS bulbs – 12 nos. b) VPS Dust filters (if applicable) – 12 nos.

2.2.2 VPS Documentation

The following documents for the VPS shall be provided by the Contractor: a) VPS system overview document

- b) VPS operating manual
- c) VPS Installation document
- d) VPS software and interface documents

2.2.3 VPS Inspection and Testing

The VPS shall be inspected and tested by the manufacturer at his works and test reports shall be submitted for approval before dispatch to verify its compliance with this technical specification. Deliverables shall not be shipped until all required inspections and tests have been completed, all deficiencies have been corrected to Employer's satisfaction, and the equipment has been approved for shipment by Employer.

After installation at site, the VPS will be tested for successful integration with the SLDC computer system.



2.3 Frequency Display:-

The display for frequency shall be in the XX.XXX Hz Format and the input will be taken from the raw input power supply provided by the owner. Each digit of all the indicators shall be at least 7.5 cm in Height and shall be bright enough. All required interface in this regard shall be included in the scope of supply.

2.5 Maintenance of the VPS system

The Contractor shall be responsible for its maintenance during warranty period including supply of spares or consumables, if required, without any cost implication to the Employer.

Under the AMC, the Contractor shall supply all consumables and spares as required to maintain the VPS.

The contractor shall be responsible for achieving system availability of 98%.

On call response time shall be 4 hrs during 9.00 AM to 5.30 PM five (5) days per week (Monday through Friday) except on public and company holidays and 1 day for other days.

2.6 Bill of Quantity

- a) VPS based on DLP (3X2) modules, each module of 50"
- b) Frequency Display system
- c) Re orientation of including cabling modification.
- d) VPS consumables
- e) One year warranty/Maintenance
- f) Four year AMC (after the one year Warranty period)

