NEPAL ELECTRICITY AUTHORITY

(A Government of Nepal Undertaking)

Generation Directorate

Large Generation, Operation and Maintenance Department

Kaligandaki 'A' Hydro Power Station

Beltari, Syangja, Nepal

BIDDING DOCUMENT

For

THE PROCUREMENT OF

SUPPLY, DELIVERY, INSTALLATION, TESTING AND COMMISSIONING OF STATOR WINDINGS FOR 56.5 MVA SYNCHRONOUS HYDRO GENERATORS AT KALIGANDAKI 'A' HYDROPOWER STATION

International Competitive Bidding (ICB)

Single Stage: Two-Envelope Bidding Procedure

Issued on: 19th November, 2025
Invitation for Bids No.: NEA-KGA-ICB-2082/83-01/RE
Employer: Nepal Electricity Authority, Kaligandaki 'A' Hydropower Station
Country: Nepal

Nepal Electricity Authority
Kaligandaki 'A' Hydro Power Station
Beltari, Syangja, Nepal.
Tel.: + 977 9856003147 / (01) 4153070

Electronic mail address: kaligandaki@nea.org.np, kaligandaki144@gmail.com

November, 2025

Abbreviations

AC……Alternating Current
BD……. Bidding Document
BDS……Bid Data Sheet
BOQ ……...Bill of Quantities
CT …….....Current Transformer
DC ……...Direct Current
DCS ……Delivery and Completion Schedule
DP ...……...…… Development Partner
EOT ……Electric Overhead Traveling (Crane)
EQC ……Evaluation and Qualification Criteria
FAT ……Factory Acceptance Test
GCC ……General Conditions of Contract
GD² ……. Flywheel Effect (Moment of Inertia)
GoN ……. Government of Nepal
HV ……...…High Voltage
Hz ……. Hertz (Frequency)
ICC ……International Chamber of Commerce
IEC ……International Electrotechnical Commission
IEEE ……. Institute of Electrical and Electronics Engineers
IFB ……..…. Invitation for Bids
IC ……. Insulation Class (Cooling Method)
IR ……. Insulation Resistance
ITB ……Instructions to Bidders
JC ……. Joint Committee (Standards)
kV ……..…Kilovolt
kVA ……. Kilovolt-Ampere
kW ……Kilowatt
LGRS ……List of Goods and Related Services
LV ……..…Low Voltage
MCE ……...…Maximum Credible Earthquake

MVA ……. Megavolt-Ampere
NCB ……..…. National Competitive Bidding
NEA ……. Nepal Electricity Authority
NGR ……Neutral Grounding Resistor
OBE ……Operating Basis Earthquake
OEM ……Original Equipment Manufacturer
PAN ……Permanent Account Number
PD ……...Partial Discharge
PI ……...……. Polarization Index
PPMO …….……Public Procurement Monitoring Office
Pt100 RTD ……...Platinum Resistance Temperature Detector
QAP …….……Quality Assurance Plan
RCT …….……Roebel Coil Type
RPM …….……Revolutions Per Minute
RTD …….……Resistance Temperature Detector
SAT …….……Site Acceptance Test
SBD …….……Standard Bidding Document
SBQ …….……Schedule of Bidder Qualifications
SCC …….……Special Conditions of Contract
SR ……Schedule of Requirements
SSG …….……Speed Signal Generator
THD ……Total Harmonic Distortion
THF ……..…Telephone Harmonic Factor
TS ……Technical Specifications
Un ……Rated Voltage
VAT ……Value Added Tax
VL ……...Line Voltage
W ……Watt
X"d ……..…Sub transient Reactance (Direct Axis)
X'd ……...…Transient Reactance (Direct Axis)
Xd ……...Synchronous Reactance (Direct Axis)

Table of Contents

Re-Invitation for Bids

NEPAL ELECTRICITY AUTHORITY

(A Government of Nepal Undertaking)

Generation Directorate

Durbar Marg, Kathmandu, Nepal

Invitation for Bids for procurement of **SUPPLY, DELIVERY, INSTALLATION, TESTING AND COMMISSIONING OF STATOR WINDINGS FOR 56.5 MVA SYNCHRONOUS HYDRO GENERATORS AT KALIGANDAKI 'A' HYDROPOWER STATION**

Invitation for Bids No: NEA-KGA-ICB-2082/83-01/RE

Date of publication: 19th November, 2025

1. **Nepal Electricity Authority** has allocated funds or received a loan/credit/grant from its own resources towards the budget of **Kaligandaki 'A' Hydropower Station** and intends to apply part of the funds to cover eligible payments under the Contract for Procurement of **Supply, Delivery, Installation, Testing and Commissioning of Stator Windings FOR 56.5 MVA Synchronous Hydro Generators at Kaligandaki 'A' Hydropower Station (IFB No.: NEA-KGA-ICB-2082/83-01/RE)**. Bidding is open to all eligible Nepalese and Foreign Bidders.
2. **Nepal Electricity Authority** invites electronic bids from eligible bidders for the above mentioned works under **International Competitive Bidding – Single Stage Two Envelope.**
3. Under the Single Stage, Two Envelope Procedure, Bidders are required to submit simultaneously two separate sealed envelopes, one containing (i) the Technical Bid and the other (ii) the Price Bid, both in turn enclosed in one sealed envelope as per the provision of ITB 23 of the Bidding Document.
4. Eligible Bidders may obtain further information and inspect the bidding documents at the office of Kaligandaki 'A' Hydropower Station (Contact details provided below) or may visit PPMO egp system www.bolpatra.gov.np/egp
5. Bidder must submit their bid electronically and should download the bidding documents for e-submission from PPMO's e-GP system https://www.bolpatra.gov.np/egp/. Bidders, submitting their bid, must deposit the cost of bidding document, a non-refundable fee of NRs. 20,000.00/- or equivalent US$ as the cost of bidding document in the office's Rajaswa (revenue) account as specified below:

   Information to deposit the cost of bidding document in Bank:

   Name of the Bank: Siddhartha Bank Ltd., Hattisar, Kathmandu

   Name of Office: NEPAL ELECTRICITY AUTHORITY, Ratnapark, Kathmandu

   Office Account no.: 00119093248
6. Electronics bids must be submitted through PPMO's e-GP system https://www.bolpatra.gov.np/egp on or before 12:00 noon on December 10, 2025. Bids received after this deadline will be rejected.
7. The Technical bids will be opened in the presence of Bidders' representatives who choose to attend at 14:00 hours on December 10, 2025. at the office of NEPAL ELECTRICITY AUTHORITY,

Generation Directorate, Durbar Marg, Kathmandu, Nepal Bids must be valid for a period of 120 days after bid opening. and must be accompanied by a bid security or scanned copy of the bid security in pdf format in case of e-bid, amounting to a minimum of ***USD. 150,000/-*** or an equivalent amount in NRs. @Exchange rate (sell) of Nepal Rastra Bank 30 days prior to the original deadline for Bid Submission which shall be valid for 30 days beyond the validity period of the bid. If the bank guarantee is issued by a foreign bank, it shall be counter guaranteed by a Commercial Bank or Financial institution eligible to issue Bank Guarantee as per prevailing Law in Nepal. Financial Bids shall remain unopened until the second public Bid opening.

8. If the last date of purchasing and /or submission falls on a government holiday, then the next working day shall be considered as the last date. In such case the validity period of the bid and bid security shall remain the same as specified for the original last date of bid submission.

Tender No.	**Last date of Bid Submission**	**Bid Opening Date and Time**	**Cost of Bidding Document (NRs.)**	**Bid Bond (USD.)**	**Bid Bond Validity**
NEA-KGA-ICB-2082/83-01/RE	Before 12:00 noon on December 10, 2025	14:00 hours on December 10, 2025.	20,000/-	$ 150,000 /-	150 days from the last date of Bid submission

NEPAL ELECTRICITY AUTHORITY
Generation Directorate
Large Generation Operation and Maintenance Department
Kaligandaki 'A' Hydropower Station
Beltari, Syangja, Nepal
Tel: + 977 (063) 40308301/ (01) 4153014
Mobile No.: +977-9856003147

(Section I) Instructions to Bidders

Section I. Instructions to Bidders

Table of Clauses

Section I. Instructions to Bidders

A. General

1. Scope of Bid	1.1 In connection with the Invitation for Bids ***indicated in the Bid Data Sheet (BDS)***, the Purchaser as ***indicated in the BDS*** issues this Bidding Document for the supply of Goods and Related Services incidental thereto as specified in Section V, Schedule of Requirements. The name, identification, and number of contracts (packages/lots) are ***indicated in BDS***. 1.2 Throughout this Bidding Document : (a) the term "in writing" means communicated in written form with proof of receipt; (b) if the context so requires, singular means plural and vice versa; and (c) "day" means calendar day.
2. Source of Funds	2.1 GoN Funded: In accordance with its annual program and budget, approved by the GoN, the Purchaser intends to apply a portion of the allocated budget to eligible payments under the contract(s) ***indicated in the BDS*** for which this Bidding Document is issued. Or DP Funded: The GoN has applied for or received financing (hereinafter called "funds") from the Development Partner (hereinafter called "the DP") ***indicated in the BDS*** toward the cost of the project ***named in the BDS***. The GoN intends to apply a portion of the funds to eligible payments under the contract(s) for which this Bidding Document is issued. 2.2 DP Funded: Payment by the DP will be made only at the request of the GoN and upon approval by the DP in accordance with the terms and conditions of the financing agreement between the GoN and the DP (hereinafter called the "Loan Agreement"), and will be subject in all respects to the terms and conditions of that Loan Agreement. No party other than the GoN shall derive any rights from the Loan Agreement or have any claim to the funds.
3. Fraud and Corruption	3.1 Procuring Entities as well as Bidders, suppliers and contractors and their sub-contractors shall adhere to the highest standard of ethics during the procurement and execution of such contracts. In pursuance of this:; (a) the Purchaser adopts, for the purposes of this provision, the terms as defined below:

	(i) "corrupt practice" means the offering, giving, receiving, or soliciting, directly or indirectly, anything of value to influence improperly the actions of another party; (ii) "fraudulent practice" means any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation; (iii) "coercive practice" means impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party; (iv) "collusive practice" means an arrangement between two or more parties designed to achieve an improper purpose, including influencing improperly the actions of another party. (v) "obstructive practice" means (a) deliberately destroying, falsifying, altering, or concealing of evidence material to an investigation; (b) making false statements to investigators in order to materially impede an investigation; (c) failing to comply with requests to provide information, documents, or records in connection with an investigation; (d) threatening, harassing, or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or (e) materially impeding GoN/DP's contractual rights of audit or access to information; and (vi) "integrity violation" is any act which violates Anticorruption Policy, including (i) to (v) above and the following: abuse, conflict of interest, violations of GoN/DP sanctions, retaliation against whistleblowers or witnesses, and other violations of Anticorruption Policy, including failure to adhere to the highest ethical standard. (b) the Purchaser will reject a proposal for award if it determines that the Bidder recommended for award has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations in competing for the contract;
	(c) DP will cancel the portion of the financing allocated to a contract if it determines at any time that representative(s) of the GoN or of a beneficiary of DP-financing engaged in corrupt, fraudulent, collusive, or coercive practices or other integrity violations during the procurement or the execution of that contract, without the GoN having taken timely and appropriate action satisfactory to DP to remedy the situation. (d) DP will impose remedial actions on a firm or an individual, at any time, in accordance with DP's Anticorruption Policy and related Guidelines (as amended from time to time), including declaring ineligible, either indefinitely or for a stated period of time, to participate in DP-financed, -administered, or -supported activities or to benefit from an DP-

	financed, -administered, or -supported contract, financially or otherwise, if it at any time determines that the firm or individual has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices or other integrity violations; and (e) The Supplier shall permit the GoN/DP to inspect the Supplier's accounts and records relating to the performance of the Supplier and to have them audited by auditors appointed by the GoN/DP, if so required by the GoN/DP.
	3.2 The Bidder shall not carry out or cause to carry out the following acts with an intention to influence the implementation of the procurement process or the procurement agreement: (a) give or propose improper inducement directly or indirectly, (b) distortion or misrepresentation of facts, (c) engaging in corrupt or fraudulent practice or involving in such act, (d) interference in participation of other competing bidders, (e) coercion or threatening directly or indirectly to cause harm to the person or the property of any person to be involved in the procurement proceedings, (f) collusive practice among bidders before or after submission of bids for distribution of works among bidders or fixing artificial/uncompetitive bid price with an intention to deprive the Purchaser the benefit of open competitive bid price, (g) Contacting the Purchaser with an intention to influence the Purchaser with regards to the bids or interference of any kind in examination and evaluation of the bids during the period from the time of opening of the bids until the notification of award of contract.
	3.3 PPMO, on the recommendation of the Procuring Entity may blacklist a Bidder for a period of one (1) to three (3) years for its conduct including on the following grounds and seriousness of the act committed by the bidder: (a) if convicted by a court of law in a criminal offence which disqualifies the Bidder from participating in the contract, (b) if it is established that the contract agreement signed by the Bidder was based on false or misrepresentation of Bidder's qualification information, (c)if it at any time determines that the firm has, directly or through an agent, engaged in corrupt, fraudulent, collusive, coercive, or obstructive practices in competing for, or in executing, a GoN/DP-financed contract. (d) if the Successful Bidder fails to sign the Contract.
	3.4 A bidder declared blacklisted and ineligible by the GoN, Public Procurement Monitoring Office (PPMO) and/or the DP in case of DP funded project, may be ineligible to bid for a contract during the period of time determined by the GoN, PPMO and/or the DP including credit information bureau of Nepal.

	3.5 In case of a natural person or firm/institution/company which is already declared blacklisted and ineligible by the GoN, any other new or existing firm/institution/company owned partially or fully by such Natural person or Owner or Board of director of blacklisted firm/institution/company; shall not be eligible bidder.
	3.6 Furthermore, Bidders shall be aware of the provisions of GCC 34.1(c).
4. Eligible Bidders	4.1 This Invitation for Bids is open to eligible Bidders from all countries, except for any ***specified in the BDS***. 4.2 A Bidder may be a natural person, private entity, government-owned entity (subject to ITB 4.5) or any combination of them with a formal intent to enter into an agreement or under an existing agreement in the form of a Joint Venture (JV). Maximum number of parners in JV shall be as **specified in BDS**. In the case of a JV: (a) all parties to the JV shall be jointly and severally liable; and (b) a JV shall nominate a representative who shall have the authority to conduct all businesses for and on behalf of any and all the parties of the JV during the bidding process and, in the event the JV is awarded the Contract, during contract execution. 4.3 A Bidder shall not have a conflict of interest. Any Bidders found to have a conflict of interest shall be disqualified. A Bidder may be considered to be in a conflict of interest with one or more parties in this bidding process if, including but not limited to: (a) have controlling shareholders in common; (b) receive or have received any direct or indirect subsidy from any of them; (c) have the same legal representative for purposes of this Bid; (d) have a relationship with each other, directly or through common third parties, that puts them in a position to have access to information about or influence on the Bid of another Bidder, or influence the decisions of the Purchaser regarding this bidding process; (e) a Bidder participates in more than one bid in this bidding process. Participation by a Bidder in more than one Bid will result in the disqualification of all Bids in which it is involved. However, this does not limit the inclusion of the same subcontractor, not otherwise participating as a Bidder, in more than one bid; or (f) a Bidder or any of its affiliates participated as a consultant in the preparation of the design or technical specifications of the goods and services that are the subject of the bid.

	(g) a Bidder that has a close business or family relationship with a professional staff of the Procuring Entity. 4.4 A Bidder that is under a declaration of ineligibility by the GoN/DP in accordance with ITB 3.4, at the date of the deadline for bid submission or thereafter, shall be disqualified. The list of debarred firms is available at the electronic address **specified in the BDS**. 4.5 A GoN-owned enterprise may also participate in the bid if it is legally and financially autonomous, it operates under commercial law, and it is not dependent agency of the Purchaser. 4.6 Bidders shall provide such evidence of their continued eligibility satisfactory to the Purchaser, as the Purchaser shall reasonably request. 4.7 Firms shall be excluded in any of the cases, if (a) by an act of compliance with a decision of the United Nations Security Council taken under Chapter VII of the Charter of the United Nations prohibits any import of goods or Contracting of works or services from that country or any payments to persons or entities in that country. (b) DP Funded: as a matter of law or official regulation, GoN prohibits commercial relations with that country, provided that the DP is satisfied that such exclusion does not preclude effective competition for the supply of goods or related services required; (c) DP Funded: a firm has been determined to be ineligible by the DP in relation to their guidelines or appropriate provisions on preventing and combating fraud and corruption in projects financed by them.
	4.8 A bidder and all parties constituting the Bidder shall have the nationality of an eligible country as defined by the concerned DP for DP funded projects. 4.9 The domestic Bidder who has obtained Permanent Account Number (PAN) and Value Added Tax (VAT) registration certificate(s) and Tax clearance certificate or proof of submission of tax return from the Inland Revenue Office shall only be eligible. The foreign bidder submitting the documents ***indicated in the BDS*** at the time of bid submission and a declaration to submit the document(s) ***indicated in the BDS*** at the time of contract agreement shall only be eligible. 4.10 In case a prequalification process has been conducted prior to the bidding process, this bidding is open only to prequalified Bidders.
5. Eligible Goods and Related Services	5.1 All goods and related services to be supplied under the contract are eligible, unless their origin is from a country ***specified in the BDS***. 5.2 For purposes of this clause, "origin" means the place where the goods are mined, grown, or produced, or the place from which the related services are supplied

	5.3 The nationality of the firm/Bidder that produces, assembles, distributes, or sells the goods shall not determine their origin.
6. Site Visit	6.1 For goods contracts requiring installation/ commissioning/ networking or similar services at site, the Bidder, at the Bidder's own responsibility and risk, is encouraged to visit and examine the Site and obtain all information that may be necessary for preparing the Bid and entering into a contract for the supply of goods and related services. 6.2 The Bidder should ensure that the Purchaser is informed of the visit in adequate time to allow it to make appropriate arrangements. 6.3 The costs of visiting the Site shall be at the Bidder's own expense.

B. Contents of Bidding Document

7. Sections of the Bidding Document	7.1 The Bidding Document consist of Parts 1, 2, and 3, which include all the Sections indicated below, and should be read and construed in conjunction with any Addenda issued in accordance with ITB 9. **PART 1 Bidding Procedures** • Section I. Instructions to Bidders (ITB) • Section II. Bid Data Sheet (**BDS**) • Section III. Evaluation and Qualification Criteria • Section IV. Bidding Forms **PART 2 Supply Requirements** • Section V. Schedule of Requirements **PART 3 Conditions of Contract and Contract Forms** • Section VI. General Conditions of Contract (GCC) • Section VII. Special Conditions of Contract (SCC) Section VIII. Contract Forms 7.2 The Purchaser will reject any Bid submission (in case of hard copy submission) if the Bidding Document was not purchased directly from the Purchaser, or through its assigned office as stated in the invitation for bids or has not deposited (in case of electronically submission) the cost of Bidding Document as stated in the invitation for bids. 7.3 The Bidder is expected to examine all instructions, forms, terms, and specifications in the Bidding Document as well as in Amendments, if any. Failure to furnish all information or documentation required by the Bidding Document may result in the rejection of the Bid. 7.4 The Invitation for Bids issued by the Purchaser is not part of the Bidding Document

8. Clarification of Bidding Document/ Pre-bid meeting	8.1 A prospective Bidder requiring any clarification of the Bidding Document shall contact the Purchaser in writing at the Purchaser's address ***indicated in the BDS*** or raise any question or curiosity during the pre-bid meeting if provided for in accordance with ITB 8.2. The Purchaser will respond in writing to any request for clarification, provided that such request is received within the time limit ***specified in the BDS*** prior to the deadline for submission of Bids. The Purchaser shall forward copies of its response to all Bidders who have acquired the Bidding Document directly from it, including a description of the inquiry but without identifying its source. Should the Purchaser deem it necessary to amend the Bidding Document as a result of a clarification, it shall do so following the procedure under ITB 9 and 24.2. 8.2 The purchaser may organize a pre-bid meeting of Bidders at least fifteen (15) days before the deadline for submission of Bids at the place, date, and time as ***specified in the BDS*** to provide information relating to Bidding Documents, Technical specifications and the like matters. Should the purchaser deem it necessary to amend the Bidding Document as a result of a clarification, it shall do so following the procedure under ITB 9 and ITB 24.2.
9. Amendment of Bidding Document	9.1 At any time prior to the deadline for submission of the Bids, the Purchaser may amend the Bidding Document by issuing addenda. 9.2 Any addendum issued shall be part of the Bidding Document and shall be communicated in writing to all who have obtained the Bidding Document directly from the Purchaser. 9.3 To give prospective Bidders reasonable time in which to take an addendum into account in preparing their Bids, the Purchaser may, at its discretion, extend the deadline for the submission of the Bids, pursuant to ITB 24.2.

C. Preparation of Bids

10. Cost of Bidding	10.1 The Bidder shall bear all costs associated with the preparation and submission of its Bid, and the Purchaser shall not be responsible or liable for those costs, regardless of the conduct or outcome of the bidding process.
11. Language of Bid	11.1 The Bid, as well as all correspondence and documents relating to the Bid exchanged by the Bidder and the Purchaser, shall be written in the language ***specified in the BDS***. Supporting documents and printed literature that are part of the Bid may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language ***specified in the BDS***, in which case, for purposes of interpretation of the Bid, such translation shall govern.

12. Documents Comprising the Bid	12.1 The Bid shall comprise two envelopes submitted simultaneously, one called the Technical Bid containing the documents listed in ITB 12.2 and the other the Price Bid containing the documents listed in ITB 12.3, both envelopes enclosed together in an outer single envelope. 12.2 The Technical Bid shall comprise the following: (a) Letter of Technical Bid; (b) Bid Security in accordance with ITB 21; (c) alternative technical bids, at Bidder's option and if permissible, in accordance with ITB 14; (d) written confirmation authorizing the signatory of the Bid to commit the Bidder, in accordance with ITB 22; (e) documentary evidence in accordance with ITB 17 establishing the Bidder's eligibility to bid; (f) documentary evidence in accordance with ITB Clauses 18 and 31, that the Goods and Related Services conform to the Bidding Document; (g) documentary evidence in accordance with ITB 19 establishing the Bidder's qualifications to perform the contract if its Bid is accepted; and (h) any other required documents, which is not against the provision of Procurement Act/Regulation/Directives and Standard Bidding Document issued by PPMO, ***required in the BDS.*** 12.3 The Price Bid submitted by the Bidder shall comprise the following: (a) Price Bid Submission Letter and the applicable Price Schedules, in accordance with ITB 13, ITB 15, and ITB 16; (b) alternative Price Bid corresponding to the alternative Technical Bid, if permissible, in accordance with ITB 14; and (c) any other document required in the BDS. 12.4 The Bidder is solely responsible for the authenticity of the submitted documents. 12.5 The Technical Bid shall not include any financial information related to the Price Bid. A Technical Bid containing such material financial information shall be declared non-responsive.
13. Bid Submission Letter and Price Schedules	13.1 The Bidder shall submit the Technical Bid Submission Letter and the Price Bid Submission Letter using the form furnished in Section IV, Bidding Forms. These forms must be completed without any alterations to their format, and no substitutes shall be accepted. All blank spaces shall be filled in with the information requested.

	13.2 The Bidder shall submit, as part of the Price Bid, the Price Schedules for Goods and Related Services, according to their origin as appropriate, using the forms furnished in Section IV, Bidding Forms.
14. Alternative Bids	14.1 Unless otherwise ***indicated in the BDS***, alternative bids shall not be considered.
15. Bid Prices and Discounts	15.1 The prices and discounts quoted by the Bidder in the Letter of Price bid and in the Price Schedules shall conform to the requirements specified below. 15.2 The Bidder shall complete the appropriate Price Schedule and the sources of Goods schedules included herein, stating the unit prices, total cost per item, the total Bid amount, and the expected countries of origin of the Goods to be supplied under the contract. 15.3 All items in the Schedule of Supply must be listed and priced separately in the Price Schedules. If a Price Schedule shows items listed but not priced, their prices shall be assumed to be included in the prices of other items. Items not listed in the Price Schedule shall be assumed not to be included in the Bid, and provided that the Bid is substantially responsive, the corresponding adjustment shall be applied in accordance with ITB 39.3. Unit rates and prices for all items in the Schedule of Supply shall be expressed in positive values. If unit rates and prices are expressed in negative values, the bid will be rejected. 15.4 The price to be quoted in the Letter of Price Bid shall be the total price of the Bid excluding any discounts offered. Absence of the total bid price in the Letter of Price Bid may result in the rejection of the Bid. 15.5 If the Bidder intends to offer any unconditional discount, it shall always be expressed in fixed percentage and that shall not vary as the quantity varies and be applicable to each unit rate. The discount and methodology for its application shall be quoted in Letter of Price Bid. 15.6 The terms EXW, CIF, CIP, and other similar terms shall be governed by the rules prescribed in the current edition of Incoterms, published by The International Chamber of Commerce, at the date of the Invitation for Bids or **as specified in the BDS.** 15.7 Prices shall be quoted as specified in each Price Schedule included in **Section IV, Bidding Forms**. The disaggregation of price components is required solely for the purpose of facilitating the comparison of Bids by the Purchaser. This shall not in any way limit the Purchaser's right to contract on any of the terms offered. Prices shall be entered in the following manner: 1.1.1 For Goods manufactured in Nepal: (i) the price of the goods quoted EXW (ex works, ex factory, ex warehouse, ex showroom, or off-the-shelf, as applicable), including all customs duties, Value Added Tax and other taxes already paid or payable on the components

and raw material used in the manufacture or assembly of goods quoted ex works or ex factory, or on the previously imported goods of foreign origin quoted ex warehouse, ex showroom, or off-the-shelf;

(ii) Value Added Tax and all other taxes applicable in Nepal and payable on the Goods if the Contract is awarded to the Bidder;

(iii) the price for inland transportation, insurance, and other local services required to convey the Goods to their final destination (Project Site) **specified in the BDS.**

(iv) the total price for the item.

1.1.2 For Goods manufactured outside Nepal, to be imported:

i. the price of the goods quoted CIF (named port of destination), or CIP (border point), or CIP (named place of destination), named place of destination as **specified in the BDS;**

ii. the price for inland transportation, insurance, and other local services required to convey the Goods from the named place of destination to their final destination (Project Site) **specified in the BDS;**

iii. in addition to the CIP prices specified in (b)(i) above, the price of the Goods to be imported may be quoted FOB port of shipment (or FCA, as the case may be) or CPT (named place of destination), if so **specified in the BDS;** and

iv. the total price for the item.

(c) For Goods manufactured outside Nepal, already imported:

[For previously imported Goods, the quoted price shall be distinguishable from the original import value of these Goods declared to customs and shall include any rebate or mark-up of the local agent or representative and all local costs except import duties and taxes, which have been and/or have to be paid by the Purchaser. For clarity the bidders are asked to quote the price including import duties, and additionally to provide the import duties and the price net of import duties which is the difference of those values.]

(i) the price of the Goods, including the original import value of the Goods; plus any mark-up (or rebate); plus any other related local cost, and custom duties and other

import taxes already paid or to be paid on the Goods already imported.

(ii) the custom duties and other import taxes already paid (need to be supported with documentary evidence) or to be paid on the Goods already imported;

(iii) the price of the Goods, obtained as the difference between (i) and (ii) above;

(iv) any sales and other taxes which will be payable on the Goods if the contract is awarded to the Bidder;

(v) the price for inland transportation, insurance, and other local services required to convey the Goods from the named place of destination to their final destination (Project Site) **specified in the BDS;** and

(vi) the total price for the item.

(d) For Related Services, other than inland transportation and other services required to convey the Goods to their final destination, whenever such Related Services are specified in the Schedule of Requirements:

(i) the local currency cost component of each item comprising the Related Services; and

(ii) the foreign currency cost component of each item comprising the Related Services, inclusive of all custom ruties, Value Added Tax and other taxes aplicable in the Purchaser's country, payable on the related services, if the contract is awarded to the Bidder.

15.8 Prices quoted by the Bidder shall be fixed during the Bidder's performance of the Contract and not subject to variation on any account, unless otherwise ***specified in the BDS***. A Bid submitted with an adjustable price quotation shall be treated as non responsive and shall be rejected, pursuant to ITB 32. However, if in ***accordance with the BDS***, prices quoted by the Bidder shall be subject to adjustment during the performance of the Contract, a Bid submitted with a fixed price quotation shall not be rejected, but the price adjustment shall be treated as zero

15.9 If so indicated in ITB 1.1, Bids are being invited for individual contracts (lots) or for any combination of contracts (packages). Bidders wishing to offer any price discount for the award of more than one Contract shall specify in their Price Bids the price discount applicable to each package, or alternatively, to individual Contracts within the package.

	Price discounts shall be submitted in accordance with ITB 15.7, provided the Price Bids for all lots are submitted and opened at the same time.
16. Currencies of Bid	16.1 Bid prices shall be quoted in the following currencies: (a) Bidders may express their bid price in any fully convertible currency. If a Bidder wishes to be paid in a combination of amounts in different currencies, it may quote its price accordingly but shall use no more than three currencies in addition to the Nepalese currency. (b) All expenditures that are to be incurred in Nepal for i) inland transportation and related costs, ii) all taxes, and iii) local currency cost component of related services other than inland transportation and other services should be expressed in the Bid in Nepalese currency and will be payable in Nepalese currency.
17. Documents Establishing the Eligibility of the Bidder	17.1 To establish their eligibility in accordance with ITB 4, Bidders shall: (a) complete the eligibility declarations in the Bid Submission Letter, included in Section IV, Bidding Forms; and (b) if the Bidder is an existing or intended JV in accordance with ITB 4.2, submit a copy of the JV Agreement, or a letter of intent to enter into such an Agreement. The respective document shall be signed by all legally authorized signatories of all the parties to the existing or intended JV, as appropriate. (c) submit the copy of the documents as ***specified in Section III, Evaluation and Qualification Criteria***.
18. Documents Establishing the Conformity of the Goods and Related Services to the Bidding Document	18.1 To establish the conformity of the Goods and Related Services to the Bidding Document, the Bidder shall furnish as part of its Technical Bid the documentary evidence that the Goods and Related Services conform to the requirements specified in Section V, Supply Requirements. 18.2 The documentary evidence may be in the form of literature, drawings or data, and shall consist of a detailed item-by-item description of the essential technical and performance characteristics of the Goods and Related Services, demonstrating substantial responsiveness of the Goods and Related Services to those requirements, and if applicable, a statement of deviations and exceptions to the provisions of Section V, Schedule of Requirements. 18.3 The Bidder shall also furnish a list giving full particulars, including available sources and current prices of spare parts, special tools, etc., necessary for the proper and continuing functioning of the Goods

	during the period **specified in the BDS** following commencement of the use of the goods by the Purchaser. 18.4 Standards for workmanship, process, material, and equipment, as well as references to brand names or catalogue numbers specified by the Purchaser in the Section V, Schedule of Requirements, are intended to be descriptive only and not restrictive. The Bidder may offer other standards of quality, brand names, and/or catalogue numbers, provided that it demonstrates, to the Purchaser's satisfaction, that the substitutions ensure substantial equivalence or are superior to those specified in Section V, Schedule of Requirements.
19. Documents Establishing the Qualifications of the Bidder	19.1 To establish its qualifications to perform the Contract, the Bidder shall submit as part of its Technical Proposal the evidence indicated for each qualification criteria specified in Section III (Evaluation and Qualification Criteria). The documentary evidence of the Bidder's qualifications to perform the contract, if its bid is accepted, shall establish to the Purchaser's satisfaction that the Bidder meets each of the qualification criterion specified. 19.2 If so, ***required in the BDS***, a Bidder that does not manufacture or produce the Goods it offers to supply shall submit the Manufacturer's Authorization using the form included in Section IV, Bidding Forms to demonstrate that it has been duly authorized by the manufacturer or producer of the Goods to supply these Goods in Nepal and take care of the warranty provided. 19.3 If so, ***required in the BDS***, a Bidder that does not conduct business within Nepal shall submit evidence that it will be represented by an Agent in Nepal equipped and able to carry out the Supplier's maintenance, repair and spare parts-stocking obligations prescribed in the Conditions of Contract and/or Technical Specifications. 19.4 A foreign Bidder wishing to have or already having a local agent shall state the following: a. Name and address of the Agent/Representative, b. The Agent/Representative providing type of services, c. Amount of commission if the Agent/Representative is entitled to get such payment and if it participates in the procedure of payment, d. Other agreement with Agent/Representative, if any, e. Bidder shall certify in the Letter of Authorization as follows: "We certify that the statement and disclosure made by us on the above are complete and true to the best of our knowledge and belief", If the agent has not been appointed: a. Source of information about tender invitation,

	b. The remuneration given to the individual or firm/company or organization to work on its behalf for submitting tender, representation in the bid opening and other required action in connection with the tender, c. Transfer or handover evidence of foreign currency exchanged which required to be submitted with the tender, d. If the bank account of any Nepali citizen has been used for the exchange of foreign currency specify the name of the individual and his address. If the foreign currency has been exchanged by self then the certificate of currency exchange. 19.5 If a foreign Bidder in its Bid, has not provided the information mentioned in ITB 19.4 or has submitted its bid stating that the Bidder does not have a local agent and later it is proved that the bidder has a local agent or it is proved that the commission mentioned in the Bid is less than the commission received by the local agent then the Purchaser shall initiate proceedings to blacklist such bidder in accordance with ITB 3.3.
20. Period of Validity of Bids	20.1 Bid shall remain valid for a period ***specified in the BDS*** after the bid submission deadline date prescribed by the purchaser. If the prescribed bid submission deadline date falls on a government holiday, then the next working day shall be considered as the bid submission deadline date. In such case the validity period of the bids shall be considered from the original bid submission deadline date. A bid valid for a shorter period shall be rejected by the purchaser as nonresponsive. 20.2 In exceptional circumstances, prior to the expiration of the bid validity period, the Purchaser may request Bidders to extend the period of validity of their Bids. The request and the responses shall be made in writing. If a Bid Security is requested in accordance with ITB 21, it shall also be extended for a corresponding period. A Bidder may refuse the request without forfeiting its Bid Security. A Bidder granting the request shall not be required or permitted to modify its Bid and to include any additional conditions against the provisions specified in Bid Documents.
21. Bid Security	21.1 The Bidder shall furnish as part of its bid, in original form a Bid Security as ***specified in the BDS***. In case of e-submission of bid, the Bidder shall upload scanned copy of Bid security letter at the time of electronic submission of the bid. The Bidder accepts that the scanned copy of the Bid security shall, for all purposes, be equal to the original. The details of original Bid Security and the scanned copy submitted with e-bid should be the same otherwise the bid shall be non-responsive.

21.2 If a bid security is specified pursuant to ITB 21.1, the bid security shall be a demand guarantee in any of the following forms at the Bidder's option:

original copy of an unconditional bank guarantee from Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law or;

original copy of an unconditional bank guarantee from commercial foreign bank or;

(a) original copy of cash deposit voucher in the Purchaser 's Account as ***specified in BDS***.

In case of a bank guarantee, the Bid Security shall be submitted either using the Bid Security Form included in Section IV, Bidding Forms or in another form acceptable to the purchaser. The form must include the complete name of the Bidder. The Bid Security shall be valid for minimum thirty (30) days beyond the end of the validity period of the bid, or beyond any period of extension if requested under ITB 20.2.

The bid security issued by any foreign Bank outside Nepal must be counter guaranteed by an Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law in Nepal.

21.3 If a bid Security is required in accordance with ITB 21.1, any Bid not accompanied by an enforceable and substantially compliant Bid Security in accordance with ITB 21.2, shall be rejected by the Purchaser as nonresponsive. In case of e- Submission, if the scanned copy of an acceptable bid security letter is not uploaded with the electronic bid then bid shall be rejected.

21.4 If a Bid Security is specified pursuant to ITB 21.1, the Bid Security of unsuccessful Bidders shall be returned within three (3) days upon the successful Bidder's` furnishing of the required performance security and signing of the Contract Agreement pursuant to ITB 44.1 and 45.1.

21.5 If a Bid Security is specified pursuant to ITB 21.1, the Bid Security of the successful Bidder shall be returned as promptly as possible once the successful Bidder has furnished the required Performance Security and signed the Contract Agreement.

21.6 The Bid Security may be forfeited:

(a) a Bidder requests for withdrawal or modification of its bid, except as provided in ITB 20.2

(i) during the period of bid validity specified by the Bidder on the Letter of Bid, in case of electronic submission;

(ii) from the period twenty-four hours prior to bid submission deadline up to the period of bid validity specified by the Bidder on the Letter of

	Bid, in case of hard copy submission. (b) a Bidder changes the prices or substance of the bid while providing information pursuant to clause 29.1; (c) a Bidder involves in fraud and corruption pursuant to clause 3.1; (d) the successful Bidder fails to: (i) furnish a performance security in accordance with ITB 44.1; (ii) sign the Contract in accordance with ITB 45.1; or (iii) accept the correction of arithmetical errors pursuant to clause 36. 21.7 The Bid Security of a JV must be in the name of the JV that submits the bid. If the JV has not been legally constituted at the time of bidding, the Bid Security shall be in the names of all future partners as named in the letter of intent mentioned in ITB 17.1 (b).
22. Format and Signing of Bid	22.1 The Bidder shall prepare one original set of the Technical Bid and one original set of the Price Bid as described in ITB 12 and clearly mark each "ORIGINAL - TECHNICAL BID" and "ORIGINAL - PRICE BID". Alternative bids, if permitted in accordance with ITB 14, shall be clearly marked "ALTERNATIVE". In addition, the Bidder shall submit copies of the Technical Bid and the Price Bid, in the number specified in the BDS and clearly mark them "COPY NO… - TECHNICAL BID" and "COPY NO…. - PRICE BID". In the event of any discrepancy between the original and the copies, the original shall prevail. In case of e-submission of bid, the Bidder mustsubmit his bid electronically in PDF or online forms files as specified in ITB Clause 23.1(b). If a Bidder submits both the electronic bid and a bid in hard copy within the bid submission deadline, then the submitted Bids shall be accepted for evaluation provided that the facts and figures in hard copy confirm to those in electronic bid. If there is any major discrepancy in fact and figures in the electronic bid and bid in hard copy, it shall be treated as two separate bids from one Bidder and both the Bids shall be disqualified, as per ITB Clause 4.3 (e). 22.2 The original and all copies of the bid shall be typed or written in indelible ink and shall be signed by a person duly authorized to sign on behalf of the Bidder. This authorization shall consist of a written confirmation as ***specified in the BDS*** and shall be attached to the Bid. The name and position held by each person signing the authorization must be typed or printed below the signature. All pages of the bid, except for un amended printed literature, shall be signed or initialed by the person signing the bid.

	22.3 Any amendments such as interlineations, erasures, or overwriting shall be valid only if they are signed or initialed by the person signing the Bid.

D. Submission and Opening of Bids

23. Sealing and Marking of Bids	23.1 Unless otherwise **specified in BDS**, Bidders shall submit their bids by electronic or by mail/ by hand/ by courier. Procedures for submission, sealing and marking are as follows: (a) Bidders submitting bids by mail, by hand or by Courier shall enclose the original of the Technical Bid, and the original of the Price Bid and each copy of the Technical Bid and Price Bid, including alternative bids, if permitted in accordance with ITB 14, in separate sealed envelopes, duly marking the envelopes as **"ORIGINAL TECHNICAL BID", "ORIGINAL – PRICE BID", "ALTERNATIVE" and "COPY No….. – TECHNICAL BID" and "COPY NO….. PRICE BID"** as appropriate. These envelopes containing the original and the copies shall then be enclosed in one single envelope. (b) Bidders submitting Bids electronically shall follow the electronic bid submission procedure specified in this clause. i. The bidder is required to register in the e-GP system https://www.bolpatra.gov.np/egp following the procedure specified in e-GP guideline. ii. Interested bidders may either purchase the bidding document from the Employer's office as specified in the Invitation for Bid (IFB) or bidders may download the IFB and bidding document from e-GP system. iii. The registered bidders need to maintain their profile data required during preparation of bids. iv. In order to submit their bids the cost of the bidding document can be deposited as specified in IFB. In addition, electronic scanned copy (.pdf format) of the bank deposit voucher/cash receipt should also be submitted along with the technical bid. v. The bidder can prepare their technical and price bids using data and documents maintained in bidder's profile and forms/format provided in bidding document by Employer. The bidder may submit bids as a single entity or as a joint venture. The bidder submitting bid in joint venture shall have to upload joint venture agreement along with partner(s) Bolpatra ID provided during bidder's registration. vi. Bidders (all partners in case of JV) should update their profile data and documents required during preparation and

submission of their technical bids.

vii. In case of bid submission in JV, the consent of the partners shall be obtained through the confirmation link sent to the registered email address and the partners shall have to acknowledge their confirmation.

The required forms and documents shall be part of technical bids.

No.	Document	Requirement	Remarks
1.	Letter of Technical Bid	Mandatory	PDF
2.	Bid Security/Bank Guarantee	Mandatory	PDF
3.	Company registration Certificate	Mandatory	PDF
4.	VAT registration Certificate	Mandatory (for domestic bidders only)	PDF
5.	Business Registration Certificate	Mandatory	PDF
6.	Tax Clearance Certificate/Tax return submission evidence/evidence of time extension	Mandatory (for domestic bidders only)	PDF
7.	Power of Attorney of Bid signatory	Mandatory	PDF
8.	Bank Voucher for cost of bid document	Mandatory	PDF
9.	Joint venture agreement	Mandatory in case of JV Only	PDF
10.	Qualification Documents	Mandatory	PDF
11.	Technical Specification	Mandatory	PDF or Online Forms
12.	Delivery and Completion Schedule	Mandatory	PDF or Online Forms
13.	Additional documents] specified in ITB 12.2 (h)	Mandatory (If any)	PDF

The required forms and documents shall be part of price bids.

No.	Document	Requirement	Remarks
1.	Letter of Price Bid	Mandatory	PDF
2.	Completed Price Schedule	Mandatory	Online Forms
3.	Additional Documents specified in ITB 12.3 (c)	Mandatory (If any)	PDF

Note:

a) ***The documents specified as "Mandatory" should be included in e-submission and non-submission of the documents shall be considered as non-responsive bid.***

b) Bidders (all partners in case of JV) should verify/update their profile documents as appropriate for the specific bid before submitting their bid electronically.

viii. After providing all the details and documents, two separate bid response documents i.e technical bids and price bids will be generated from the system. Bidders are advised to download and verify the response documents prior to bid submission.

ix. For verifying the authentic user, the system will send one time password (OTP) in the registered e-mail address of the bidder. System will validate the OTP and allow bidder to submit their bid.

x. Electronically submitted bids can be modified and/or withdrawn through system. The bidder may modify their bids multiple times online within bid submission date and time specified in e-GP system. Once a Bid is withdrawn, bidder won't be able to submit another bid response for the same bid.

xi. The Bidder / Bid shall meet the following requirements and conditions for e-submission of bids;

1. The e-submitted bids must be readable through PDF reader.
2. The facility for submission of bid electronically through e-submission is to promote transparency, non-discrimination, equality of access, and open competition in the bidding process. The Bidders are fully responsible to use the e- submission facility properly in e-GP system as per specified procedures and in no case the Employer

	shall be held liable for Bidder's inability to use this facility. 3. When a bidder submits electronic bid through the PPMO e-GP portal, it is assumed that the bidder has prepared the bid by studying and examining the complete set of the Bidding documents including specifications, drawings and conditions of contract. 23.2 The inner and outer envelopes shall: (a) bear the name and address of the Bidder; (b) be addressed to the Purchaser in accordance with ITB 24.1; and (c) bear the specific identification of this bidding process indicated in BDS 1.1. 23.3 The outer envelope and the inner envelope containing Technical Proposal shall bear a warning not to open before the time and date for the opening of Technical Bid in accordance with ITB 27.1. 23.4 The inner envelope containing the Price Bid shall bear a warning not to open until advised by the Employer in accordance with ITB 27.7 23.5 If all envelopes are not sealed and marked as required, the Purchaser will assume no responsibility for the misplacement or premature opening of the bid.
24. Deadline for Submission of Bids	24.1 Bids must be received by the Purchaser at the address and no later than the date and time ***indicated in the BDS***. In case of e-submission, the standard time for e-submission is Nepal Standard Time as set out in the server. The e-procurement system will accept the e-submission of bid from the date of publishing of notice and will automatically not allow the e-submission of bid after the deadline for submission of bid. 24.2 The Purchaser may, at its discretion, extend the deadline for the submission of Bids by amending the Bidding Document in accordance with ITB 9, in which case all rights and obligations of the Purchaser and Bidders previously subject to the deadline shall thereafter be subject to the deadline as extended. However, the time available to submit bids shall not be less than five (5) days since amendment in bidding document.
25. Late Bids	25.1 The Purchaser shall not consider any Bid - Technical or Price - that arrives after the deadline for submission of Bids, in accordance with ITB 24. Any Bid received by the Purchaser after the deadline for submission of Bids shall be declared late, rejected, and returned unopened to the Bidder.
26. Withdrawal, or	26.1 A bidder may withdraw, or modify its bid after it has been submitted either in hard copy or by e-Submission. Once a Bid is withdrawn,

Modification of Bids	bidder shall not be able to submit another bid for this bidding process. Procedures for withdrawal or modification of submitted bids are as follows: **GoN Funded:** (i) Bids submitted in hard Copy a) Bidders may withdraw or modify its bids by sending a written notice in a sealed envelope, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB 22.2 before 24 hours prior to the last deadline of submission of bid. The corresponding modification of the bid must accompany the respective written notice. All notices must be: (aa) prepared and submitted in accordance with ITB 22 and ITB 23, and in addition, the respective envelopes shall be clearly marked "WITHDRAWAL", "MODIFICATION;" and (bb) received by the Purchaser 24 hours prior to the deadline prescribed for submission of bids, in accordance with ITB 24. **DP Funded:** Bidders may withdraw or modify its Bid – Technical or Price – after it has been submitted by sending a written notice, duly signed by an authorized representative, and shall include a copy of the authorization in accordance with ITB 22.2. The corresponding modification of the Bid must accompany the respective written notice. All notices must be (aa) prepared and submitted in accordance with ITB 22 and ITB 23, and in addition, the respective envelopes shall be clearly marked "WITHDRAWAL," and "MODIFICATION;" and (bb) received by the Employer prior to the deadline prescribed for submission of Bids, in accordance with ITB 24. ii) E-submitted bids. a) Bidder may submit modification or withdrawal prior to the deadline prescribed for submission of bids through e-GP system by using the forms and instructions provided by the system. Once a Bid is withdrawn, bidder shall not able to submit another bid for the same bid. 26.2 Bids requested to be withdrawn in accordance with ITB 26.1 (i) shall be returned unopened to the Bidders after the end of bid opening process. 26.3 The following provisions apply for withdrawal or modification of the Bids: **GoN Funded** 1.1.2.1 In case of bids submitted in hard copy no bid shall be withdrawn or modified in the interval between 24 hours prior time of the deadline for submission of bids and the expiration

	of the period of bid validity specified by the Bidder on the Letter of Bid or any extension thereof. 1.1.2.2 In case of e-submitted bids no bids shall be withdrawn or modified in the interval between deadline for submission of bids and the expiration of the period of bid validity specified by the Bidder on the bid submission form or any extension there of. **DP Funded** No Bid may be withdrawn or modified in the interval between the deadline for submission of Bids and the expiration of the period of bid validity specified by the Bidder on the Letters of Technical Bid and Price Bid or any extension thereof. 26.4 Except in case of any modification or correction in bid document made by procuring entity, Bidder may submit request for withdrawal or modification only one time. 26.5 In case of hard copy bid, no bid may be withdrawn if the bid has already been modified; except in case of any modification or correction in bid document by procuring entity. 26.6 Request for withdrawal or modification must be made through the same medium of submission. Request for withdrawal or modifications through different medium shall not be considered.
27.Bid Opening	27.1 The Purchaser's bid opening committee shall conduct the opening of Technical Bids in public in the presence of bidder or its representative who choose to attend at the address, date and time ***specified in the BDS***. The Price Bids will remain unopened and will be held in custody of the Employer until the specified time of their opening. If the Technical Bid and Price Bid are submitted together in one envelope, the Employer shall reject the entire Bid. 27.2 The opening committee shall download the e-submitted Technical Bid files. The e-procurement system allows the Purchaser to download the e-submitted Technical Bid files (report) only after bid opening date and time after login simultaneously by two members of the Bid Opening Committee. 27.3 Electronically submitted Technical Bid shall be opened at first in the same time and date as *specified above*. Electronic Bids shall be opened one by one and read out. The e-submitted Technical Bids must be readable through open standards interfaces. Unreadable and or partially submitted bid files shall be considered incomplete. 27.4 Before opening the bids, the opening committee shall separate the envelopes of the bids received after the deadline of bid submission, the envelopes containing an application given for WITHDRAWAL, MODIFICATION of bids and the envelopes of bids duly registered. The bids received after the deadline of submission shall be returned to the

concerned bidder unopened. Then envelopes marked "WITHDRAWAL" shall be opened first, read out, and recorded, and the envelope containing the corresponding Bid shall not be opened, but returned to the Bidder. If the withdrawal notice is not accompanied by a copy of the valid authorization pursuant to ITB 22.2, the withdrawal shall not be permitted and the corresponding Bid will be opened. Next, envelopes marked "MODIFICATION" shall be opened, read out, and recorded with the corresponding Bid. No Bid shall be modified unless the corresponding Modification Notice contains a valid authorization to request the modification and is read out and recorded at bid opening. Only envelopes that are opened, read out, and recorded at bid opening shall be considered further. Price Bids, both Original and Modification, will remain unopened in accordance with ITB 27.1.

27.5 All other envelopes holding the Technical Bid shall be opened one at a time, and the following read out and recorded: the name of the Bidder; whether there is a modification; the presence of a Bid Security, and any other details as the Purchaser may consider appropriate. Only Technical Bids read out and recorded at bid opening shall be considered for evaluation. No Bid shall be rejected at bid opening except for late bids, in accordance with ITB 25.1.

27.6 The opening committee shall prepare a record of the opening of Technical Bids that shall include, as a minimum: the name of the Bidder and whether there is a withdrawal, or modification; and the presence or absence of a Bid Security. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record. A copy of the record shall be distributed to all Bidders who submitted bids in time, and posted online when electronic bidding is permitted. The Bidders' representatives who are present shall also be requested to sign an attendance sheet.

27.7 At the end of the evaluation of the Technical Bids, the purchaser will invite bidders who have submitted substantially responsive Technical Bids and who have been determined as being qualified for award to attend the opening of the Price Bids. The date, time, and location of the opening of Price Bids will be advised in writing by the purchaser. Bidders shall be given at least 15 days' notice for the opening of Price Bids.

27.8 The purchaser will notify Bidders in writing who have been rejected on the grounds of their Technical Bids being substantially nonresponsive to the requirements of the Bidding Document and return their Price Bids unopened.

27.9 The purchaser shall conduct the opening of Price Bids of all Bidders who submitted substantially responsive Technical Bids, in the presence of Bidders` representatives who choose to attend at the address, on the

	date, and time specified by the Employer. The Bidder's representatives who are present shall be requested to sign a register evidencing their attendance. 27.10 All envelopes containing Price Bids shall be opened one at a time and the following read out and recorded: (a) the name of the Bidder; (b) whether there is a modification; (c) the Bid Prices, including any discounts and alternative offers; and (d) any other details as the purchaser may consider appropriate. Only Price Bids, discounts, modifications, and alternative offers read out and recorded during the opening of Price Bids shall be considered for evaluation. No Bid shall be rejected at the opening of Price Bids. 27.11 The purchaser shall prepare a record of the opening of Price Bids that shall include, as a minimum, the name of the Bidder, the Bid Price (per lot/package if applicable), any discounts, modifications and alternative offers. The Bidders' representatives who are present shall be requested to sign the record. The omission of a Bidder's signature on the record shall not invalidate the contents and effect of the record.

E. Evaluation and Comparison of Bids

28.Confidentiality	28.1 Information relating to the examination, evaluation, comparison, and post-qualification of Bids, and recommendation of contract award, shall not be disclosed to Bidders or any other persons not officially concerned with such process until publication of the Contract award; thereafter, information will be disclosed in accordance with ITB 43.1. 28.2 Any attempt by a Bidder to influence the Purchaser in the examination, evaluation, comparison, and post-qualification of the Bids or Contract award decisions may result in the rejection of its Bid. 28.3 Notwithstanding ITB 28.2, from the time of bid opening to the time of Contract award, if any Bidder wishes to contact the Purchaser on any matter related to the bidding process, it should do so in writing.
29.Clarification of Bids	29.1 To assist in the examination, evaluation, comparison and post-qualification of the Technical and Price Bids, the Purchaser may, at its discretion, ask any Bidder for a clarification of its Bid. Any clarification submitted by a Bidder with regard to its Bid and that is not in response to a request by the Purchaser shall not be considered. The Purchaser's request for clarification and the response shall be in writing. No change in the prices or substance of the Technical Bid or prices in the Price Bid shall be sought, offered, or permitted, except to confirm the correction of arithmetic errors discovered by the Purchaser in the evaluation of the Bids, in accordance with ITB 36. In case of e-

	submission of bid, upon notification from the purchaser, the bidder shall also submit the original of documents comprising the Technical and Price Bids as per ITB 12.2 and ITB 12.3 for verification of submitted documents for acceptance of the e-submitted bid. 29.2 If a Bidder does not provide clarifications of its Bid by the date and time set in the purchaser's request for clarification, its Bid may be rejected.
30.Deviations, Reservations, and Omissions	30.1 During the evaluation of bids, the following definitions apply: (a) "Deviation" is a departure from the requirements specified in the Bidding Document; (b) "Reservation" is the setting of limiting conditions or withholding from complete acceptance of the requirements specified in the Bidding Document; and (c) "Omission" is the failure to submit part or all of the information or documentation required in the Bidding Document.
31. Examination of Technical Bid	31.1 The purchaser shall examine the Technical Bid to confirm that all documents and technical information requested in ITB 12.2 have been submitted. If any of these documents or information (except alternative Technical Bid which is optional) is missing, the bid shall be rejected. 31.2 In case of e-submission bids, the Employer shall confirm that all the documents and information requested in ITB 23.1 have been submitted. If any of these documents or information is missing, the bid shall be rejected.
32.Determination of Responsiveness of Technical Bid	32.1 The Purchaser's determination of the responsiveness of a Bid is to be based on the contents of the Technical Bid itself, as defined in ITB 12.2. 32.2 A substantially responsive Technical Bid is one that meets the requirements of the Bidding Document without material deviation, reservation, or omission. A material deviation, reservation, or omission is one that, (a) if accepted, would: (i) affect in any substantial way the scope, quality, or performance of the Goods and Related Services specified in Section V, Schedule of Requirements; or (ii) limits in any substantial way, inconsistent with the Bidding Document, the Purchaser's rights or the Bidder's obligations under the proposed Contract; or (b) if rectified, would unfairly affect the competitive position of other Bidders presenting substantially responsive bids. 32.3 The Purchaser shall examine the technical aspects of the bid in particular, to confirm that all requirements of Section V, Schedule of

	Requirements have been met without any material deviation or reservation. 32.4 If a bid is not substantially responsive to the requirements of the Bidding Document, it shall be rejected by the Purchaser and may not subsequently be made responsive by correction of the material deviation, reservation, or omission. 32.5 In case of e-submission bids, the purchaser evaluates the bid on the basis of the information in the electronically submitted bid files. If the Bidder cannot substantiate or provide evidence to establish the information provided in e-submitted bid through documents/ clarifications as per ITB Clause 29.1, the bid shall not be considered for further evaluation. 32.6 In Case, a corruption case is being filed to Court against the Natural Person or Board of Director of the firm/institution /company or any partner of JV, such Natural Person or Board of Director of the firm/institution /company or any partner of JV such bidder's bid shall be excluded from the evaluation, if public entity receives instruction from Government of Nepal. 32.7 Except in case of e-submission, the Financial Bid of the bidder, which is evaluated as substantially non-responsive in technical bid, shall be returned to the respective bidders.
33.Non-material Non-conformities	33.1 The Purchaser may regard a Bid as responsive even if it contains minor deviations that do not materially alter or depart from the characteristics, terms, conditions and other requirement set forth in the Bidding Document or if it contains errors or oversights that are capable of being corrected without affecting the substance of the Bid. 33.2 Provided that a Bid is substantially responsive, the Purchaser may request that the Bidder submit the necessary information or documentation, within a reasonable period of time, to rectify non-material non-conformities or omissions in the Bid related to documentation requirements. Requesting information or documentation on such non-conformities shall not be related to any aspect of the price of the Bid. Failure of the Bidder to comply with the request may result in the rejection of its Bid. 33.3 Provided that a Bid is substantially responsive, the Purchaser shall rectify non-material non-conformities or omissions. To this effect, the Bid Price shall be adjusted, for comparison purposes only, to reflect the price of the missing or non-conforming item or component. The adjustment shall be made using the method indicated in Section III, Evaluation and Qualification Criteria. 33.4 If small differences are found such as in technical specification, description, feature which does not make the bid to be rejected, then the cost, which is calculated to the extent possible due to such differences, shall be included while evaluating bid.

	33.5 If the value is found fifteen percent more than the quoted amount of the bidder on account of small differences pursuant to ITB 32.4, such bid shall be considered irresponsive in substance and shall not be considered for evaluation.
34.Qualification of the Bidder	34.1 The Employer shall determine to its satisfaction during the evaluation of Technical Bids whether Bidders meet the qualifying criteria specified in Section III (Evaluation and Qualification Criteria). 34.2 The determination shall be based upon an examination of the documentary evidence of the Bidder's qualifications submitted by the Bidder, pursuant to ITB 19.1. 34.3 An affirmative determination shall be a prerequisite for the opening and evaluation of a Bidder's Price Bid. A negative determination shall result into the disqualification of the Bid, in which event the Employer shall return the unopened Price Bid to the Bidder.
35.Examination of Price Bids	35.1 The purchaser shall examine the Price Bid to confirm that all documents and financial information requested in ITB 12.3 have been submitted. If any of these documents or information (except alternative Price Bid which is optional) is missing, the bid shall be rejected. 35.2 In case of e-submission bids, the purchaser shall confirm that all the documents and financial information requested in ITB 23.1 have been submitted. If any of these documents or information is missing, the bid shall be rejected.
36.Correction of Arithmetical Errors	36.1 During the evaluation of Price Bids, the Purchaser shall correct arithmetical errors on the following basis: a) if there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless in the opinion of the Purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected; b) if there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and c) If there is a discrepancy between the bid price in the Summary of price schedule and the bid amount in item (c) of the Letter of Price Bid, the bid price in the Summary of price schedule will prevail and the bid amount in item (c) of the Letter of Price Bid will be corrected; and d) if there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related

	to an arithmetic error, in which case the amount in figures shall prevail subject to (a), (b) and (c) above. 36.2 If the Bidder that submitted the lowest evaluated Bid does not accept the correction of errors, its Bid shall be rejected and the bid security shall be forfiteed.
37 Conversion to Single Currency	37.1 For evaluation and comparison of Price Bids, all bid prices expressed in the amounts in various currencies shall be converted into Nepalese Rupees using the selling exchange rates established by Nepal Rastra Bank and on the on the date **specified in the BDS**.
38. Goods manufactured in Nepal to be procured	38.1 If the price of goods manufactured in Nepal, are higher up to fifteen percent than that of manufactured in foreign countries, the goods manufactured in Nepal shall be prefered in the evaluation of the Bids **as specified in BDS**. 38.2 for granting such preference pursuant to 38.1, the bidder must submit the country of origin issued by competent authority.
39.Evaluation and Comparison of Price Bids	39.1 The Purchaser shall evaluate and compare all substantially responsive Bids to determine the lowest evaluated bid. 39.2 To evaluate a Price Bid, the Purchaser shall only use all the criteria and methodologies defined in this Clause and in Section III, Evaluation and Qualification Criteria. No other criteria or methodology shall be permitted. 39.3 To evaluate a Price Bid, the Purchaser shall consider the following: (a) the bid price as quoted in accordance with ITB 15 **as specified in BDS**; (b) adjustment for correction of arithmetic errors in accordance with ITB 36.1; (c) adjustment due to discounts offered in accordance with ITB 15.7; (d) adjustment for nonmaterial nonconformities in accordance with ITB 33.3; (e) adjustment due to application of the evaluation criteria **specified in the BDS** from amongst those set out in Section III (Evaluation and Qualification Criteria). These criteria may include factors related to the characteristics, performance, and terms and conditions of purchase of the Goods and Related Services which shall be expressed to the extent practicable in monetary terms to facilitate comparison of bids unless otherwise specified in Section III; and (f) adjustment due to the application of a margin of preference in accordance with ITB clause 38.

	39.4 The Purchaser's evaluation of a bid will exclude and not take into account: (a) in the case of Goods offered from within Nepal, all sales tax and all other taxes, applicable in Nepal and payable on the Goods if the Contract is awarded to the Bidder; (b) in the case of Goods offered from outside Nepal, all customs duties, sales tax, and other taxes, applicable in Nepal and payable on the Goods if the Contract is awarded to the Bidder; and (c) any allowance for price adjustment during the period of performance of the Contract, if provided in the Bid. 39.5 If this Bidding Document allows Bidders to quote separate prices for different lots/packages, and to award multiple Contracts to a single Bidder, the methodology to determine the lowest evaluated price of the Contract combinations, including any discounts offered in the Letter of Price Bid, is specified in Section III (Evaluation and Qualification Criteria). 39.6 In Case, a corruption case is being filed to Court against the Natural Person or Board of Director of the firm/institution /company or any partner of JV, such Natural Person or Board of Director of the firm/institution /company or any partner of JV such bidder's bid shall be excluded from the evaluation, if public entity receives instruction from Government of Nepal.
40.Purchaser's Right to Accept Any Bid, and to Reject Any or All Bids	40.1 The Purchaser reserves the right to accept or reject any Bid, and to cancel the bidding process and reject all Bids at any time prior to Contract award, without thereby incurring any liability to the Bidders.

F. Award of Contract

41.Award Criteria	41.1 The Purchaser shall select to award the Contract to the Bidder whose offer has been determined to be the lowest evaluated Bid and is substantially responsive to the Bidding Document, provided further that the Bidder is determined to be qualified to perform the Contract satisfactorily.
42.Purchaser's Right to Vary Quantities at Time of Award	42.1 At the time the Contract is awarded, the Purchaser reserves the right to increase or decrease the quantity of Goods and Related Services originally specified in Section V, Schedule of Requirements, provided this does not exceed the percentages ***indicated in the BDS***, and without any change in the unit prices or other terms and conditions of the Bid and the Bidding Document.
43.Notification of Intention to Award	43.1 The Purchaser shall notify the concerned Bidder whose bid has been selected in accordance with ITB 41.1 within seven days of the selection of the bid, in writing that the Purchaser has intention to accept his/her

	bid and shall Inform via the Letter of Intention included in the Contract Forms and the information of name, address and amount of selected bidder shall be given to all other bidders who submitted the bid. 43.2 If no bidder submits an application pursuant to ITB 46.1 within a period of seven days of providing the notice under ITB 43.1, the Purchaser shall accept the bid selected in accordance with ITB 41.1 prior to the expiry of bid validity period, and notification of award shall be communicated to the bidder to furnish the performance security and sign the contract within fifteen days. 43.3 In Case, a corruption case is being filed to Court against the Natural Person or Board of Director of the firm/institution /company or any partner of JV, such Natural Person or Board of Director of the firm/institution /company or any partner of JV such bidder's bid shall be excluded from the evaluation, if public entity receives instruction from Government of Nepal.
44.Performance Security	**44.1** Within fifteen (15) days of the receipt of notification of award from the Purchaser, the successful Bidder shall furnish the Performance Security in accordance with the GCC, **as specified below from Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law in Nepal** using **Sample Form** for **the** Performance Security included in Section VII **(**Contract Forms or another form acceptable to the Purchaser. i) If bid price of the bidder selected for acceptance is up to 15 (fifteen) percent less than the approved cost estimate, the performance security amount shall be 5 (five) percent of the bid price. ii) For the bid price of the bidder selected for acceptance is more than 15 (fifteen) percent below of the cost estimate, the performance security amount shall be determined as follows: **Performance Security Amount = [(0.85 x Cost Estimate –Bid Price) x 0.5] + 5% of Bid Price.** The Bid Price and Cost Estimate shall be exclusive of Value Added Tax.
	44.2 Failure of the successful Bidder to submit the above-mentioned Performance Security or sign the Contract Agreement shall **constitute** sufficient grounds for the annulment of the award and forfeiture of the Bid Security and black listing. In that event the Purchaser shall award the Contract to the next lowest evaluated Bidder whose offer is substantially responsive and is determined by the Purchaser to be qualified to perform the Contract satisfactorily.
45. Signing of Contract	**45.1** The successful Bidder shall sign the contract in the form included in section VIII after the submission of performance security in accordance with ITB 44.

	45.2 At the same time, the Employer shall affix a public notice on the result of the award on its notice board and make arrangement for causing such notice to be affixed on the notice board also of the ***District Coordination Committee, District Administration Office, Provincial Treasury and Controller Office and District Treasury and Controller Office.*** The Employer may make arrangements to post the notice into its website, if it has; and if it does not have, into the website of the Public Procurement Monitoring Office, identifying the bid and lot/package numbers and the following information: (i) the result of evaluation of bid; (ii) date of publication of notice inviting bids; (iii) name of newspaper; (iv) reference number of notice; (v) item of procurement; (vi) name and address of bidder making contract and (viii) contract Price. 45.3 The Purchaser shall promptly respond in writing to any unsuccessful Bidder who, within thirty days from the date of issuance of notification pursuant to ITB 43.1, requests in writing the grounds on which its bid was not selected. 45.4 If the bidder whose bid has been accepted fails to sign the contract as stated ITB 45.1, the Public Procurement Monitoring Office shall blacklist the bidder on recommendation of the Public Entity.
46.Complaint and Review	46.1 If a Bidder dissatisfies with the Procurement proceedings or the decision made by the Purchaser in opening of the price bid or the intention to award the Contract, it may file an application to the Chief of the concerning Public Entity of the Purchaser within seven (7) days of providing the notice under ITB 27.8 and ITB 43.1 by the Public Entity, for review of the proceedings stating the factual and legal grounds. 46.2 An application filed after the deadline pursuant ITB 46.1 shall not be processed. 46.3 The chief of Public Entity of the Purchaser shall, within five (5) days after receiving the application, give its decision with reasons, in writing pursuant to ITB 46.1: (a) whether to suspend the procurement proceeding and the procedure for further proceedings to be adopted; or (b) whether or not to reject a application. No application can be submitted before the Review Committee for review against the decision made by the chief of the Public Entity for the Bid amount up to the value ***as stated in BDS.*** 46.4 If the Bidder is not satisfied with the decision of the Public Entity in accordance with ITB 46.3, or the decision by the Public Entity is not given within five (5) days of receipt of application pursuant to ITB 46.1, it can, within seven (7) days of receipt of such decision, file an application to the Review Committee of the GoN, stating the reason of its disagreement on the decision of the chief of Public Entity and

	furnishing the relevant documents, provided that its Bid amount is above the amount as stated in ITB 46.3. The application may be sent by hand, or by post, or by courier, or by electronic media at the risk of the Bidder itself. 46.5 Late application filed after the deadline pursuant to ITB 46.4 shall not be processed. 46.6 Within three (3) days of the receipt of application from the Bidder, pursuant to ITB 46.4, the Review Committee shall notify the concerning Public Entity of the Purchaser to furnish its procurement proceedings and comments on the issue, pursuant to ITB 46.3. 46.7 Within three (3) days of receipt of the notification pursuant to ITB 46.6, the Public Entity shall furnish the copy of the related documents along with its comment or reaction of complaint to the Review Committee. 46.8 The Review Committee, after inquiring from the Bidder and the Public Entity, if needed, shall give its decision within one (1) month after receiving the application filed by the Bidder, pursuant to ITB 46.4. 46.9 The Bidder, filing application pursuant to ITB 46.4, shall have to furnish a cash amount or Bank guarantee from Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law ***as stated in BDS*** with the validity period of at least ninety (90) days from the date of the filing of application pursuant to ITB 46.4. Application filed without furnishing the security deposit shall not be processed. 46.10 If the claim made by the Bidder pursuant to ITB 46.4 is justified, the Review Committee shall have to return the security deposit to the applicant, pursuant to ITB 46.9, within seven (7) days of such decision made. 46.11 If the claim made by the Bidder pursuant to ITB 46.4 is rejected by the Review Committee, the security deposit submitted by the Bidder pursuant to ITB 46.9 shall be forfeited.

(Section II)
Bid Data Sheet

Section II. Bid Data Sheet

A. Introduction	
ITB 1.1	The number of the Invitation for Bids (IFB) is **NEA-KGA-ICB-2082/83-01/RE**
ITB 1.1	Name of the Purchaser*:* **Nepal Electricity Authority, Generation Directorate, Large Generation Operation and Maintenance Department, Kaligandaki 'A' Hydropower Station**
ITB 1.1	The name of the ICB is: **SUPPLY, DELIVERY, INSTALLATION, TESTING AND COMMISSIONING OF STATOR WINDINGS FOR 56.5 MVA SYNCHRONOUS HYDRO GENERATORS AT KALIGANDAKI 'A' HYDROPOWER STATION** The identification number of the ICB is: **NEA-KGA-ICB-2082/83-01/RE** The number and identification of lots comprising this ICB is: **N/A**
ITB 2.1	The name of the contract/s is: **Kaligandaki 'A' Hydropower Station; SUPPLY, DELIVERY, INSTALLATION, TESTING AND COMMISSIONING OF STATOR WINDINGS FOR 56.5 MVA SYNCHRONOUS HYDRO GENERATORS AT KALIGANDAKI 'A' HYDROPOWER STATION** The Development Partner (DP) is: **N/A** The implementing agency is: **Nepal Electricity Authority (NEA)**
ITB 4.1	**All countries are eligible countries unless otherwise restricted by the Government of Nepal (GoN).**
ITB 4.2	Maximum number of partner in a joint venture shall be: **3 (three)** In case of Foreign Bidder, Joint Venture with Nepalese Bidder is **Not Mandatory**
ITB 4.4	A list of debarred firms is available at http:\\www.ppmo.gov.np

ITB 4.9	The domestic bidder shall submit the following document at the time of Bid Submission: • Company/Business Registration Certificate. • PAN/VAT registration certificate. • TAX Clearance Certificate of Proof of submission of income returns for the last fiscal year **Fiscal Year 2081/2082 BS (2024/2025 AD).** The foreign Bidder shall submit the following documents at the time of Bid Submission: • Company Registration Certificate (including clear merger history, if any), Legal and Business registration certificate of the Bidder, and each joint venture partners in the case of a joint venture, issued by the government of Country where the bidder or each joint venture partner is registered. • Tax Registration Certificate in their respective country. • Statement and disclosure of local agent/representative as specified in ITB 19.4. The foreign Bidder shall declare to submit the following documents **at the time of contract agreement or after 30 days of contract agreement:** • PAN/VAT registration certificate • Temporary Supply/Working License ▪ But, Resident foreign bidder shall submit PAN/VAT certificate and tax clearance certificate or proof of submission of Income Return for **Fiscal Year 2081/2082 BS (2024/2025 AD).** A foreign bidder who is required to have a local agent shall provide the following: a. Name and address of the Agent/Representative, b. The Agent/Representative providing type of services, c. Amount of commission if the Agent/Representative is entitled to get such payment and if it participates in the procedure of payment, d. Other agreement with Agent/Representative, if any, e. Bidder shall certify in the Letter of Authorization as follows: "We certify that the statement and disclosure made by us on the above are complete and true to the best of our knowledge and belief",

	And, the foreign Bidder shall declare to submit the following documents at the time of contract agreement: None
ITB 5.1	Goods and related services to be supplied from following countries are not eligible: **don't meet UN elegibility requirements/declared ineligible by GON**
B. Bidding Document	
ITB 8.1	For **clarification purposes** only, the Purchaser's address is: Attention: **Mr. Atmesh Poudyal, Station Chief (Kaligandaki 'A' Hydropower Station)** Name of the Purchaser: **Nepal Electricity Authority, Generation Directorate, Large Generation Operation and Maintenance Department, Kaligandaki 'A' Hydropower Station** City/Town: **Beltari** District: **Syangja** Country: **Nepal** E-mail: kaligandaki@nea.org.np, kaligandaki144@gmail.com Tel: +977 (063) 403083/ (01) 4153070 Mobile No.: +977-9856003147
ITB 8.1	The purchaser will respond in writing to any request for clarification provided that such request is received no later than 10 days prior to the deadline date for submission of bid.
ITB 8.2	A Pre-Bid meeting ***shall not*** be organized.
C. Preparation of Bids	
ITB 11.1	The language of the Bid is: English
ITB 12.2 (h)	The Bidder shall submit with its bid the following additional documents: 1. Notarized Company legal Firm Registration Certificate (all partner of JV). 2. Copy of Business Registration Certificate (all partner of JV). 3. Notarized JV agreement if bidder is not a single firm or single entity. 4. Notarized Audit Report for the last three fiscal years. 5. Notarized PAN/VAT Registration Certificate of the bidder of respective country. 6. Tax Clearance Certificate for FY 2081/82. (For Domestic bidders Only) 7. Original copies of original bidding documents with each page signed. 8. Manufacturer's Authorization Letter for Stator Windings as mentioned

	in Section III Evaluation and Qualification Criteria. 9. The Manufacturer shall be ISO 9001:2015 certified and/or equivalent standards certifications. 10. Documents to establish Bidder's qualification to perform the contract as specified in Section III, Qualification Criteria. 11. Project/Work Completion Certificate (on the letter head of the End-User) for all Projects as required as per EQC completed with contact persons address, email and Tel. no. i.e. Bidder's experience letter. (Note: - Experience Certificate Site Location, Capacity, Type should not Vary during validation) 12. Technical Description, Manufacturing facility detail Brochures, catalogues and performance characteristics of the items to be supplied. 13. Letter stating that the bidder is not under a declaration of blacklisted or ineligibility for corrupt and fraudulent practices issued by Government of Nepal and by Bidder's respective country Government. 14. Details and disclosure in respect of Local Agent as per ITB 19.4. If a foreign bidder is required to appoint a Nepalese agent, it must include the following details in its bid, as per the format provided in the bidding documents: a) The name and address of the local agent; b) What Service the agent renders; and c) The fixed amount of remuneration for the agent included in the offer.
ITB 12.3 (c)	The Bidder shall submit with its Price Bid the following additional documents: 1. Price Schedule 2. Delivery and Completion Schedule 3. Other Documents as specified
ITB 14.1	Alternative Bids **shall not be** permitted
ITB 15.6	The Incoterms edition is: Incoterms 2020
ITB 15.7 (a) iii, (b) ii & (c) v	Final Destination (Project Site): **Kaligandaki 'A' Hydropower Station, Powerhouse Store**, **Beltari**, **Syangja, Gandaki Province**, **Nepal.**
ITB 15.7 (b) i	For Goods offered from outside the Purchaser's country, the Bidder shall quote prices using the following Incoterm: Incoterms 2020 CIP project site is **Kaligandaki 'A' Hydropower Station, Powerhouse Store**, **Beltari**, **Syangja, Gandaki Province**, **Nepal.**
ITB 15.7 (b) iii	In addition to the CIP price specified in ITB 15.7 (b)(i), the price of the Goods manufactured outside Nepal may be quoted: Not Applicable
ITB 15.8	**The prices quoted by the Bidder shall: Not be Adjustable**
ITB 18.3	Period of time the Goods are expected to be functioning (for the purpose of spare parts): **10 Years from the delivery date.**

ITB 19.2	***A Manufacturer's Authorization letter is only required for the following items:*** ***(i) Stator Bars/Coils of 56.5 MVA Synchronous Generator Stator Windings to be supplied for Kaligandaki 'A' Hydropower Station*** The Bidder is required to submit documentation to substantiate that it is authorized by equipment manufacturer.
ITB 19.3	The Bidder **is** required to include with its bid, evidence that it will be represented by an Agent in Nepal.
ITB 20.1	The bid validity period shall be **One Hundred Twenty (120)** days.
ITB 21.1	The bid must be accompanied by bid security from Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law with following requirements: The amount and the currency of the Bid Security shall be: USD. 1,50,000.00 or an equivalent amount in NRs. @Exchange rate (sell) of Nepal Rastra Bank 30 days prior to the original deadline for Bid Submission, which shall be valid for 30 days beyond the validity period of the bid. If the bank guarantee is issued by a foreign bank, it shall be counter guaranteed by Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law in Nepal. The bid security shall be ***valid for minimum 30 days*** beyond the bid validity period**.**
ITB 21.2	If the Bidder wishes to submit the Bid Security in the form of cash, the cash should deposit and submit the receipt of the deposited amount of cash along with the bid in: Account Name: **NEPAL ELECTRICITY AUTHORITY, Ratnapark, Kathmandu** Bank Name: **Siddhartha Bank Ltd** Bank Address: **Kathmandu** Account Number: **00119093248**
ITB 22.2	The written confirmation of Authorization to sign on behalf of the Bidder shall consist of: a) The name and description of the documentation required to demonstrate the authority of the signatory to sign the Bid such as a Power of Attorney; and b) In the case of Bids submitted by an existing or intended JV, an undertaking signed by all parties: i. Stating that all parties shall be jointly and severally liable, and ii. Nominating a Representative who shall have the authority to conduct all business for and on behalf of all the parties of the JV during the bidding process and, in the event the JV is awarded the Contract,

	during contract execution.
D. Submission and Opening of Bids	
ITB 23.1	Bidders **must submit** their bids electronically.
ITB 24.1	For **bid submission purposes** only, the Employer's address is: Attention: **Mr. Atmesh Poudyal, Station Chief (Kaligandaki 'A' Hydropower Station)** Name of the Purchaser: **Nepal Electricity Authority, Generation Directorate, Large Generation Operation and Maintenance Department, Kaligandaki 'A' Hydropower Station** City/Town: **Beltari** District: **Syangja** Country: **Nepal** E-mail: kaligandaki@nea.org.np, kaligandaki144@gmail.com Tel: +977 (063) 403083/ (01) 4153070 Mobile No.: +977-9856003147
ITB 24.1	The deadline for bid submission is: Date: December 10, 2025 Time: 12:00 Hrs. (Noon) (Server Time of PPMO) Note: No hard copy submission permitted.
ITB 24.1	If the last date of purchasing, submission and opening of Bid falls on a government holiday then the next working day shall be considered as the last day without any change in the time and place as fixed.
ITB 27.1	The bid opening shall take place at: Name of the Office: **Nepal Electricity Authority, Generation Directorate** City/Town: **Durbarmarg** District: **Kathmandu** Country: **Nepal** Date: December 10, 2025 Time: 14:00 Hrs. (Server Time of PPMO)
E. Evaluation and Comparison of Bids	
ITB 37.1	The date for the selling exchange rate shall be: **date which is original date of bid opening specified in ITB 27.1.**
ITB 38.1	Domestic preference shall apply and the application methodology shall be as stipulated in Section III (Evaluation and Qualification Criteria).
ITB 39.3 (a)	Bids will be evaluated by package (may be multiple or single). If a Price Schedule shows items listed but not priced, their prices shall be assumed to be included in the prices of other items. An item not listed in the Price

	Schedule shall be assumed to be not included in the bid, and provided that the bid is substantially responsive, the average price of the item quoted by substantially responsive bidders will be added to the bid price and the equivalent total cost of the bid so determined will be used for price comparison.
ITB 39.3 (e)	The adjustments shall be determined using the following criteria, from amongst those set out in Section III, Evaluation and Qualification Criteria: (a) Deviation in Delivery schedule: No **(b)** Deviation in payment schedule: No **(c)** the cost of major replacement components and service: No **(d)** the availability of spare parts in Nepal and after-sales services for the equipment offered in the bid: No **(e)** the projected operating and maintenance costs during the life of the equipment: No **(f)** the performance and productivity of the equipment offered: No
F. Award of Contract	
ITB 42.1	The maximum percentage by which quantities may be increased is: 15% The maximum percentage by which quantities may be decreased is: 15%
ITB 46.3	No application can be submitted before the Review Committee for review against the decision made by the chief of the Public Entity for the bid amount less than the value of Twenty Million (NRs. 20,000,000)
ITB 46.9	The bidder, filling application pursuant to ITB 46.4, shall have to furnih a cash amount ot Bank guarantee equal to ten percent (10 %) of amount of bid security in case of complaint against decision pursuant to ITB 27.8 and one percent (1%) of its quoted Bid amount in case of complaint against decision pursuant to ITB 43.1

(Section III)
Evaluation and Qualification Criteria

Section III. Evaluation and Qualification Criteria

Table of Criteria

Evaluation Criteria

Criteria for Bid evaluation are to be determined case by case basis. Select from following the appropriate criteria according to the provisions specified in ITB 39. Retain only the relevant parameters and evaluation methods to apply corresponding to the retained criteria.

1.1 Technical Criteria

Technical deviations shall not be applied for under these criteria.

1.2 Domestic Preference

If the BDS so specifies, the Procuring Entity will grant a margin of preference to goods manufactured in Nepal. The nationality of the manufacturer or supplier is not a condition for such eligibility. The methods and stages set forth hereunder shall be followed in the evaluation and comparison of bids.

For comparison, responsive bids shall be classified in one of the following three groups:

(a) **Group A:** bids exclusively offering goods manufactured in for which (i) labor, raw material, and component from within Nepal account for 30 percent or more of the EXW price of the product offered, and (ii) the production facility in which those goods will be manufactured or assembled has been engaged in manufacturing/ assembling such goods at least since the time of bid submission.

(b) **Group B:** all other bids offering goods manufactured in Nepal.

(c) **Group C:** bids offering goods manufactured outside Nepal that have been already imported or that will be directly imported.

1.2.1 Method A

1. The price quoted for goods in bids of groups A and B shall include all duties and taxes paid or payable on the basic materials or component purchased in the domestic market or imported, but shall exclude the value added tax and similar taxes on the finished product. The price quoted for goods in bids of group C shall be on CIP (place of destination), which is exclusive of customs duties andother import taxes already paid or to be paid.
2. In the first step, all evaluated bids in each group shall be compared to determine the lowest bid in each group. Such lowest evaluated bids shall be compared with each other and if, as a result of this comparison, a bid from group A or group B is the lowest, it shall be selected for the award.
3. If as a result of the comparison under paragraph three above, the lowest evaluated bid is a bid from group C, the lowest evaluated bid from group C shall be further compared with the lowest evaluated bid from group A after adding to the evaluated price of goods offered in the bid from group C, for the purpose of this further comparison only, an

amount equal to fifteen (15%) percent of the CIP bid price. The lowest evaluated bid determined from this last comparison shall be selected.

1.3 Economic Criteria

Not Applicable

1.3.1 Adjustment for Scope

1.3.1.1 Local Handling and Inland Transportation

Not Applicable

1.3.1.2. Minor Omissions or Missing Items

The cost of minor omissions or missing items in the scope of supply, services, etc. should be added to the Bid Price to allow for Bid comparison on an equal basis. The price adjustment should be based on a reasonable estimate of the cost by the executing agency, engineer, consultant or bid evaluation committee, taking into consideration the corresponding quoted prices from other conforming Bids. The price adjustment should be based on the fair price of the omitted item. The most frequently used methods assign to the missing item a price:

(i) estimated by the Procuring Entity.

1.3.2 Adjustment for Deviations from the Terms of Payment

Deviations from the Terms of Payment as specified in SCC 15.1 are not permitted.

1.3.3 Adjustment for Deviations in the Delivery and Completion Schedule

Deviations from the Delivery and Completion Schedule specified in Section V (Schedule of Requirements) are not permitted.

1.3.4 Operating and Maintenance Costs

Not Applicable

1.3.5 Spare Parts and after Sales Service Facilities

Only those spare parts and tools which are specified on an item-wise basis in the List of Goods and Related Services in Section V. Schedule of Requirements, shall be taken into account in the bid evaluation. Supplier-recommended spare parts for a specified operating requirement shall not be considered in bid evaluation.

1.3.6 Performance and Productivity of the Goods

Not Applicable

1.3.7 Specific additional Criteria

Other specific additional criteria to be considered in the evaluation, and the evaluation method shall be detailed in BDS sub clause 39.3(e).

1.4 Multiple Contracts

If Goods and Related Services are grouped in multiple lots/packages, the following provision must be used: **Not Applicable**

Qualification Criteria

Except Qualification Requirements mentioned as optional, which may be specified as per requirements, the Procuring Entity shall specify the following Qualification Requirements without any substantial deviation.

2.1 Eligibility

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	

2.1.1 Conflict of Interest

No conflicts of interest in accordance with ITB 4.3.	Must meet requirement	Must meet requirement	Must meet requirement	Not applicable	Letter of Technical Bid

2.1.2 Government/DP Eligibility

Not having been declared ineligible by government /DP, as described in ITB Sub-Clause 4.4.	Must meet requirement	Must meet requirement	Must meet requirement	Not applicable	Letter of Technical Bid

2.1.3 Government-Owned Entity

Bidder required to meet conditions of ITB 4.5.	Must meet requirement	Must meet requirement	Must meet requirement	Not applicable	Letter of Technical Bid; Forms ELI – 1 and ELI - 2

2.1.4 UN Eligibility

Not having been excluded by an act of compliance with a United Nations Security Council resolution in accordance with ITB 4.7.	Must meet requirement	Must meet requirement	Must meet requirement	Not applicable	Technical Bid Submission Sheet

2.1.5 Nationality

Nationality in accordance with ITB 4.8.	Must meet requirement	Must meet requirement	Must meet requirement	Not applicable	Letter of Technical Bid; Forms ELI – 1 and ELI – 2 with attachments

2.1.6 Other Eligibility

Firm Registration Certificate	must meet requirement	not aplicable	must meet requirement	not applicable	Document attachment
Business Registration Certificate	must meet requirement	not aplicable	must meet requirement	not applicable	Document attachment
VAT and PAN Registration certificate	must meet requirement	not aplicable	must meet requirement	not applicable	Document attachment
Tax Clearance Certificate/Tax return submission evidence/ evidence of time extension for the **F/Y 2081/82** ***(Only for domestic bidders)***	must meet requirement	not aplicable	must meet requirement	not applicable	Document attachment

2.2 Pending Litigation.

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
All pending litigation, arbitration or other material events impacting the net worth and/or liquidity of the bidder, if any, shall be treated as resolved against the Bidder and so shall in total not represent more than 50 (Fifty) percent of the Bidder's net worth calculated as the difference between total assets and total liabilities.	Must meet requirement	Not applicable	Must meet requirement	Not applicable	Form LIT - 1

2.3 Financial Situation

2.3.1 Historical Financial Performance

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
Submission of audited balance sheets and income statements for the last 3 fiscal years to	Must meet requirement	Not applicable	Must meet requirement	Not applicable	Form FIN – 1

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
demonstrate the current soundness of the Bidder's financial position. As a minimum, the Bidder's net worth for the last year calculated as the difference between total assets and total liabilities should be positive.					

2.3.2 Average Annual Turnover

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
Minimum average annual turnover of USD. 4.0 Millions calculated as total payments received by the Bidder for supply contracts completed or under execution over the last three fiscal years.	Must meet requirement	Must meet requirement	Must meet 25 % of the requirement	Must meet 40% of the requirement	Form FIN – 2

Only the net amount shall be calculated after deducting the amount for VAT and such amount shall be adjusted to present value by applying wholesale price index of Nepal Rastra Bank.

2.3.3 Financial Resources

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
The Bidder must demonstrate access to, or availability of, financial resources such as liquid assets[1], unencumbered real assets, and other financial resources, (other than any contractual advance payments) to meet the cash-flow requirement of USD. 4.0 Millions.	Must meet requirement	Must meet requirement	Must meet 25 % of the requirement	Must meet 40 % of the requirement	Form FIN - 3

[1] Liquid Assets mean cash and cash equivalents, short-term financial instruments, short term available-for-sale-securities, marketable securities, trade receivables, short-term financing receivables and other assets that can be converted into cash within ONE YEAR.

2.4 Experience

2.4.1 General Experience

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
Experience under supply contracts in the role of prime supplier (single entity or JV member) or subcontractor for at least the last 3 years prior to the applications submission deadline.	Must meet requirement	Not applicable	Must meet requirement	Not applicable	Form EXP – 1

2.4.2 Specific Experience

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
Experience under supply contracts in the role of prime supplier (single entity or JV member) or subcontractor in at least 2 Contracts within the last three (3) years, with a value of at least USD. 4.0 Millions (total of two contracts) for the Design, Supply, Installation, Testing and Commissioning of at least 2 complete sets of Stator Windings for Hydro Generators of of capacity not less than 50 MVA and generating voltage not less than 13.8 kV that have been successfully or substantially completed within the last 3 (Three) Calender Years prior to the bid submission deadline	Must meet requirement	Must meet requirement	Not applicable	Not applicable	Form EXP – 2

Only the net amount shall be calculated after deducting the amount for VAT and such amount shall be adjusted to present value by applying wholesale price index of Nepal Rastra Bank.

2.4.3 Technical Experience (for Stator Coils/Bars Manufacturer):

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
The Bidder or Manufacturer shall demonstrate that the goods offered have: (i) been in production for at least 3 years or if the offered model is new the manufacturer must have experience in producing the similar model for a minimum of 3 years; (ii) been sold a minimum of 5 (five) complete sets of Stator Windings for synchronous hydro generators of capacity not less than 50 MVA and generating voltage not less than 13.8 kV over the last three years; and (iii) at least one complete stator winding set has been in operation for a minimum of 1 year.	Must meet requirement	Must meet requirement	Not applicable	Not applicable	Form EXP – 3

2.3.3 Production Capacity

Criteria	Compliance Requirements				Documents
Requirement	Single Entity	Joint Venture			Submission Requirements
		All Partners Combined	Each Partner	One Partner	
The Bidder or manufacturer shall demonstrate the documentary evidence validating that the: i) Manufacturer of Stator Bars/Coils can produce at least 1,080 Nos. of Stator Bars for Synchronous Generator within twenty one (21) months of time.	Must meet requirement	Must meet requirement	Not applicable	Not applicable	Form EXP – 4

(Section IV)
Bidding Forms

Section IV. Bidding Forms

Table of Forms

Letter of Technical Bid

(The Bidder shall accomplish the** Letter of Technical Bid **in its Letter Head Clearly showing the Bidders Complete name and address.)

Date: _____

Contract No.: _____

Invitation for Bid No.: _____

To: _____

We, the undersigned, declare that:

(a) We have examined and have no reservations to the Bidding Document, including Addenda issued in accordance with Instructions to Bidders (ITB) Clause 9.

(b) We offer to supply in conformity with the Bidding Document and in accordance with the delivery schedule specified in the Section V (Schedule of Requirements), the following Goods and Related Services: ***[insert a brief description of the goods and related services]***

(c) Our Bid consisting of the Technical Bid and the Price Bid shall be valid for a period of ….. ***[insert validity period as specified in ITB 20.1 of the BDS]*** days from the date fixed for the bid submission deadline in accordance with the Bidding Document, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

(d) Our firm, including any subcontractors or suppliers for any part of the Contract, have nationalities from eligible countries in accordance with ITB 4.8 and meet the requirements of ITB 3.4 & 3.5

(e) We are not participating, as a Bidder or as a subcontractor/supplier, in more than one Bid in this bidding process in accordance with ITB 4.3(e), other than alternative Bids in accordance with ITB 14;

(f) Our firm, its affiliates or subsidiaries, including any Subcontractors or Suppliers for any part of the contract, has not been declared ineligible by DP, under the Purchaser's country laws or official regulations or by an act of compliance with a decision of the United Nations Security Council;

(a) We are not a government owned entity/We are a government owned entity but meet the requirements of ITB 4.5;[2]

[2] Slect one of the options

(h) We declare that, we including any subcontractors or suppliers for any part of the contract do not have any conflict of interest in accordance with ITB 4.3 and we have not been punished for an offense relating to the concerned profession or business.

(i) The following commissions, gratuities, or fees, if any, have been paid or are to be paid with respect to the bidding process or execution of the Contract:

Name of Recipient	**Address**	**Reason**	**Amount**

(If none has been paid or is to be paid, indicate "none.")

(j) We declare that we are solely responsible for the authenticity of the documents submitted by us. The document and information submitted by us are true and correct. If any document/information given is found to be concealed at a later date, we shall accept any legal actions by the purchaser.

(k) We agree to permit GoN/DP or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by the GoN/DP.

Name _____

In the capacity of _____

Signed _____

Duly authorized to sign the Bid for and on behalf of _____

Date _____

Letter of Price Bid

The Bidder must accomplish the Letter of Price Bid in its letterhead clearly showing the Bidder's complete name and address.

Date: .....

Name of the contract: .....

Invitation for Bid No.: .....

To:…….

We, the undersigned, declare that:

(a) We have examined and have no reservations to the Bidding Documents, including Addenda issued in accordance with Instructions to Bidders (ITB) Clause 9;

(b) We offer to supply in conformity with the Bidding Document and in accordance with the delivery schedule specified in the **Section V (**Schedule of Requirements**)**, the following Goods and Related Services: ***[insert a brief description of the goods and related services]***

(c) The total price of our Bid, excluding any discounts offered in item (d) below, is:

[Incase of only one lot/package, insert the total Bid Price in words and figures];

[Incase of multiple lots/packages, insert the total price of each lot/package]

(d) The discounts offered and the methodology for their application are:

The discounts offered are: ***[specify in detail each discount offered]***

The exact method of calculations to determine the net price after application of discounts is shown below: ***[specify in detail the method that shall be used to apply the discounts]***;

(e) Our bid shall be valid for a period of ***[insert validity period as specified in ITB 20.1]*** days from the date fixed for the bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

(f) If our bid is accepted, we commit to obtain a performance security in accordance with the Bidding Document;

(g) We understand that this bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal contract is prepared and executed;

(h) We understand that you are not bound to accept the lowest evaluated bid or any other bid that you may receive;

(i) We agree to permit the Employer/DP or its representative to inspect our accounts and records and other documents relating to the bid submission and to have them audited by auditors appointed by the Employer.

(j) We confirm and stand by our commitments and other declarations made in connection with the submission of our Letter of Technical Bid.

Name: .....

In the capacity of.....

Signed ……...

Duly authorized to sign the Bid for and on behalf of……

Date……....

ELI-1: Bidder's Information Form

[The Bidder shall fill in this Form. No alterations to its format shall be permitted and no substitutions shall be accepted.]

1.	Bidder's Legal Name:	***[insert full name]***
2.	In case of JV, legal name of the representative member and of each member:	***[insert full name of each member in the JV and specify the representative member]***
3	Bidder's Country of Registration:	***[insert country of registration]***
4.	Bidder's Year of Registration:	***[insert year of incorporation]***
5.	Bidder's Legal Address in Country of Registration	***[insert street/number/town or city/country]***
6.	Bidder's trading address:	***[insert street/number/town or city/country]***
7.	Bidder's Telephone/Fax numbers:	***[insert telephone/fax numbers, including country and city codes]***
8.	Bidder's Email Address:	***[insert email address]***
9.	Bidder's Authorized Representative Information:	
	Name:	***[insert full name]***
	Address:	***[insert street/number/town or city/country]***
	Telephone/Fax numbers:	***[insert telephone/fax numbers, including country and city codes]***
	Email Address:	***[insert email address]***

Attached are copies of the following documents:

1. In case of a single entity, articles of incorporation or constitution and company incorporation/registration of the legal entity named above, in accordance with ITB 4.2 and ITB 4.8
2. Authorization to represent the firm or Joint Venture named above, in accordance with ITB 22.2
3. In case of a Joint Venture, a letter of intent to form a Joint Venture or Joint Venture agreement, in accordance with ITB 4.2
4. In case of a government-owned enterprise, any additional documents not covered under 1 above required to comply with ITB 4.5

ELI-2: Joint Venture Information Form

Each member of the Joint Venture must fill out this form separately to provide information relating to each JV member.

1.	**Bidder's legal name:**	***[insert full name]***
2.	Joint Venture Partner's legal name:	***[insert full name of Joint Venture Partner]***
3.	Joint Venture Partner's Country of Registration:	***[insert country of registration]***
4.	Joint Venture Partner's Legal Address in Country of Registration:	***[insert street/number/town or city/country]***
5.	Joint Venture Partner's Trading address	***[insert street/number/town or city/country]***
6.	Joint Venture Partner's Year of Registration:	***[insert year of registration]***
7.	Joint Venture Partner's Telephone/Fax numbers:	***[insert telephone/fax numbers, including country and city codes]***
8.	Joint Venture Partner's Email Address:	***[insert email address]***
9.	Joint Venture Partner's Authorized Representative Information:	
	Name:	***[insert full name]***
	Address:	***[insert street/number/town or city/country]***
	Telephone/Fax numbers:	***[insert telephone/fax numbers, including country and city codes]***
	Email Address:	***[insert email address]***

1. Articles of incorporation or constitution and company incorporation/registration of the legal entity named above, in accordance with ITB ITB 4.2 and ITB 4.8

2. Authorization to represent the firm named above, in accordance with ITB 22.2

3. In the case of a government-owned enterprise, documents establishing legal and financial autonomy and compliance with commercial law, in accordance with ITB 4.5

1.1.2.2.1 Form LIT 1: Pending Litigation Form

Each Bidder or member of a JV must fill in this form

Choose one of the following:

- No pending litigation, arbitration or any other material events impacting the net worth and/or liquidity of the bidder.
- Below is a description of all pending litigation, arbitration involving the Bidder or any other material events impacting the net worth and/or liquidity of the bidder (or each Joint Venture partner if Bidder is a Joint Venture).

Year	Matter in Dispute	Value of Pending Claim in NRs	Value of Pending Claim as a Percentage of Net Worth
[insert year]	• Contract Identification*: [indicate complete Contract name, number, and any other identification]* • Name of Purchaser: *[insert full name]* • Address of Purchaser: *[insert street/city/country]* • Matter in dispute: *[indicate main issues in dispute]* • Party who initiated the dispute: *[indicate "Purchaser" or "Supplier"]* • Status of dispute: *[indicate if it is being treated by under Arbitration or being dealt with by the Judiciary]*	*[insert amount]*	*[insert amount]*

Form FIN-1: Financial Situation Form

Each Bidder must fill out this form.

In case of a Joint Venture, each Joint Venture Partner must fill out this form separately and provide the Joint Venture Partner's name:

Joint Venture Partner: ***[Insert Name of Joint Venture Partner]***

Financial Data for Previous …….Years (in NRs)		
Year 1:	**Year 2:**	**Year …..:**

Information from Balance Sheet

Total Assets (TA)			
Total Liabilities (TL)			
Net Worth = TA-TL			
Current Assets (CA)			
Current Liabilities (CL)			
Working Capital = CA-CL			

Information from Income Statement

Total Revenues			
Profits Before Taxes			
Profits After Taxes			

❑ Attached are copies of financial statements (balance sheets including all related notes, and income statements) for number of years, as indicated above, complying with the following conditions:

- All such documents reflect the standalone financial situation of the legal entity or entities comprising the Bidder and not the Bidder's parent companies, subsidiaries, or affiliates.
- Historic financial statements must be audited by a certified accountant.
- Historic financial statements must be complete, including all notes to the financial statements.
- Historic financial statements must correspond to accounting periods already completed and audited (no statements for partial periods shall be requested or accepted).

Form FIN-2: Average Annual Turnover Form

Each Bidder must fill out this form.

The information supplied should be the Annual Turnover of the Bidder or each partner of a Joint Venture in terms of the amounts billed to clients for each year for work in progress or completed to NRs at the end of the period reported.

In case of a Joint Venture, each Joint Venture Partner must fill out this form separately and provide the Joint Venture Partner's name:

Joint Venture Partner: ***[Insert Name of Joint Venture Partner]***

Annual Turnover Data for the Last…… Years	
Year	**Amount (in NRs)**
Average Annual Turnover	

Form FIN-3: Financial Resources Form

Specify proposed sources of financing, such as liquid assets[3], unencumbered real assets, and other financial means (other than any contractual advance payments) available to meet the total cash flow requirements of the subject contract

Financial Resources		
No.	**Source of financing**	**Amount (in NRS)**
1		
2		
3		

[3] Liquid assets mean cash and cash equivalents, short-term financial instruments, short-term available-for-sale-securities, marketable securities, trade receivables, short-term financing receivables, and other assets that can be converted into cash within one (1) year.

Form EXP-1: General Experience

[The following table shall be filled in for the Bidder and for each member of a JV. Each contract shall be supported by Signed Contract Agreement or any other relevant evidence.]

[Identify contracts that demonstrate continuous supply over the past [number] years. List contracts chronologically, according to their commencement (starting) dates.]

General Experience			
Starting Year	**Ending Year**	**Contract Identification**	**Role of Bidder**
[indicate year]	***[indicate year]***	• Contract name: ***[insert full name]*** • Brief description of the supply performed by the Bidder: ***[describe supply performed briefly]*** • Amount of contract: ***[insert amount]*** • Name of Purchaser: ***[indicate full name]*** • Address: ***[indicate street/number/town or city/country]***	***[insert "Prime Supplier"(Single entity or JV member) or "Subcontractor"]***

Form EXP-2: Specific Experience Form

[The following table shall be filled in for contracts performed by the Bidder and by each member of a JV. Each contract shall be supported by Signed Contract Agreement or any other relevant evidence.]

Contract of Similar Nature			
Item	**Information**		
Contract Identification	***[insert contract name and reference identification number, if applicable]***		
Award date	***[insert day, month, year, e.g., 10 January, 2022]***		
Completion date	***[insert day, month, year, e.g., 12 July, 2022]***		
Role in Contract ***[check the appropriate box]***	Prime supplier		Sub contractor ☐
	Single entity ☐	JV Member ☐	
Total Contract amount	***[insert total contract amount]***		***[Insert Currency]***
Description of the contract performed by the Bidder	***[Insert brief description of contract to justify similarity]***		
If partner in a JV or subcontractor, specify participation of total Contract amount	***[Insert percent of total]***		***[Insert Amount]***
Purchaser's Name:	***[Insert full name]***		
Purchaser's Address:	***[indicate street / number / town or city / country]***		
Purchaser's Telephone/fax number:	***[insert telephone/fax numbers, including country and city area codes]***		
Purchaser's E-mail:	***[insert E-mail address, if available]***		

The Bidder shall complete this form for each contract completed.

Form EXP - 3: Technical Experience

Fill out one (1) form per contract. Each contract shall be supported by Signed Contract Agreement or any other relevant evidence.

<table>
<tr><th colspan="6">Technical Experience</th></tr>
<tr><td>Name of Product</td><td colspan="5"></td></tr>
<tr><td colspan="2">Manufacturer:</td><td colspan="4">Address and Nationality:</td></tr>
<tr><td rowspan="4">(i) Product has been in production for at least. . . . . . . years.</td><td>Description of Goods</td><td colspan="2">Year of Production</td><td colspan="2">Number of units produced</td></tr>
<tr><td>[insert description of Goods]</td><td colspan="2">[insert years]</td><td colspan="2">[insert number]</td></tr>
<tr><td></td><td colspan="2"></td><td colspan="2"></td></tr>
<tr><td></td><td colspan="2"></td><td colspan="2"></td></tr>
<tr><td rowspan="4">(ii) Product (or equipment) has been sold a minimum of. . . . . . units of similar type and specification over the last three (3) years.</td><td>Description of Goods</td><td colspan="2">Year of Production</td><td colspan="2">Number of units that has been sold</td></tr>
<tr><td>[insert description of Goods]</td><td colspan="2">[insert years]</td><td colspan="2">[insert number]</td></tr>
<tr><td></td><td colspan="2"></td><td colspan="2"></td></tr>
<tr><td></td><td colspan="2"></td><td colspan="2"></td></tr>
<tr><td rowspan="6">(iii) Product has been in operation for a minimum of . . . . . years.</td><td>Description of Goods</td><td colspan="2">Number of units that has been sold and years</td><td colspan="2">Details of purchasers</td></tr>
<tr><td rowspan="3">[insert description of Goods]</td><td>[insert number]</td><td>[insert year]</td><td colspan="2" rowspan="3">[insert name, adress (street / number / town or city / country), telephone/fax numbers with country and city code, email adresses if available]</td></tr>
<tr><td></td><td></td></tr>
<tr><td></td><td></td></tr>
<tr><td rowspan="3"></td><td></td><td></td><td colspan="2" rowspan="3"></td></tr>
<tr><td></td><td></td></tr>
<tr><td></td><td></td></tr>
</table>

Form EXP - 4: Production Capacity

Fill out one (1) form per product and manufacturer.

Production Capacity		
Name of Product		
Manufacturer:		**Address and Nationality:**
Production facility 1 (include location):	*[Insert description of goods and production capacity]*	
Production facility 2 (include location):	*[Insert description of goods and production capacity]*	
Production facility 3 (include location):	*[Insert description of goods and production capacity]*	

Form Spec-1: Bidder's proposed Specification Form

The bidder shall fill this form to provide the information on technical specifications and standards of offered goods. Bidder's Proposed Technical Specifications and Standards in column 4 shall comply with the Purchaser Requirement (Specifications and standards) specified by the Purchaser in the Schedule of Requirements.

Item No.	Name of Goods or Related Service	Country of Origin and Brand	Bidder's Proposed TS and Standards	Reference page/no. / Catalogue page/no.	Status of compliance[4]
1	2	3	4	5	6
[insert item No.]	*[insert name]*	*[insert country of Origin and Brand name]*	*[insert TS and Standards]*	*[insert reference page or no. / catalogue page or no. if any]]*	*[insert status]*

[4] *The bidder shall state as Fully compliance or Partially compliance or Compliance*

Price Schedule Forms

*[The Bidder shall fill in these Price Schedule Forms in accordance with the instructions indicated. The list of line items in column 1 of the **Price Schedules** shall coincide with the List of Goods and Related Services specified by the Purchaser in the Schedule of Requirements.]*
Notes on the Bill of Quantities
1. The Bill of Quantities shall be read in conjunction with the Instructions to Bidders, General and Particular Conditions of Contract, Technical Specifications, and Drawings.

2. The rates and prices bid in the priced Bill of Quantities shall, except as otherwise provided under the Contract, include all equipment, labor, supervision, materials, erection, maintenance, insurance, profit, taxes, and duties, together with all general risks, liabilities, and obligations set out or implied in the Contract.

3. The whole cost of complying with the provisions of the Contract shall be included in the Items provided in the priced Bill of Quantities, and where no Items are provided, the cost shall be deemed to be distributed among the rates and prices entered for the related Items of Work.

4. The costs for Design Caluclations & Drawings with associated services shall not be quoted in Bill of Quantity, but shall be considered to be included in total bid price. All the cost related to Design Services shall be inclusive in the total price quoted by the bidder.

5. The Bidder's total bid price shall be inclusive of costs for all kind of auxiliary work such as dismantling of equipment's or of any related Miscellaneous work nature as necessary to accomplish the work scope, even if not mentioned in the Bill of quantity.

6. The Bidder shall bear all the costs for the factory tests/inspections including the cost of material testing at 3rd party accredited laboratory and the costs of 3rd party inspectors (for FATs) from accredited agency/laboratory but **excluding** the expenses for the travel and per diem costs of Purchaser's nominated representatives visiting to witness the inspections – as mentioned in SCC 25.2. All these cost shall be inclusive in the total price quoted by the bidder.

7. The quoted Unit rate and Total Amount shall be inclusive of custom duty. The Bidder shall be subject to payment of customs duty as per the prevailing laws, rules and regulations of Nepal of CIP or Customs entry point value. Further details related to Taxes, Duties shall be as referred to GCC 16 and its corresponding SCC.

8. The bidder shall have to be clear about the scope of works/supply of goods as given in all Price Schedule sheet. For this, s/he shall have the site visit, discussion with purchaser's representative, readout and be cleared from the technical specifications given in this documents of each and every ítems. The offered Works/goods shall meet the technical specifications accordingly.

9. Arithmetic errors will be corrected by the Purchaser as follows:
(a) If there is a discrepancy between the unit price and the total price that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price shall be corrected, unless

in the opinion of the Purchaser there is an obvious misplacement of the decimal point in the unit price, in which case the total price as quoted shall govern and the unit price shall be corrected.

(b) If there is an error in a total corresponding to the addition or subtraction of subtotals, the subtotals shall prevail and the total shall be corrected; and

(c) If there is a discrepancy between words and figures, the amount in words shall prevail, unless the amount expressed in words is related to an arithmetic errors, in which case the amount in figures shall prevail subject to (a) and (b) above.

Price Schedules

Price Schedule Summary for Supply, Delivery, Installation, Testing and Commissioning of 56.5 MVA Synchronous Generator of Stator Windings at Kaligandaki 'A' Hydropower Station

S.No.	Price Schdule	Unit	Quantity	Unit Rate		Amount		Remarks
				CIP Project Site Price	Local Services	CIP Project Site Price	Local Services	
				Foreign Currency (FC) Portion	Local Currency Portion (NRs.)	Foreign Currency (FC) Portion	Local Currency Portion (NRs.)	
1	Supply & Delivery of Stator Windings (1 set = 360 Nos.)	Set	3					
2	Supply & Delivery of Consumable Materials, Tools and Accessories required for dismantling/installation of 1 set of Stator Windings	Set	2					
3	Dismantling of existing stator windings, Assembly of new stator windings and Testing, Commissioning, Training and all other associated works at site	Lot	2					Only Local Currency (NRs.) Applicable
4	Inspection & Testing	Lot	4					
I	**Grand Total**							

Notes:

1. This Price Schedule Summary shall be filled by compiling all the Price schedules provided below.
2. Bidders may express their bid price in any fully convertible currency. If a Bidder wishes to be paid in a combination of amounts in different currencies, it may quote its price accordingly but shall use no more than one currencies in addition to the Nepalese currency.
3.All expenditures that are to be incurred in Nepal for

i) inland transportation and related costs,

ii) all taxes, and

iii) local currency cost component of related services other than inland transportation and other services should be expressed in the Bid in Nepalese currency and will be payable in Nepalese currency.

Price Schedule (A): Goods Manufactured in Nepal

[ITB 15.7 (a), Goods manufactured in Nepal] Date:_____
ICB No: _____

1	2	3	4	5	6	7	8	9	10
Line Item N°	Description of Goods	Delivery Date as defined by Incoterms	Quantity and physical unit	Unit price EXW *Local Currency (LC)*	Total EXW price per line item (Col. 4×5) 15.7(a)(i) *Local Currency (LC)*	Price per line item for inland transportation and other services required to convey the Goods to their final destination ITB 15.7(a)(iii) *Local Currency (LC)*	Cost of local labor, raw materials and components from with origin in Nepal % of Col. 5 *Local Currency (LC)*	Sales and other taxes payable per line item if Contract is awarded (in accordance with ITB 15.7(a)(ii) *Local Currency (LC)*	Total Price per line item (Col. 6+7) 15.7(a)(iv) *Local Currency (LC)*
								Total Price	

Name of Bidder *[insert complete name of Bidder]* Signature of Bidder *[signature of person signing the Bid]* Date *[insert date]*

Note: Column 5 and 6: Currencies in accordance with ITB 16

Column 7 and 9: In Nepali Currency

Price Schedule (B): Goods Manufactured Outside of Nepal, to be Imported

[ITB 15.7(b), goods to be imported]

Date: _____
ICB No: _____

1	2	3	4	5	6	7	8	9
Line Item N°	Description of Goods	Country of Origin	Delivery Date as defined by Incoterms	Quantity and physical unit	Unit price CIP *[Beltari, Syangja, Nepal]* in accordance with ITB 15.7(b)(i) *Foreign Currency (FC)*	CIP Price per line item (Col. 5x6) 15.7(b)(i) *Foreign Currency (FC)*	Price per line item for inland transportation and other services required in Nepal to convey the Goods to their final destination specified in BDS 15.7(b)(ii) *Local Currency (LC)*	Total Price per Line item (Col. 7+8) 15.7(b)(iv) *Foreign Currency (FC)*
1	Supply & Delivery of Stator Windings (1 set = 360 Nos.)			3 Set				
2	Supply & Delivery of Consumable Materials, Tools and Accessories required for dismantling/installation of 1 set of Stator Windings			2 Set				
							Total Price	

Name of Bidder *[insert complete name of Bidder]* Signature of Bidder *[signature of person signing the Bid]* Date *[Insert Date]*

Note: Column 6 and 7: Currencies in accordance with ITB 16

Column 8: In Nepali Currency

Price Schedule (C): Goods Manufactured Outside Nepal, already imported

[ITB 15.7 (c)), Goods already imported] Date:_____
ICB No: _____

1	2	3	4	5	6	7	8	9	10	11	12
Line Item N°	Description of Goods	Country of Origin	Delivery Date as defined by Incoterms	Quantity and physical unit	Unit price including Custom Duties and Import Taxes paid, in accordance with ITB 15.7(c)(i)	Custom Duties and Import Taxes paid per unit in accordance with ITB 15.7(c)(ii) , [to be supported by documents]	Unit Price net of custom duties and import taxes, in accordance with ITB 15.7(c) (iii) (Col. 6 minus Col.7)	Price per line item net of Custom Duties and Import Taxes paid, in accordance with ITB 15.7 (c)(iii) (Col. 5×8)	Price per line item for inland transportation and other services required in Nepal to convey the goods to their final destination, as specified in BDS in accordance with ITB 15.7 (c)(v)	Sales and other taxes paid or payable per item if Contract is awarded (in accordance with ITB 15.7 (c)(iv)	Total Price per line item (Col. 9+10) ITB 15.7 (c)(vi)
										Total Bid Price	

Name of Bidder *[insert complete name of Bidder]* Signature of Bidder *[signature of person signing the Bid]* Date *[insert date]*

Note: Column 6,7, 8 and 9: Currencies in accordance with ITB 16

Column 10 and 11: In Nepali Currency

Price and Completion Schedule (D): - Related Services

Date: _____
ICB No: _____

1	2	3	4	5	6	7
Service No.	Description of Services (excludes inland transportation and other services required in Nepal to convey the goods to their final destination)	Country of Origin	Delivery Date at place of Final destination	Quantity and physical unit	Unit price *Foreign Currency (FC) /Local Currency (LC)*	Total Price per Service (Col. 5*6 or estimate) *Foreign Currency (FC) /Local Currency (LC)*
1.	Dismantling of existing stator windings, Assembly of new stator windings and Testing, Commissioning, Training and all other associated works at site			2 Lot		
2.	Inspection & Testing			4 Lot		
				Total Bid Price		

Name of Bidder *[insert complete name of Bidder]* Signature of Bidder *[signature of person signing the Bid]* Date *[insert date]*

Notes:

Column 6 and 7: Currencies in accordance with ITB Clause 16

Prices are to be quoted inclusive of all custom duties, sales and other similar taxes applicable in Nepal and payable on the Related Services, if the Contract is awarded to the Bidder

Bid Security

Bank Guarantee

Bank's Name, and Address of Issuing Branch or Office
(On Letter head of the Bank)

[This is the format for the Bid Security to be issued on the letterhead by a Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law of Nepal]

[insert Bank's Name, and Address of Issuing Branch or Office]

Date: ***[insert date]***

Beneficiary: ***[insert Name and Address of Purchaser]***

BID GUARANTEE No.: ***[insert number]***

We have been informed that ***[insert name of the Bidder]*** (hereinafter called "the Bidder") intends to submit its bid to you (hereinafter called "the Bid") for the execution of ***[insert name of contract]*** under Invitation for Bids No***. [insert IFB number]*** ("the IFB").

Furthermore, we understand that, according to your conditions, bids must be supported by a bid guarantee.

At the request of the Bidder, we ***[insert name of Bank]*** hereby irrevocably undertake to pay you any sum or sums not exceeding in total an amount of ***[insert amount in figures, (insert amount in words)]*** upon receipt by us of your first demand in writing accompanied by a written statement stating that the Bidder is in breach of its obligation(s) under the bid conditions, because the Bidder:

(a) has withdrawn or modifies its Bid:

i) during the period of bid validity specified by the Bidder on the Letter of Bid, in case of electronic submission

(ii) from the period twenty-four hours prior to bid submission deadline up to the period of bid validity specified by the Bidder on the Letter of Bid, in case of hard copy submission; or

(b) does not accept the correction of errors in accordance with the Instructions to Bidders (hereinafter "the ITB"); or

(c) changes the prices or substance of the bid while providing information pursuant to clause 29.1 of ITB; or

(d) having been notified of the acceptance of its Bid by the Purchaser during the period of bid validity, (i) fails or refuses to execute the Contract Agreement, or (ii) fails or refuses to furnish the performance security, in accordance with the ITB.

(e) is involved in fraud and corruption in accordance with the ITB.

This guarantee will expire: (a) if the Bidder is the successful Bidder, upon our receipt of copies of the contract signed by the Bidder and the performance security issued to you upon the instruction of the Bidder; and (b) if the Bidder is not the successful Bidder, upon the earlier of (i) our receipt of a copy of your notification to the Bidder of the name of the successful Bidder; or (ii) thirty (30) days after the expiration of the Bidder's bid which comes to be ***[insert the date]***.

Consequently, any demand for payment under this guarantee must be received by us at the office on or before that date.

This guarantee is subject to the Uniform Rules for Demand Guarantees, ICC Publication No. 758[5].

. . .Bank's seal and authorized signature(s) . . .

[Note: All italicized text is for use in preparing this form and shall be deleted from the final product.]

[5] As the case may be, ICC Publication No. 758 (or subsequent ICC Publications) may be used. In such cases, modify the Publication number.

Manufacturer's Authorization Letter

[*This letter of authorisation should be on the letterhead of the manufacturer and should be signed by the person with the proper authority to sign documents that are binding on the manufacturer]*

Date: *[insert date of Bid Submission]*

IFB No.: *[insert number]*

To: *[insert complete name and address of Purchaser]*

WHEREAS *[insert complete name of Manufacturer or Manufacturer's authorized agent]* who are official manufacturers of *[insert type of goods manufactured]* having factories at *[insert full address of Manufacturer's factories],* do hereby authorize *[insert complete name of Bidder]* exclusively to submit a Bid in relation to the Invitation for Bids indicated above, the purpose of which is to provide the following Goods, manufactured by us *[insert name and/or brief description of the goods]* and to subsequently sign the Contract.

We hereby extend our full guarantee and warranty in accordance with Clause 27 of the General Conditions of Contract, with respect to the Goods offered by the above firm.

Name: ***[insert complete name of person signing the Authorization]***

In the capacity of: ***[insert legal capacity of person signing the Authorization]***

Signed: ***[insert signature of person whose name and capacity are shown above]***

Duly authorized to sign the Authorization for and on behalf of: ***[insert complete name of Manufacture]***

Date: ***[insert date of signing]***

(Section V)

Schedule

Of

Requirements

Section V. Schedule of Requirements

Contents

List of Goods and Related Services

The purpose of the List of Goods and Related Services (LGRS) is to briefly describe and specify the quantities of each of the Goods and Related Services that the Purchaser requires the Bidder to include in its Bid. As a part of the SR, the LGRS constitutes a Contract document and, therefore, it is a part of the Contract. The Purchaser must prepare the LGRS and include it as a part of the SR.

s

If the Goods and Related Services are grouped in lots/packages, the Purchaser must state here whether Bidders are permitted to submit Bids for individual lots or not. For example:

Note:

The Goods and Related Services are grouped into lots for segregated delivery schedules; however, bidding and evaluation will be conducted as a single package, and only complete bids for the entire project will be accepted—partial bids or bids for individual lots will not be permitted.

Package Name: NEA-KGA-ICB-2082/83-01/RE				
Item No.	**Name of Goods or Related Services**	**Description**	**Unit of Measurement**	**Quantity**
A	**Goods**			
1	Supply & Delivery of Stator Windings (1 set = 360 Nos.)		Set	3
2	Supply & Delivery of Consumable Materials, Tools and Accessories required for dismantling/installation of 1 set of Stator Windings		Set	2
B	**Services**			
3	Dismantling of existing stator windings, Assembly of new stator windings and Testing, Commissioning, Training and all other associated works at site		Lot	2
4	Inspection & Testing (excluding travel/per diem costs of NEA representatives)		Lot	4

Delivery and Completion Schedule

Delivery shall take place in compliance with the dates, duration, and locations indicated below:

(I) in case of Delivery schedule is not determined as evaluation criteria

Package Name: NEA-KGA-ICB-2082/83-01/RE

Line Item No	Description of Goods	Quantity	Physical unit	Final Destination	Delivery (as per Incoterms) Date
1.	2	3	4	5	6
A	**Goods**				
1	Supply & Delivery of First set of Stator Windings, Consumable Materials, Tools and Accessories	1	Set	KGAHPS, Beltari, Syangja, Nepal	Within 270 Days from the date of Approval of QAP & Drawings
2	Supply & Delivery of Second set of Stator Windings, Consumable Materials, Tools and Accessories	1	Set	KGAHPS, Beltari, Syangja, Nepal	Within 450 Days from the date of Approval of QAP & Drawings
3	Supply & Delivery of Third set of Stator Windings.	1	Set	KGAHPS, Beltari, Syangja, Nepal	Within 630 Days from the date of Approval of QAP & Drawings

(II) in case of Delivery schedule is determined as evaluation criteria

Line Item No	Description of Goods	Quantity	Physical unit	Final Destination as specified in BDS	Delivery (as per Incoterms) Date	
					Earliest Delivery Date	Final Delivery Date
1.	2	3	4	5	6	7

Note: The date of effectiveness of contract shall be as of signing the contract

List of Related Services and Completion Schedule

Package Name: NEA-KGA-ICB-2082/83-01/RE

Service	Description of Service	Quantity	Physical unit	where Services shall be performed	Final Completion Date(s) of Services
1.	**2**	**3**	**4**	**5**	**6**
B	**Services**				
1	Approval of Quality Assurance Plan (QAP), Design Calculations and Drawings	1	Lot	KGAHPS Beltari, Syangja, Nepal	Within 60 Days from date of contract signing
2	Inspection & Testing	4	Lot	Third Party Laboratory Premises Manufacturer's factory permises	One (1) lot of material conformity test at 3rd party laboratory: before the manufacturing of first set of stator windings Three (3) lots of FATs: after the manufacturing & before dispatch of each of the 3 sets of stator windings

4	Dismantling of existing stator windings, Assembly of new stator windings and Testing, Commissioning, Training and all other associated works at site for first set of Stator Windings	1	Lot	KGAHPS Beltari, Syangja, Nepal	Within 75 Days of issuance of work order after Goods Delivery at site and shutdown approval
5	Dismantling of existing stator windings, Assembly of new stator windings and Testing, Commissioning, Training and all other associated works at site for second set of Stator Windings	1	Lot	KGAHPS Beltari, Syangja, Nepal	Within 75 Days of issuance of work order after Goods Delivery at site and shutdown approval

Technical Specification

1. GENERAL SPECIFICATIONS

1.1 INTRODUCTION

The Nepal Electricity Authority (NEA) is initiating the procurement of complete stator windings FOR 56.5 MVA Synchronous generators at Kaligandaki 'A' Hydropower Station, Beltari, Syangja, Nepal. This procurement encompasses a full set of stator bars along with all necessary accessories to ensure seamless dismantling and installation of the new stator bars into the existing stator. These stator bars shall be designed to be supplied and retrofitted into the current 56.5 MVA synchronous generator, which was manufactured and assembled by TOSHIBA Co. Ltd. It is imperative to note that the contractor is not permitted to introduce any substantial modifications to the existing system.

The detailed specifications provided address the features and technical requirements for the supply, delivery, installation, testing, and commissioning of the complete set of stator windings for the 56.5 MVA synchronous generator at the Kaligandaki 'A' Hydropower Station. All supplied components and parts must be new, unused, and fit for the intended purpose, adhering to all relevant regulations, quality and dimension standards that align with the existing Toshiba's 56.5 MVA Synchronous Generator at the Kaligandaki 'A' Hydropower Station.

The supplier will be fully responsible for their work, which includes documentation, preparation for shipment, inspection, installation and testing, warranty provisions, and compliance with all applicable codes and standards as well as the specific requirements outlined in these specifications.

1.2 SCOPE OF WORKS

1.2.1 General

This Chapter describes the supply, installation, and commissioning of vertical three-phase A.C. synchronous generators complete stator windings for direct coupling to Francis turbines. The existing generators are complete with excitation equipment and other auxiliary equipment as specified in below sections.

The Bidder shall submit with the tender the necessary technical brochures and other details for the Stator Bars/Coils with the Specifications. Additionally, the Tender includes drawings of the individual Stator Bars/Coils (Top, Bottom, Terminal Top, Terminal Bottom) and total Stator Winding with circuit rings for line and neutral connection, RTDs placement etc. and showing binding dimensions for parts such as inner and outer stator diameter, and the width and depth of the generator pit.

The scope covers provision of labor, tools, plants, materials and performance of all work necessary for dismantling, design, engineering, manufacturing, quality assurance, quality control, shop assembly, shop testing, insurance, delivery at site, installation, commissioning, and acceptance testing of new complete stator winding with associated insulation material (comprising top and bottom bars) in the existing core and associated instrumentation of vertical type synchronous generator, rated 56.5 MVA, 13.8kV, power factor=0.85, 50Hz, 300rpm, with guarantee for at least five (5) calendar years of trouble-free safe operation.

The guarantee period shall commence after successful operational acceptance of 24 hours continuous operation at rated load.

The stator bars and associated accessories to be supplied must meet the relevant IEC or equivalent standards in all aspects, including engineering design, manufacturing, and operational perspectives. The bidder must submit detailed information of proposed stator windings and product catalogs to justify their suitability for the intended use. The purchaser reserves the right to decline the acceptance of goods/services that are deemed unsuitable for the intended purpose.

Detailed Scope of Work

A) Design and Engineering

Contractor shall:

- Submit the Quality Assurance Plan (QAP) with details of work schedule, inspections, reseource allocations and other related inormation.
- Submit detailed drawings and electrical calculations (for approval by Purchaser) of stator bars/coils and entire stator windings, including drawings for stator windings, RTD connections, line/neutral side connections, etc.
- Provide design calculations (for approval by Purchaser) demonstrating compliance with NEA requirements before manufacturing begins.
- Design calculations demonstrating compliance with the work requirements are submitted to the NEA before manufacturing commences.

B) Supply and Delivery:

Contractor shall execute:

- Supply of Roebel type half bar design (Top half bar - 180 nos. including Six (6) Top Jumper Bars and bottom half bar - 180 nos. including Six (6) Bottom Jumper Bars) stator winding including Bus ring/Circuit Ring. Stator bars shall be of Epoxy Resin-rich Mica-mat tape type dried in vacuum condition and cured under controlled temperature and pressure or equivalent. The new design of the winding shall be such that the existing slots in the stator core i.e., 180 nos. shall be used for the new half bar type winding.
- Supply of winding kit and accessories including glass epoxy class "F" liners, wedges, Wedges, Side Spacers, wooden blocks, binding rings, pre-preg tape, epoxy resin, glass tape, flet+spacers, RTDs, Stopper, Spacers, Adhesive Tape, ripple springs, Slide, Brazing elctrodes & accessories, insulation caps, filler compound {Epikote, Epicure K61B, Silica, Glass Chip, BDMA}, glass cloths, mica sheets, Red Varnish, bolts, nuts etc. or equivalent materials. The contractor shall ensure availability of sufficient quantity of winding insulating material including instrumentation required for the complete assembly of new stator winding in all respects.
- All stator winding removal and new winding assembly tools & tackles, cutting, welding, brazing, and heating equipment including consumables shall be in the scope of contractor.
- All the equipment and accessories required for the job, but not mentioned explicitly in Technical Requirement or BOQ, shall be supplied by Contractor without any additional cost to Purchaser.

Delivery Destination:

- Kaligandaki 'A' Hydro Power Station, Beltari, Syangja District, Gandaki Province, Nepal

C) Installation, Testing and Commissioning Part:
Contractor shall execute:

- Stator Winding data collection of existing stators winding for engineering & design purposes (if required).
- Unwinding/dismantling of old stator bars/coils from the existing stator pit.
- Inspection, Cleaning, Varnish Treatment and ELCID test in the Stator Core.
- Replacement of existing winding to Roebel type half bar design (360 total bars)
- Connecting Binding Ring
- Inserting of Bottom Bars and Side Spacers
- High Potential Test of Bottom Bars
- Installing of Spacers between Bottom Bar End Portions and Binding Ring
- Installing of Spacers between Bottom Bar End Portions
- Binding of Bottom Bar End Portions
- Installing of R.T.D.s and Spacers
- Inserting of Top Bars and Side Spacers
- High Potential Test of Top Bars
- High Potential Test of R.T.D.s
- Driving of Stator Bar Wedges
- Installing of Spacers between Top Bar End Portions
- Brazing of Lower Series Portions
- Insulation of Lower Series Portions
- Scaffolding
- Brazing of Upper Series Portions
- Insulation of Upper Series Portions
- Assembling of Circuit Rings
- Assembling of Bar Stoppers
- Inspection and Cleaning
- Drying-out of Stator Inside
- Varnish Treatment
- Final High Potential Test
- Brazing and varnishing of completely for newly installed stator winding. Induction type Brazing machine and any type of other associated item required for brazing induction heating type brazing purposes shall be in the scope of contractor. The Contractor shall ensure requisite spares & any consumables for brazing machines to avoid any delay in the completion works. During the execution works, to minimize the completion time, parallel brazing from both sides i.e., from the Drive End (DE) side and from the Non-Drive End (NDE) side shall be done preferably.
- All tests as per relevant standard and technical requirement of Contract.
- Performance of dry and wet tests with testing and commissioning report.

- All civil/mechanical/electrical works, not mentioned in the Technical Requirement or BOQ but required for complete works completion shall be done by the contractor without any additional cost from the Purchaser.

D) Testing

a) Inspections at Manufacturer's country

- The Bidder/Manufacturer shall arrange Four (4) lots of Inspections as per the following details:
  1st Inspection: Quality Conformity Stage Inspection before the manufacturing of coils of first set of Stator Windings for 7 days to be performed at a third party accredited laboratory and to be witnessed by two (2) representatives of NEA

  2nd Inspection: Inspection/Pre-dispatch Factory Acceptance Test of coils after the manufacturing of coils of first set of Stator Windings for 7 days to be performed at manufacturer's factory premises and to be witnessed by two (2) representatives of NEA and one (1) 3rd party inspector from accredited agency/laboratory

  3rd Inspection: Inspection/Pre-dispatch Factory Acceptance Test of coils after the manufacturing of coils of second set of Stator Windings for 7 days to be performed at manufacturer's factory premises and to be witnessed by two (2) representatives of NEA and one (1) 3rd party inspector from accredited agency/laboratory

  4th Inspection: Inspection/Pre-dispatch Factory Acceptance Test of coils after the manufacturing of coils of third set of Stator Windings for 7 days to be performed at manufacturer's factory premises and to be witnessed by two (2) representatives of NEA and one (1) 3rd party inspector from accredited agency/laboratory

- All associated costs for the inspections including testing setup, equipment, compliance with IEC/IEEE standards as specified in the Testing section, test execution, fees of Third-Party laboratory and fees of third party inpspectors **except** the travel and per diem costs of NEA representatives shall be borne by the Contractor.

b) On-Site Testing

- Contractor shall arrange all necessary testing equipment.
- Contractor shall Conduct IEC/IEEE standard tests as mentioned in Testing section of this document.

E) Commissioning & Handover

- Contractor shall Commission all installed Synchronous Generator Stator Winding and hand over to NEA.
- Submit as-built drawings, testing and commissioning reports, service manuals, troubleshooting guides, safety protocols, and relevant documentation.
- Handover deemed successful only after NEA confirms satisfactory operational performance.

F) Training of NEA Personnel

a) On-Site Training

- The Contractor shall provide 5-day hands-on training for 10 nos. of NEA's technical staff at the Kaligandaki 'A' Hydro Power Station during/after each unit's commissioning, covering stator bars/coils dismantling, insertion, debrazing, brazing, wedge tightening, varnishing, preventive maintenance, and operating instructions.
- The costo f training material, trainor fees etc. Shall be borne by the contractor.

Note:

- All works shall comply with NEA's technical and safety standards.
- Any other item(s) and works, not mentioned specifically but necessary for the satisfactory commissioning of all generating unit shall also be provided/arranged by the Contractor without any additional cost to Purchaser.

1.2.2 Stator Windings Requirements

The offered stator windings for the 56.5 MVA synchronous generator must conform to high standards of engineering, design, and workmanship. They must be complete with all necessary components for effective and trouble-free operation, compatible to the existing system's requirements for circuit breaker or substation operation. These components are considered within the contractor's scope, whether or not they are explicitly mentioned in this specification.

1.3 CONTRACT DURATION AND LOCATION

1.3.1 Contract Duration

The total contract duration for this project is set for a total duration of 23 months.

1.3.2 Project Location

The project is based at the Kaligandaki 'A' Hydropower Station, which is situated in Beltari, Syangja, Nepal.

1.3.3 Site Visit and Responsibilities

The proposed Manufacturer's technical representatives (including at least one Design Engineer) are encouraged to visit the plant site between time of bid opening and submission, at least once, in order to gain a comprehensive understanding of its design, accessibility, transportation means, and all other relevant factors that must be taken into consideration for the effective implementation of the contract. This site visit is crucial for evaluating the logistical and operational aspects associated with carrying out the project successfully.

1.4 CODES AND STANDARDS

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references the latest edition of the referenced document (including any amendments) applies.

a. IEC 60027-1, Letter symbols to be used in electrical technology – Part 1: General
b. IEC 60027-4, Letter symbols to be used in electrical technology – Part 4: Rotating electric machines

c. IEC 60034-2 (all parts), Rotating electrical machines – Part 2: Standard methods for determining losses and efficiency from tests (excluding machines for traction vehicles)
d. IEC 60034-3, Rotating electrical machines – Part 3: Specific requirements for synchronous generators driven by steam turbines or combustion gas turbines
e. IEC 60034-5, Rotating electrical machines – Part 5: Degrees of protection provided by the integral design of rotating electrical machines (IP code) – Classification
f. IEC 60034-6, Rotating electrical machines – Part 6: Methods of cooling (IC code)
g. IEC 60034-8, Rotating electrical machines – Part 8: Terminal markings and direction of rotation
h. IEC 60034-12:2016, Rotating electrical machines – Part 12: Starting performance of single speed three-phase cage induction motors
i. IEC 60034-15, Rotating electrical machines – Part 15: Impulse voltage withstand levels of form-wound stator coils for rotating a.c. machines
j. IEC 60034-18 (all parts), Rotating electrical machines – Part 18: Functional evaluation of insulation systems
k. IEC 60034-18-41, Rotating electrical machines – Part 18-41: Partial discharge free electrical insulation systems (Type I) used in rotating electrical machines fed from voltage converters –Qualification and quality control tests.
l. IEC TS 60034-25, Rotating electrical machines – Part 25: AC electrical machines used in power drive systems – Application guide
m. IEC 60034-29, Rotating electrical machines – Part 29: Equivalent loading and superposition techniques – Indirect testing to determine temperature rise
n. IEC 60034-30-1, Rotating electrical machines – Part 30-1: Efficiency classes of line operated A.C. motors (IE-code)
o. IEC 60038, IEC standard voltages
p. IEC 60050-411:1996, International Electrotechnical Vocabulary (IEV) – Chapter 411: Rotating machines
q. IEC 60060-1, High-voltage test techniques – Part 1: General definitions and test requirements
r. IEC 60072 (all parts), Dimensions and output series for rotating electrical machines
s. IEC 60085, Electrical insulation – Thermal evaluation and designation
t. IEC 60204-1, Safety of machinery – Electrical equipment of machines – Part 1: General requirements
u. IEC 60204-11, Safety of machinery – Electrical equipment of machines – Part 11:
v. Requirements for HV equipment for voltages above 1 000 V a.c. or 1 500 V d.c. and not exceeding 36 kV
w. IEC 60335-1:2010, Household and similar electrical appliances – Safety – Part 1: General requirements
x. IEC 60445, Basic and safety principles for man-machine interface, marking and identification-Identification of equipment terminals, conductor terminations and conductors
y. IEC 60664-1, Insulation coordination for equipment within low-voltage systems – Part 1: Principles, requirements and tests
z. IEC 61148, Terminal markings for valve device stacks and assemblies and for power conversion equipment

aa. IEC 61293, Marking of electrical equipment with ratings related to electrical supply – Safety requirements.
bb. IEC 60027-1, Letter symbols to be used in electrical technology – Part 1: General
cc. IEC 60034-1:2010, Rotating electrical machines – Part 1: Rating and performance
dd. IEC 60034-4:2008, Rotating electrical machines – Part 4: Methods for determining synchronous machine quantities from tests
ee. IEC 60034-19, Rotating electrical machines – Part 19: Specific test methods for d.c. machines on conventional and rectifier-fed supplies
ff. IEC 60034-29, Rotating electrical machines – Part 29: Equivalent loading and superposition techniques – Indirect testing to determine temperature rise
gg. IEC 60051(all parts), Direct acting indicating analogue electrical measuring instruments and their accessories
hh. IEC 60051-1, Direct acting indicating analogue electrical measuring instruments and their accessories – Part 1: Definitions and general requirements common to all parts.
ii. All related IEEE/JC Standards.

In the event of any apparent conflict among standards, codes, or this specification, the Bidder/Contractor must refer the conflict to NEA for written resolution before starting fabrication. The NEA retains right to make final decision regarding the acceptance of proposed standards.

1.5 WORKMANSHIP

The components or parts shall be designed and arranged in such a manner that they can be easily inspected, cleaned, assembled, and dismantled without requiring extensive disassembly. They should be engineered and manufactured following the latest recognized standards of workmanship and modern engineering practices.

Materials Quality: The materials used for manufacturing the 56.5 MVA synchronous generator stator bars shall be new, standard, commercial-grade, and of first-grade quality in terms of materials, workmanship, and design. The workmanship and design shall be the most appropriate for the application.

Special Tools: The Contractor shall furnish all special tools required for the installation, testing, and commissioning of the 56.5 MVA synchronous generator. All the tools required for executing electrical, mechanical and civil works shall be made available by Contractor at site. Further, all the tools and equipment required for carrying out on-site testing shall also be under Contractor's scope.

1.6 NORMAL SERVICE CONDITION

The equipment furnished under this specification shall perform all its functions and operate satisfactorily under these meteorological conditions of the site of installation. The site service condition is as:

S. N.	Description	Parameters
1	Ambient air temperatura	
	i) Maximum	+40° C
	ii) Minimum	+20° C

2	Altitude	Not exceeding 1000 meters above sea-level
	Maximum relative humidity	0.7
3	Seismicity	
	i) Operating basis earthquake (OBE)	0.3 g
	ii) Maximum credible earthquake (MCE)	0.6 g
4	Vertical acceleration is assumed to be 75% of above values	

2. EXISTING EQUIPMENT SPECIFICATION

2.1 GENERAL DESIGN

The generators are vertical three-phase synchronous machines and conform in all respects to the requirements of IEC Recommendation No. 34 for synchronous machines, unless otherwise specified.

Each generator has an upper spider bracket with a combined thrust and guide bearing and a lower spider bracket with a guide bearing. The upper bracket and thrust bearing carry the total load of the generator rotor, generator and turbine shaft, and turbine runner, as well as the hydraulic thrust during operation and runaway conditions. The generator air housing is of concrete construction.

The generator is designed to withstand the seismic accelerations stated in Chapter 1, Section 1.6.

The generator is designed and constructed to eliminate all disturbing vibrations and avoidable noises during operation.

2.1.1 Generator Details

In the existing 56.5 MVA hydro-generator the turbine shaft is connected through middle shaft to the turbine side (lower part) of rotor at flange part of generator main shaft, and SSG is attached through connection shaft to upper side of rotor.

- Rotor consists of main shaft, rotor spoke, rotor rim and 20 pieces of poles attached firmly around the rotor rim. Thrust bearing placed in upper part of rotor holds total weight of rotor of generator and turbine, and water thrust load coming from turbine.
- Stator consists of stator frame and stator core made of silicon steel plate stacked in internal side of the stator frame. Stator core is assembled in the following ways:
    - Stator core punching plates are stacked along the key attached to rib deployed on internal track of stator frame, both sides of the stacked stator core are fastened firmly with nuts against studs at both sides of rib through cramping plate and cramping finger.
    - Stator coil is fixed into the slot at inside of stator core by wedges and liners. Stator coils are connected to circuit ring or jumper bar and those are connected bus bar of line and neutral side. And it connected in star form with main circuit copper bar at neutral side further.
- Air coolers are mounted on the outside of stator frame for air cooling.
- Upper bracket is attached at the upper end of the stator frame, which supports collector ring cover. The thrust bearing, upper guide bearing and others are installed in bearing oil tank in the center of bracket.

- Lower bracket is fixed into foundation base of concrete floor on upper edge of turbine pit with bolts, and six pieces of brakes and jack are attached on the lower bracket through brake stand. Lower guide bearing is mounted to inside of lower bearing bracket and oil tank is provided on lower side of lower bracket.

The existing 56.5 MVA synchronous generator is a vertical unit equipped with a static excitation system and a flat bus bar arrangement for both neutral and terminal connections. All connected components name, material and number of major parts forming the generator and their specifications are detailed in this document.

2.1.2 Design and Construction

2.1.2.1 Design Consideration

The stator windings are capable of safely withstanding maximum stresses during normal operation, runaway-speed conditions, two-phase and three-phase short circuit conditions, or single-phase earth fault at maximum output for which generators are capable of, 180° and 120° out-of-phase synchronization, magnetic unbalance at rated speed with 50% of the poles short circuited and brake application, and seismic forces, etc.

Since the existing excitation system is to be retained, the design of the 56.5 MVA synchronous generator stator bars/coils to be supplied should be done considering the parameters of the existing excitation system as mentioned in the provided data sheet.

2.1.3 Rating and Functional Characteristics of Existing Generator

S. No.	Description	Values	Units
1	Generator Construction type	Conventional Type Vertical	
2	Type of stator winding	Roebel Bar type	
3	No. of phases	3	
4	Rated continuous power, (MVA)	56.5	MVA
5	Generator voltage, (kV)	13.8 +/- 10%	kV
6	Frequency, (Hz)	50 (-)2.5% to (+)2.5%	Hz
7	Power factor, (cosφ) lagging	0.85	
8	Rated speed, (rpm)	300	Rpm
9	Direction of rotation (viewed from top)	Anti-Clockwise	
10	Short circuit ratio	1.045	
11	Insulation class of stator and rotor winding	F	Class
12	Maximum permissible temperature of stator winding under maximum power (56.5 MVA) with ambient temperature 40 ºC and cooling water inlet temperature 27 ºC.	82	ºC.
13	Existing Losses details:		
	Friction Losses	234	kW
	Iron Losses	173	kW
	Excitation No Load Losses	42	kW
	Stator I2R Losses	151	kW

	Additional Load Losses	77	kW
	Excitation and Field Circuit Losses	123	kW
	Total Losses at rated value	800	kW

2.1.4 Stator Frame (Existing)

Stator frame is produced by steel plate welding. Stator frame is fixed to stator base with bolts and a radial key for torque transmission is attached between stator frame and the base. Stator base is fixed firmly by foundation bolts.

Six of air coolers are mounted around the stator frame to remove the loss from ventilation air. Line side bus bar (U, V, W Phases) and neutral bus bar (X, Y, Z Phases) placed on the upper part of stator frame are connected to circuit copper bar with bolts and insulated.

2.1.5 Stator Core (Existing)

Stator core punching plates are stacked along the key attached to rib deployed on internal side of stator frame, -'Both edge of the stacked stator core is fastened firmly with nuts against studs at both sides of rib through clamping plate and clamping finger.

180 slots are deployed along the internal side of stator core, and stator coils are inserted into the slots in two layers (upper and lower coil) and they are fixed firmly with slot wedges, liners, spacers and others. For prevention of falling out of stator coil, coil ends are fixed each other and upper & lower coils are fixed at upper edge of stator ferrite core with bar stopper.

The core laminations are punched from high-grade non-ageing cold rolled silicon steel with non-oriented grains and high permeability, coated with insulating enamel (thermal classification 'F') to minimize eddy current losses. Temperature detectors are embedded only in the stator winding parts and not in any parts of the stator core. All temperature detectors in stator are wired with shielded cables.

The stator core laminations have uniform tightness, and the ventilation air ducts are properly supported to avoid core vibration and deformation.

2.1.6 Stator Winding (Existing)

Stator coil is a bar coil and is a resin coil processed in vacuums heat curing after half duplicated covering with thermosetting resin impregnation mica tape.

Stator coils are all inserted into slots and connected with brazing after stator core is stacked at site. The connected stator coil is then connected to circuit ring, and that is connected to bus bar.

Line side bus bar is connected to main circuit cable and neutral side bus bar with current transformer for instrumentation purpose attached is connected to neutral grounding equipment

Stator coil is fixed firmly with slot wedges, liners, spacers and other fillers inserted within the slot to prevent its vibration and move because two folds electromagnetic force of commercial frequency is imposed during generator operation.

Coil end is also fixed firmly with bind ring and fillers between coil ends to make it withstand against large electromagnetic forces caused by exceeded current at sudden short circuit.

The stator winding is star (Y)-connected with terminal/line and neutral leads brought out to the stator terminals. The stator winding is made of individually insulated stranded copper conductors, stacked and form-pressed to constitute coils or half-coils with the design cross-section. Each coil is insulated for the full generator voltage. Coil insulation is applied continuously throughout the coils with equal thickness to both the slot and end-turn portions.
The stator winding and connections, as well as connecting leads, main and neutral leads, shall be class 'F' Insulation. Epoxy resin-rich mica-mat tape is applied throughout the entire length of the half-turn coil with half-lapping and the coils are dried in a tank in Vacuum condition and cured under properly controlled temperature and pressure. All bars/coils of the same type are of uniform dimensions and completely interchangeable.
The stator winding insulation is of a non-flammable type and conforms to Class F as defined by IEC Publication 85.

2.1.7 Rotor (Existing)

Rotor consists of rotor spoke, rotor rim, pole piece, rotor coil and others, with enough strength withstanding against centripetal force at runaway speed of Francis turbine.
Unbalance of rotor is adjusted in balance adjustment process and the balancing is done by attaching proper balance weights with bolts on spoke. The rotor is of the salient pole type and built-in accordance with best practices. It is designed to withstand safely all overloads and other stresses encountered during abnormal operating or runaway speed conditions.
The flywheel effect GD^2 of the rotating parts is high enough to ensure operational stability and satisfactory turbine regulating conditions.
The air-gap between stator and rotor is 18 mm minimum and 29.4 mm maximum.

2.1.8 Field Winding (Existing)

Total 20 pieces of poles are built into rotor rim by inserting their dab tails into dab tail slots. Pole consists of pole piece which is assembled by stacking punched thin steel plates and then clamping them with clamping plates in both sides and bolts, rotor coil, insulation collar, damper bar and connection plate.
Connection between coils is achieved by binding with bolts and brazing after piling connection terminals of N & S pole.
Both terminals of damper bar which is burred into each pole piece head are shorted with short bar and connection bar and connection bar of each pole is connected with inter pole connector in bucket shape.
Exciting copper bar runs from rotor coil to collector ring through upper part of rotor rim and on outside surface of main shaft. Exciting copper bar is fixed with insulation bushing with each connection parts taped by insulation material and then damp proofed with varnish.
The field winding is insulated with Class F insulation as defined by IEC Publication No. 85, comprising epoxy thermoset resin.
The end connections of the field winding are brought to slip rings.

2.1.9 Shaft and Shaft Alignment (Existing)

Rotor spoke is attached to generator main shaft with rim keys. Connection shaft is attached at the top end of main shaft and through this connection shaft SSG is attached.

Lower part of main shaft is connected to turbine shaft through the middle shaft with coupling flange and connection bolts. The coupling flange is covered with coupling cover to protect someone from touching carelessly to rotation parts of main shaft for safety.
The unit shaft system consists of two parts: the generator shaft and the turbine shaft. The turbine and generator flange are aligned at elevation 393.5 m, i.e., 4000 mm above the turbine center.
.

2.1.10 Bearings and Spider Brackets (Existing)

Upper guide bearing for suppression of radial swing and thrust bearing for supporting weight turbine and generator rotor, and water thrust load. Upper guide bearing consists of 12 pieces of segment type metal sustained by pivot and is placed in oil tank in upper bracket.
Thrust bearing is a spring supported type, which consists of 10 pieces of thrust static pads and 100 pieces of coil springs, and is placed in upper oil tank.
To minimize the total deformation of static pad, springs are deployed properly under the static pad to offset the extrusion type of thermal deformation coming from friction loss with intrusion type of elastic deformation coming from oil film pressure. The springs are placed on spring table in oil tank.
Spring supported type thrust bearing makes thrust load shared in equal by each static pad, which makes the bearing reliable and superior in its maintainability and workability because delicate adjustment of height of each static pad is not needed.
Lower guide bearing is installed at lower part of generator to suppress radial swing of rotor. Lower guide bearing consists of 8 pieces of segment metals sustained by pivot and is placed in oil tank.
The bearings are furnished with double insulation to prevent bearing currents. Bolted flanges are provided wherever necessary to facilitate installation, dismantling, and servicing.

2.1.11 Anticondensation Heaters (Existing)

To avoid water condensation during long non-operative periods of the machine, heating elements are installed in the air circuit and in the excitation cubicles. These elements are connected to a 3-phase 400/230 V AC, 50 Hz power source via switching contactors.
The temperature is thermostat-controlled to approximately 5°C above ambient air. The necessary contactors for switching the heating power on and off, as well as the internal wiring, are part of the generator supply. Terminal blocks for external connections of power and control signals are located in a terminal cabinet.

2.1.12 Current Transformers (Existing)

The current transformers at the neutral end are of dry, synthetic resin-insulated type. All secondary connections are connected to terminal blocks in the terminal cabinet. Earth connections to the housing are provided.
The current transformers are designed to carry continuously a current of 120% of the rated current.
The rated current of the secondary windings is 5 A.
Cores for protection purposes have the following characteristics:

- Accuracy class: 5 F
- Accuracy limit factor: 15.

The burdens of the current transformers are determined according to the technical requirements but are not less than 125% of the overall computed (design) burden of the connected apparatus, including cables.
The current transformers for the generator line terminal ends are provided with the Medium Voltage Switchgear.

2.1.13 Cooling System (Existing)

The temperatures of the ambient air are given in the General Specifications. The limits of temperature rises are taken with respect to cold water-and conform to IEC Publ. 34-1, Clause 16.1.4.
The generators are provided with a closed-circuit ventilation system, with air circulation by means of rotor rotation. Based on a cooling-water temperature of 35°C, the heat exchangers have sufficient capacity to maintain the temperature of the air entering the generator at or below 40°C under the required maximum load conditions. The cooling water pressure at the inlet is not less than 20 mWc. The pressure drop across the cooler does not exceed 0.35 bars.
The surface air/water heat exchangers arranged around the periphery of the stator frame are mounted to facilitate assembly, dismantling, maintenance, and repairs. All necessary water headers are furnished together with the heat exchangers, and all connections between heat exchangers and headers are of the flanged type. An isolation valve is available in the inlet and outlet connections between each heat exchanger and header so that any heat exchanger can be readily removed without interfering with the operation of the remaining heat exchangers. Approved means for draining and releasing entrapped air from all heat exchangers and pipework are available.
The heat exchangers are equipped with a collecting and drainage system for condensed vapor. The materials for the cooling system are selected to avoid corrosion. The heat exchanger cooling pipes are stainless steel.

2.1.14 Thrust Bearing High-pressure Oil System (Existing)

The high-pressure oil system automatically provides lubrication during start and stop of the unit. The A.C. driven pump operates during normal conditions, while the D.C. driven pump operates during possible A.C. power failure. The pump motors are designed for 400 V three-phase A.C. and 110 V D.C., respectively.

2.1.15 Mechanical Brake and Jacking System (Existing)

For the purpose of reducing the run-out time of the units, a compressed air-operated braking system is installed. Air is supplied from the station service air system at 6 to 8 bars.
The brake cylinders also serve as hydraulic jacks for lifting the turbine and generator rotating parts as required for inspection and removal of the thrust bearing. The necessary lifting height is determined as per the OEM instructions in ONM Manual. Provisions are made for the mechanical blocking of the rotor in the fully raised position to permit release of the jacking pressure.
The rotor is provided with a suitable brake ring. The wearing surface of the brake ring is made of segments, readily removable and renewable. The brake ring is rigidly connected to the rotor body and is also suitably designed for lifting the rotating parts of the generator and turbine.

The brakes are automatically applied at 30% of rated speed, activated by separate speed switches for this purpose, during normal shut-down as well as shut-down under fault conditions.
Additionally, each brake cylinder is provided with limit switches for indicating the position of the brakes the moment these leave their rest position. The braking cylinders are supported on the lower spider.
One portable jacking oil pump system (common for the three units) with motor starter, oil hose quick couplings, sump tank, plug for control, and one plug for 400V, 3-phase power is available at the site.
A limit switch is provided for stopping the jacking pump when the maximum rotor lift is reached.

2.1.16 Excitation System (Existing)

The excitation system is of a static type. The excitation power is taken from the generator itself, through a branch-off from the generator terminal busbars and supplied to the excitation rectifier via the excitation transformer. The excitation system is independent of any outside power supply except for short-time external supply for voltage build-up (field flashing).

2.1.17 Measuring, Indication, and Protection (Existing)

All resistance-type temperature detectors (R.T.D.) are of the 3-wire Pt-100 type. These resistance-type temperature detectors (R.T.D.) for stator windings are installed in Six (6) places for each phase as specified in later sections of the document. They are connected to a temperature monitoring unit in the control room for indication, alarm, and tripping.
Speed monitoring and control are provided by a notched wheel on the generator shaft and three nos. of speed sensing devices.

2.1.18 Fire Extinguishing System (Existing)

For firefighting purposes within the generator, a CO2 extinguishing system with high-pressure steel cylinders is provided for each unit. The fire extinguisher comprises a complete system, including pipes, valves, interior wiring of the electrical devices up to a terminal box for external connections.

2.1.19 Two 80/20 Tons EOT Cranes (Existing)

Two 80/20 Tons EOT Cranes manufactured by Konecranes are double girder cranes designed for tandem operation to lift a 120 Ton rotor. With a span more than 50 meters, these cranes feature independent traveling cabs for improved operator visibility. They are engineered to provide efficient and safe lifting operations and are designed in accordance with relevant IEC standards, ensuring optimal performance in heavy-duty applications. The Contractor shall confirm its operation ability prior to the begin of the works for tandem operation of two 80/20 Tons EOT Cranes for the lifting of rotor.

2.1.20 Runaway speed Withstand capability (Existing)

The 56.5 MVA synchronous generators stator windings are engineered and constructed to safely withstand a maximum runaway speed of 600 RPM for a continuous period of 15 minutes without incurring any damage due to mechanical or thermal stresses under such conditions.

2.1.21 Housing & Support (Existing)

The supporting brackets fabricated from structural steel are rigid enough to support and transmit the load to the concrete structure/foundation under worst conditions. A clear space of approximately 1000 mm for movement between the outer body of the air coolers and the generator concrete barrel is maintained with the placement barrel.

2.2 PRINCIPAL PARAMETERS

S. No.	Data	Values	Units
1	Grid frequency	50	Hz
2	Voltage	13.8	kV
3	Rated Current	2364	A
4	Rated rotating speed	300	rpm
5	Number of slots	180	Nos.
6	Type of insulation	Class F	
7	Winding pitch	#1-#11-#19	
8	Number of parallel circuits	1	
9	Number of Conductor per slot	2	
10	No of stator bars required	360	Nos.
11	Generator data	56.5MVA, 20 Pole	
12	Voltage variation	+_5%	
13	Frequency variation	+_2.5%	
14	Rated Power factor	0.85	
15	Rated Excitation Voltage	123	V
16	Rated Excitation Current	1470	A
17	Stator current density at rated output	3.4	A/mm2
18	Rotor current density at rated output	3.1	A/mm2
19	Armature temperature rise	82	°C
20	Field temperature rise	90	°C
21	I2R losses of stator	151	kW
22	Runaway speed	600	Rpm
23	Rotor Air gap (min/max)	18 to 29.4	mm
24	Neutral Point	Transformer Grounding	
25	Cooling Method	Radial ventilation air cooling type	

3. SPECIFIC SPECIFICATIONS

3.1 SYNCHRONOUS GENERATOR

The Kaligandaki 'A' hydropower station is home to three units of 56.5 MVA synchronous generators. These 3-phase synchronous generators are of the salient pole rotor type, and it is directly coupled to FRANCIS turbine. The generator is entirely enclosed and designed in a vertical salient-pole configuration, utilizing air as the primary coolant and water as the secondary coolant.

The stator windings of the generators are meticulously engineered to operate within temperature limits across the entire load range, up to the maximum continuous rating. This ensures they function optimally within the specified frequency and voltage variations. Additionally, the stator windings bars/coils comply with the stringent IEC Standards, reflecting the high-quality standards maintained in their construction.

The synchronous generators feature a combined thrust and guide bearing above the rotor and a second guide bearing below the rotor, providing stable and efficient operation. The main characteristics of the 56.5 MVA synchronous generator are tailored to meet the specific requirements of the turbines.

3.2 SPECIFIC TECHNICAL DETAILS FOR STATOR ASSEMBLY

This task encompasses the comprehensive provision of labor, tools, equipment, materials, and all necessary performance of work required for the successful dismantling, design, engineering, manufacturing, quality assurance, quality control, shop assembly, shop testing, insurance, delivery at site, storage, preservation, installation, testing, and commissioning of new complete stator assemblies. This includes the entire stator windings and instrumentation for the vertical shaft synchronous generator, rated at 56.5 MVA, Generation Voltage 13.8 kV, Power Factor 0.85, Frequency 50 Hz, and Rated Speed 300 rpm. The task also includes a ten (10) years of spare parts support guarantee and assurance of trouble-free and safe operation of the installation.

Bidders/Manufacturers are required to visit the plant before submitting their bids to fully understand the scope of work and the site conditions.

Bidders/Manufacturers must ensure all aspects of the scope of work are covered and comply with the highest standards of quality and safety. This detailed scope of work aims to facilitate the seamless and efficient execution of the project at the Kaligandaki 'A' Hydropower Station:

3.2.1 Detailed Scope of Work of Contractor

3.2.1.1 Supply, Delivery, Installation and Testing

Supply of three (3) and installation/testing of two (2) sets of new stator assembly comprising Roebel type Half bar design type stator winding for 180 slots with two (2) stator bars/coils per slot, with required tests conducted by the contractor (Manufacturer) at the premises of Manufacturer as per the Quality Assurance Plan (QAP).

- The supplied complete stator winding shall be installed into the existing generator pits after dismantling the existing stator assembly, with testing to be performed as per QAP.
- All the consumables' items required for the complete stator re-winding for two (2) sets of new stator windings shall be supplied by the contractor as mentioned in the Technical Requirements or BOQ.

- Installation and testing of two (2) sets of stator windings, including the bus circuit ring, with the essential test of stator winding for the supplied unit conducted as per QAP.
- Supply and installation of two (2) sets of all necessary instrumentation including temperature detectors (Pt100 RTD) for online monitoring of temperatures of stator core/windings, with Three (3) RTDs as spare in each phase and a minimum of Nine (9) spare RTDs in total.
- Supply of two (2) sets of all insulating and consumable materials required for the assembly of the complete stator assembly.
- Protection equipment/field devices, including CT along with the required connections with grounding of the star point through the existing Neutral Grounding Resistor (NGR) shall be retained.
- All stator disassembly and erection tools/instruments for two (2) Units shall be arranged on a returnable basis by the contractor, including specific electrical testing kits/equipment required for testing of newly wound stators.
- Inspection and testing of the equipment shall be performed as per the Quality Assurance Plan (QAP).

Any other item(s) or works not mentioned specifically but necessary for the satisfactory commissioning of Generators shall also be provided/arranged by the Contractor.

3.2.1.2 Procedure for Disassembly and Assembly

The existing synchronous generator components related to the stator, such as generator covering plates, stator covers, stator supports, and stator bars/coils, pipes and instrumentations shall be dismantled and stator bars/coils removed from the generator pit and transported to the KGA store (Main store, near the power station) from the Powerhouse complex. The dismantled rotor/pole, shall be placed at an appropriate location safely, ensuring moisture free storage of Rotor Windings.

The scope of work shall include the dismantling and withdrawal of either required nos. of rotor poles or the entire rotor along with the generator shaft, followed by their placement at the designated service bay, in accordance with the strict guidelines and applicability recommended by OEM Toshiba Co. Ltd. Two different methodologies that can be adopted by Contractor to create space required for executing required works in Generators are as follows:

Methodology 1-Dismantling of Poles to create space for required Works:

The dismantling of the existing field poles, as required, out of the total 20 poles (excluding the two end poles) along with associated parts shall be carried out by the Contractor under the supervision of NEA representatives during the stator winding replacement works. Additionally, the upper bracket shall be removed by the Contractor (as per site requirements) to ensure sufficient space for erection activities. NEA will provide EOT crane of 80/20T capacity at Kaligandaki 'A' Powerhouse for handling and erection works. The other stator barrel components, including the existing stator frame and stator core, shall remain intact during the stator winding replacement process. The existing Neutral Grounding Resistor (NGR) for the stator winding's star point shall be retained as it is. All electrical connections related to instrumentation, including stator winding RTDs in the generator instrumentation

terminal box with proper identification and marking, shall be within the Contractor's scope of work.

Methodology 2- Dismantling of entire Rotor to create space for required Works:
Existing rotor along with the generator shaft and other components shall be dismantled and removed from the generator pit to create space for assembly of stator bars/coils for 56.5 MVA synchronous generator stator winding. The dismantled rotor shall be placed and kept at an appropriate location in the Service Bay of the Powerhouse, ensuring sufficient space for erection works.

Alternatively, at the contractor's own risk, they may propose and implement an alternative methodology (apart from aforementioned methodologies) based on their technical expertise, to accomplish the same task. The new methodology, if proposed, shall be subject to approval by NEA before implementation.

3.2.1.2.1 Installation, Testing and Commissioning Methodology

The Contractor shall submit a detailed Installation, Testing and Commissioning methodology (plan) to be adopted for accomplishing required works, which shall be reviewed and approved by NEA prior to the commencement of work. The final execution shall strictly adhere to the approved methodology.

The Contractor in their Quality Assurance Plan (QAP) shall include the detailed plan regarding following particulars.

1. Manufacturing Process
2. Approved vendors for winding materials (copper conductors, insulation, varnish, etc.).
3. Stator winding design and material specifications.
4. Transportation & Handling of Stator Bars/Coils
5. Storage of newly supplied coils at site
6. Workmanship standards (compliance with IEC 60034, IEEE Std. 43, etc.).
7. Detailed work schedule, including quality assurance measures for each stage of work.
    - Dismantling and Assembly Methodology for Stator Winding
    - Storage of dismantled coils at appropriate location
    - Electrical Connections and Temperature Monitoring
8. Testing and inspection protocols.
    - Test Plan at Factory Premises of Manufacturer
    - Test Plan at Site (Dry and Wet Test) before commissioning
    - Reassembly and Alignment of Generator, Shaft, Bearings etc. as per requirement
    - Rotor Balancing, if required
9. Organizational structure for execution (as per the manpower requirements specified in this document).
10. Roles and responsibilities of Managers, Engineers, winding specialists, supervisors, and inspectors (as per the manpower requirements specified in this document).
11. List of approved materials (e.g., Class F insulation, epoxy resins, etc.).
12. Winding process controls (tensioning, impregnation, curing, etc.).

13. Testing equipment (HV tester, partial discharge (PD) measurement, insulation resistance (IR) measurement, etc.).
14. Compliance with IEC 60034 and IEEE standards.
15. Factory and field-testing approach (as per the inspection and test section of this document).
16. List of tests (as per the inspection and test section of this document).
17. Commissioning procedures (as per the commissioning test requirements section of this document).

The quality assurance plan ensures that all tests are conducted as specified in the Testing Requirements section of this bid document, with clearly defined roles for performing, witnessing, and verifying each test. It establishes responsibilities and approval protocols to maintain consistency, accuracy, and compliance with industry standards, ensuring reliable and verifiable results throughout the testing process.

3.3 GENERATOR CAPABILITIES or PERFORMANCE GUARANTEE

The Bidder/Manufacturer shall guarantee and state the following particulars on the generators for after Rehabilitation/Rewinding of the Stator of the 56.5 MVA Synchronous Generator of Kaligandaki 'A' Hydropower Station:

3.3.1 Capacity

The generator capacity not less than 56.5 MVA shall be guaranteed and stated in the Bid Document.

3.3.2 Load Loss

Loss of the newly wound stator winding shall be guaranteed at loads of at 56.5 MVA (100% load), at 41.25 MVA (75% load) and at 27.5 MVA (50% load) of rated output of the generator, at the rated frequency, rated voltage, rated power factor of 85% and unity power factor respectively.

Stator winding losses shall be corrected to 75 ℃. The losses to be considered in the efficiency calculations shall be in accordance with IEC 34-2 and 34-2A (Methods for determining losses and efficiency of rotating electrical machinery from tests for stator windings only).

3.3.3 Temperature Rise:

The stators shall be designed to deliver continuous rated power of 56.5 MVA at a power factor of 0.85 over a voltage range of 90% to 110% and a frequency range of 95% to 103% without exceeding the maximum permissible temperatures.

3.3.4 Short Circuit Withstand Capability:

The stators shall be capable of withstanding a three-phase short circuit at the generator terminals while operating at a maximum power output and rated voltage as per the existing system actual site conditions.

The stators shall be designed to withstand occasional excess current equal to 1.5 times the rated current for a duration not less than 15 seconds each time.

3.3.5 Waveform and Poly-Phase Symmetry:

The e.m.f waveform between the generator terminals on open circuit is practically sinusoidal, with instantaneous values deviating no more than 5% from the peak value of the fundamental wave (50 Hz). The generator's poly-phase voltage system is practically symmetrical, with negative and zero sequence components not exceeding 5% of the positive sequence component.

Measures must be taken to eliminate harmonic voltages that could cause inductive interference or resonance in the transmission system. Total Harmonic Distortion (THD) does not exceed 5% as per IEC 60034-1.

3.3.6 Stator Winding Design:

Stator assemblies must align with the existing Power Capability & Characteristic Curves. The design should allow continuous operation at rated output without exceeding temperature rise limits at 40°C ambient temperature, with one air-water cooler out of service and a 15% reduction in cooler capacity due to internal or external deposits.

3.3.7 Stator Bars/Coils Design:

Epoxy resin-rich mica-mat tape shall be applied throughout the entire length of the half-turn coil with half-lapping and then the coils should be dried in a tank in Vacuum condition and cured under properly controlled temperature and pressure or equivalent with Class-F grade (as per IEC standard) of insulations to meet the existing stator winding requirements. The Stator bars/coils are mainly of four types (Top, Bottom, Terminal Top and Terminal Bottom) and dimensional data available or measured are as per these technical specifications. Each bottom Bars/Coils have the brazed plates for connection ease. The copper conductors are Single Glass Fiber covered rectangular copper wire (SGF) or Polyester Enameled rectangular copper wire (PEW) insulated or equivalent type having (19×2=38) smaller strips/conductors per Top Stator Bars/Coils and having (15×2=30) smaller strips/conductors per Bottom Stator Bars/Coils having total Stator Bars/Coils dimensions as (52.5-52.8×15.5-15.6) mm for conducting layer and 2.6 mm for insulation layer.

Requirements for Top Bars/Coils:

Description	**Item**	**Specific Value**
Conductor smaller strips (mm)	Size (Thickness)	2.5+-0.05
	Size (Width)	7.5+-0.10
	Size (Thickness)	Min 0.05
	Size (Width)	Min 0.05
Overall Dimension (mm)	Size (Thickness)	Max 2.71
	Size (Width)	Max 7.71
Stator Bars/Coils	Nos. of total conductors/strips	19×2=38
Stator Bars/Coils	Outer insulation thickness	2.6 mm

Requirements for Bottom Bars/Coils:

	Item	Specific Value
Conductor smaller strips (mm)	Size (Thickness)	3.2+-0.07
	Size (Width)	7.5+-0.10

Film Thickness (mm)	Size (Thickness)	Min 0.05
	Size (Width)	Min 0.05
Overall Dimension (mm)	Size (Thickness)	Max 3.41
	Size (Width)	Max 7.71
Stator Bars/Coils	Nos. of total conductors/strips	15×2=30
Stator Bars/Coils	Outer insulation thickness	2.6 mm

Requirements for Bars/Coils Insulation and Accessories Composition:

S. No.	Item	Materials
1	Slot Wedge	Glass fiber reinforced polyester material
2	Tapered Key	Glass fiber reinforced polyester material
3	Radial Spring	Moldable Epoxy Glass Cloth Laminated (Wave formed)
4	Spacer	Moldable Epoxy Glass Cloth Laminated (Wave formed)
5	Strand Insulation	Glass fiber polyester resin baked
6	Corona Shielding	Conductive Glass Taping in Slot Portion, Semiconducting silicon carbide Glass Taping on end portion.
7	Resistance Temperature Detector	Resistance Temperature Detector with Glass fiber reinforced polyester materials
8	Main Insulation	Epoxy Resin-rich Mica-mat tape is applied throughout the entire length of the Half-Turn Coil with Half-Lapping. Then, the coils are dried in a tank in vacuum condition and cured under properly controlled temperature and pressure.
9	Slot Side Spacer	Semiconductive Epoxy Glass Cloth and its Thickness to be selected to make coils tight in the slot
10	Filler	Epoxy Resin Compound
11	Liner	Epoxy Glass Cloth

3.3.8 Quality Assurance:

The contractor must comply with the quality assurance and testing requirements specified in the QAP.

3.4 TECHNICAL DATA SHEET/ TECHNICAL SPECIFICATIONS

(It is mandatory for all the bidder to fill the following data sheet)

3.4.1 56.5 MVA Synchronous Generator (All BOQ Items):

The 56.5 MVA Synchronous Generator installed in the powerhouse of the Kaligandaki 'A' Hydropower station is as in previous section and as per technical data sheet below:

S. No.	Description	Unit	NEA Requirements	Bidders' Offer	Remarks
1	Main Data				
1.1	Rated Output	MVA	56.5		
1.2	Rated Power Factor		0.85		
1.3	Rated Voltage	kV	13.8		
1.4	Rated Current	A	2364		
1.5	Rated Frequency	Hz	50		
1.6	Compliance of new Winding with Rated Speed of 300 rpm	Yes/No	Yes		
1.7	Compliance of new Winding with Runaway Speed of 600 rpm	Yes/No	Yes		
1.8	Compliance with Flywheel effect of 1700 t-m2	Yes/No	Yes		
1.9	Short Circuit Ratio	p.u.	More than 0.95		
2	Stator Winding Load Losses				
2.1	Load Loss at 56.5 MVA (100% load)	kW	Approx. 390		
2.2	Load Loss at 41.25 MVA (75% load)	kW	To be filled by contractor		
2.3	Load Loss at 27.5 MVA (50% load)	kW	To be filled by contractor		
3	Stator Winding average temperature rise from ambient temperature at site conditions with existing cooler	°C	82		
4	Electrical Performances				
4.1	Stator Coil Resistance (at 75°C)	Ohm/Phase	0.009		
4.2	Unsaturated direct axis synchronous reactance, Xd	p.u.	1.1±15%		

S. No.	Description	Unit	NEA Requirements	Bidders' Offer	Remarks
4.3	Negative Phase Sequence Reactance, X2	p.u.	0.22		
4.4	Zero Sequence Reatance, X0	p.u.	0.13		
4.5	Unsaturated quardature axis synchronous reactance, Xq	p.u.	0.67		
4.6	Quardature axis sub-transient reactance, Xq"	p.u.	0.24		
4.7	Saturated direct axis transient reactance, X'd	p.u.	0.22±30%		
4.8	Saturated direct axis subtransient reactances, X"d,	p.u.	0.20±30%		
5	Irregularities of Waveform Total Harmonic Distortion, THD	%	Approx. 1.5		
6	Main Insulation of Stator Bars/Coils		Epoxy Resin-rich Mica-mat tape type dried in vacuum condition and cured under controlled temperature and pressure or equivalent		
6	Stator Bars/Coils (Top)				
6.1	Number of stacked Coils strips (N)	Nos.	19*2=38		
6.2	Width of smaller conductor/strips (w)	mm	2.5		
6.3	Thickness of smaller conductor/strips (t)	mm	7.5-8		
6.4	Length of smaller conductor/strips (l)	mm	Calculated		
6.5	Total width of Top Stator Bars/Coils without Insulation (Woi)	mm	48		
6.6	Total width of Top Stator Bars/Coils with Insulation (Wi)	Mm	55-60		
6.7	Total thickness of Top Stator Bars/Coils without Insulation (Toi)	Mm	15.5-16		

S. No.	Description	Unit	NEA Requirements	Bidders' Offer	Remarks
6.8	Total thickness of Top Stator Coils with Insulation (Ti)	Mm	20-22		
6.9	Total Strength for each conductor strip	Mpa	Max 254.9		
6.10	Total Stator Top Bars/Coils for Series	No. S	174		
6.11	Dimension of Top Bars/Coils for Series	(l*b)mm	1956*802		
6.12	Weight of Top Bars/Coils for Series	Kg	Approx. 17.6		
6.13	Total Stator Top Bars/Coils for Jumper	No. S	6		
6.14	Dimension of Top Bars/Coils for Jumper	(l*b)mm	2196*802		
6.15	Weight of Top Bars/Coils for Jumper	Kg	Approx. 19.1		
7	Stator Bars/Coils (Bottom)				
7.1	Number of stacked Coils strips (N)	Nos.	15*2=30		
7.2	Width of smaller conductor/strips (w)	Mm	3.2		
7.3	Thickness of smaller conductor/strips (t)	Mm	7.5-8		
7.4	Length of smaller conductor/strips (l)	Mm	Calculated		
7.5	Total width of Top Stator Bars/Coils without Insulation (Woi)	Mm	50		
7.6	Total width of Top Stator Bars/Coils with Insulation (Wi)	Mm	60-65		
7.7	Total thickness of Top Stator Bars/Coils without Insulation (Toi)	Mm	15.5-16		
7.8	Total thickness of Top Stator Coils with Insulation (Ti)	Mm	20-22		
7.9	Total Strength for each conductor strips	Mpa	Max 254.9		
7.10	Total Stator Bottom Bars/Coils for Series	No. S	174		
7.11	Dimension of Bottom Bars/Coils for Series	(l*b)mm	1956*829		

S. No.	Description	Unit	NEA Requirements	Bidders' Offer	Remarks
7.12	Weight of Bottom Bars/Coils for Series	Kg	Approx. 19.8		
7.13	Total Stator Bottom Bars/Coils for Jumper	No. s	6		
7.14	Dimension of Bottom Bars/Coils for Jumper	(l*b)mm	2196*829		
7.15	Weight of Bottom Bars/Coils for Jumper	Kg	Approx. 20.3		
7.16	Bottom Brazing Copper Plate Dimension	(l*b)mm	145*75		
10	Other Compliance Requirements				
10.1	Type of insulation		Class F		
10.2	Winding pitch		#1-#11-#19		
10.3	Number of parallel circuits		1		
10.4	Number of Conductor per slot		2		
10.5	No of stator bars required		360		
10.6	Compliance with Voltage variation of +_5%	Yes/No	Yes		
10.7	Compliance with Frequency variation+_2.5%	Yes/No	Yes		
10.8	Compliance with Transformer Grounding type Neutral Point earthing	Yes/No	Yes		
10.9	Compliance with Radial ventilation air cooling type of stator cooling	Yes/No	Yes		

3.5 DOCUMENTATION (DRAWINGS, CALCULATIONS & REPORTS)

- The Contractor shall submit Four (4) sets of Design drawings and Four (4) sets of As-Built drawings documents for each unit, including the stator bars/coils cross section, stator winding layout, Circuit Rings, RTD connections, etc.
- Within 45 days of contract commencement, prior to manufacturing, the Contractor shall submit design calculations for review/acceptance, covering at least the following:
    - Maximum stresses/loads during normal operation, two-phase and three-phase short-circuit conditions, single-phase earth fault at maximum output, 180-degree and 120-degree out-of-phase synchronization
    - Calculation of guaranteed stator losses.
    - Capability curve for the generator.
    - Calculation to prove short-circuit withstand capability.
    - Short circuit withstand calculations
    - Temperature rise calculations at existing cooler conditions
    - No-load harmonics analysis

3.5.1 Design Calculation and Drawings:

The Contractor shall submit four (4) hard copies and one (1) soft copy (PDF format) of the initial design, detailed calculations, and technical drawings for the rewinding of the 56.5 MVA synchronous generator to the Nepal Electricity Authority (NEA) for review and approval, ensuring compliance with NEA standards and IEC guidelines; the Contractor shall incorporate any revisions requested by NEA and resubmit the documents until final approval is granted, after which NEA will issue a Design/Drawing Approval Certificate, which must be obtained before commencing work, with all associated costs for revisions borne by the Contractor in case of non-compliance.

3.5.2 As-Built Drawings:

The Contractor shall submit four (4) hard copies and one (1) electronic copy (in PDF format) of the final as-built drawings for the stator windings and all associated components of the 56.5 MVA synchronous generator to the Nepal Electricity Authority (NEA) for review and approval; these drawings shall accurately reflect the completed work and comply with NEA standards, approved design specifications, and IEC guidelines. Upon verification, NEA officials shall issue an Acceptance Certificate, which the Contractor must obtain as proof of compliance before final project closure, with any necessary revisions or resubmissions to be completed by the Contractor at no additional cost to NEA.

3.5.3 Commissioning and Testing Reports:

The Contractor shall submit four (4) hard copies and one (1) electronic copy (in PDF format) of complete testing and commissioning reports, including all specified site-based tests and any additional tests performed at site, to the Nepal Electricity Authority (NEA) for review and approval. These reports shall contain certified test results demonstrating compliance with technical specifications, NEA standards, and IEC requirements. Upon satisfactory verification, NEA officials shall issue the Final Acceptance Certificate, which shall constitute official approval of the works. The warranty period for each unit shall commence from the date of issuance of this Final Acceptance Certificate by NEA, with the Contractor remaining fully responsible for all rectification of defects during the warranty period as specified elsewhere in this contract.

3.6 CERTIFICATION REQUIREMENTS

The Contractor shall obtain the following certifications from Nepal Electricity Authority (NEA) at specified project milestones:

3.6.1 Design Approval Certificate

The Contractor shall submit complete design calculations and technical drawings to NEA for review and obtain the Design Approval Certificate prior to commencing any rewinding work, with all design revisions to be completed at the Contractor's expense until final NEA approval is granted.

3.6.2 Delivery Acceptance Certificate

The Contractor shall deliver all materials to the specified project site store as per bid requirements and obtain the Delivery Acceptance Certificate from NEA after successful verification of quantities, inspection of goods, and submission of all required documentation including packing lists and test certificates.

3.6.3 Unit Acceptance Certificate

For each rewound unit, the Contractor shall conduct a 24-hour continuous operational test under NEA supervision and obtain the Unit Acceptance Certificate upon demonstrating compliance with all specified performance parameters and submitting complete test reports.

3.6.4 Final Acceptance Certificate

The Contractor shall obtain the Final Acceptance Certificate from NEA after successful 30-day continuous operation of both units with new stator windings, submission of complete commissioning reports, and resolution of all outstanding work items as specified in the contract documents.

3.7 BUILDING FACILITY AT SITE

NEA shall provide building facilities within the Powerhouse Colony for the Contractor's personnel during the 56.5 MVA generator rewinding work. The Contractor shall bear all costs for food, amenities, and electricity consumed during occupancy, and maintain the premises properly before vacating upon work completion.

4. PROJECT EXECUTION

4.1 EXPERT DEPLOYMENT & SITE STUDY

The Contractor shall depute Generator experts from the Manufacturer within 20 days of contract commencement.

The experts shall conduct a detailed assessment of the Generator, winding condition, insulation, cooling arrangements and other existing details before commencing work and submit site assessment report within 10 days from signing of site visit MoM.

4.1.1 Personnel Requirements

Bidders should provide the names along with their Cirriculm Vitae (C.V.) of suitably qualified personnel to meet the specified requirements for each of the positions listed below. The data on their experience should be supplied separately for each candidate.

No.	Required Min Nos.	Position	Academic Qualification	Total Work Experience [Years]	Experience in Similar Works [years]
1.	1	Project Manager	Master's Degree in Relevant Field	10 years	≥ 7 years' experience in Hydro Generators/Motors or related projects
2.	2	Project Engineer (Electrical)	Bachelor's Degree in Electrical Engineering	7 years	≥ 5 years' experience in Hydro Generators/Motors or related projects
3.	2	Project Engineer (Mechanical)	Bachelor's Degree in Mechanical Engineering	7 years	≥ 5 years' experience in Hydro Generators/Motors or related projects
4.	1	Stator Bars/Coils or Stator Winding Design Engineer	Bachelor's Degree in Mechanical/Electrical Engineering	7 years	≥ 5 years' experience in Hydro Generators/Motors or related projects

5.	1	Testing and Commissioning Engineer	Bachelor's Degree in Electrical Engineering	7 years	≥ 5 years' experience in Hydro Generators/Motors or related projects
6.	1	Safety/Quality Assurance Engineer	Bachelor's Degree in Engineering	7 years	≥ 5 years' experience in Hydro Generators/Motors or related projects
7.	2	Site Supervisor	Diploma's Degree in Engineering	5 years	≥ 3 years' experience in Hydro Generators/Motors or related projects
8.	4	Brazing Personnel	Techical Level Education for Brazing Works	5 years	≥ 3 years' experience in Hydro Generators/Motors or related projects

9.	1	Instrumentation/PID/Generator Personnel	Techical Level Education for Brazing Works	5 years	≥ 3 years' experience in Hydro Generators/Motors or related projects

4.1.2 Equipment Requirements

The Bidder shall provide adequate information to demonstrate clearly that it has the capability to meet the requirements for the key equipment listed below. A separate Form shall be prepared for each item of equipment listed, or for alternative equipment proposed by the Bidder. The Bidder shall provide all the information requested below, to the extent possible.

For the equipment under Bidder's ownership or Equipment to be leased/hired

No.	Equipment Type and Characteristics	Total Nos. of Equipment under Bidder's Ownership	No. of Equipment engaged/proposed for ongoing/committed contracts	Nos. of Equipment proposed for this contract
1.	5000 volts Insulation Tester	2	1	
2.	ELCID Testing Kit for Stator Core	1	1	
3.	A.C. H.V. Test Kit (upto 30 kV)	1	1	
4.	D.C. H.V. Test Kit (Upto 30 kV)	1	1	
5.	Winding Resistance Measuring Kit	1	1	
6.	Slot Tightness Checking Instrument	1	1	
7.	Inductive Heating Brazing Equipment	1	1	
8.	Tan delta measurement kit	1	1	

4.2 QUALITY ASSURANCE PROGRAM SUBMISSION

The Contractor shall submit a Quality Assurance Plan (QAP) within 60 days of contract commencement. The QAP shall include, but not be limited to, the following:

1) Manufacturing Process
2) Approved vendors for winding materials (copper conductors, insulation, varnish, etc.).
3) Stator winding design and material specifications.
4) Transportation & Handling of Stator Bars/Coils
5) Storage of newly supplied coils at site
6) Workmanship standards (compliance with IEC 60034, IEEE Std. 43, etc.).
7) Detailed work schedule, including quality assurance measures for each stage of work.
    a. Dismantling and Assembly Methodology for Stator Winding
    b. Storage of dismantled coils at appropriate location
    c. Electrical Connections and Temperature Monitoring
8) Testing and inspection protocols.
    a. Test Plan at Factory Premises of Manufacturer
    b. Test Plan at Site (Dry and Wet Test) before commissioning
    c. Reassembly and Alignment of Generator, Shaft, Bearings etc. as per requirement
    d. Rotor Balancing, if required
9) Organizational structure for execution (as per the manpower requirements specified in this document).
10) Roles and responsibilities of Managers, Engineers, winding specialists, supervisors, and inspectors (as per the manpower requirements specified in this document).
11) List of approved materials (e.g., Class F insulation, epoxy resins, etc.).
12) Winding process controls (tensioning, impregnation, curing, etc.).
13) Testing equipment (HV tester, partial discharge (PD) measurement, insulation resistance (IR) measurement, etc.).
14) Compliance with IEC 60034 and IEEE standards.
15) Factory and field-testing approach (as per the inspection and test section of this document).
16) List of tests (as per the inspection and test section of this document).
17) Commissioning procedures (as per the commissioning test requirements section of this document).

The quality assurance plan ensures that all tests are conducted as specified in the Testing Requirements section of this bid document, with clearly defined roles for performing, witnessing, and verifying each test. It establishes responsibilities and approval protocols to maintain consistency, accuracy, and compliance with industry standards, ensuring reliable and verifiable results throughout the testing process.

4.3 STATOR BARS/COILS ASSEMBLY

The Scope of work for the Installation, Testing and commissioning of entire stator windings include the proper dismantling of the existing stator windings of 56.5 MVA synchronous generator and retrofitting's of purchased Stator Bars/Coils sets after the work order from the purchaser.

4.3.1 General Description

1. Rating of Generator

GEN: TAKS - 20P - 56.5MVA - 300RPM - RCT - 13.8kV - 2364A - 50HZ-0.85PF

2. Main Characteristics

1) Winding connection Y×1
2) Number of slots 180 slots
3) Bar pitch #1-#11-#19
4) Stator core length 1100mm
5) Stator slot dimension 21.2mm×134mm (After stacking)

4.3.2 Work Process

The installation, testing, and commissioning of the stator windings shall be aligned with the outlined workflow in conjunction with all applicable technical specifications. Following the site inspection, the contractor is required to submit a comprehensive, stepwise work plan detailing all activities related to the complete disassembly and assembly of the stator to ensure methodical execution and adherence to quality and safety standards in the Quality Assurance Plan (QAP) and Proposed Methodology of erection.

1. Inspection, Cleaning, Testing and Varnish Treatment of Stator Core
2. Connecting Binding Ring
3. Inserting of Bottom Bars and Side Spacers
4. High Potential Test of Bottom Bars
5. Installing of Spacers between Bottom Bar End Portions and Binding Ring
6. Installing of Spacers between Bottom Bar End Portions
7. Binding of Bottom Bar End Portions
8. Installing of R.T.D.s and Spacers
9. Inserting of Top Bars and Side Spacers
10. High Potential Test of Top Bars
11. High Potential Test of R.T.D.s
12. Driving of Stator Bar Wedges
13. Installing of Spacers between Top Bar End Portions
14. Brazing of Lower Series Portions
15. Insulation of Lower Series Portions
16. Scaffolding
17. Brazing of Upper Series Portions
18. Insulation of Upper Series Portions
19. Assembling of Circuit Rings
20. Assembling of Bar Stoppers
21. Inspection and Cleaning
22. Drying-out of Stator Inside
23. Varnish Treatment
24. Final High Potential Test
25. Other Necessary works as per site requirements.

4.3.3 Assembling of Stator Bars in slots

The stator winding assembly for the 56.5 MVA synchronous generator begins with thorough preparation of the stator core. The core and slots are carefully inspected and treated with insulating material to ensure proper electrical insulation and protection. The binding ring is

then secured using resin-impregnated or equivalent materials to provide structural support for the winding system. Bottom bars are methodically installed with appropriate spacers and wedges, followed by comprehensive electrical testing to verify insulation integrity before proceeding further.

The installation process continues with the placement of temperature monitoring devices at designated locations throughout the stator. Top bars are then inserted in the opposite rotational direction from the bottom bars, maintaining proper alignment and spacing. After installation, the entire winding assembly undergoes rigorous high-voltage testing and other electrical testing to confirm electrical integrity. Wedges are precisely driven into position to secure the winding assembly, with special attention given to maintaining proper tightness without damaging the insulation.

Critical electrical connections are made using specialized brazing techniques that prevent heat damage to adjacent components. These connections are then insulated with carefully prepared compounds to ensure long-term reliability. The circuit rings are assembled and secured with proper mechanical fasteners and electrical connections, completing the main winding structure. Bar stoppers are installed at regular intervals to provide additional mechanical stability to the winding system.

Following assembly, the completed stator winding undergoes a comprehensive quality inspection and cleaning process. A controlled drying procedure is then implemented to remove any moisture from the insulation system. The final steps include applying protective varnish coatings and performing conclusive electrical tests to verify the winding meets all performance specifications before being put into service. This systematic approach ensures the stator winding assembly meets the highest standards of quality and reliability for generator operation.

4.3.4 Placement of RTD's in Stator Winding

The slots to be installed with the R.T.D. are follows.
#17(D1), #44(D2), #71(D3), #107(D4), #134(D5), #161(D6) are used for U Phase, #20(D7), #47(D8), #74(D9), #110(D10), #137(D11), #164(D12) for V Phase and #23(D13), #50(D14), #77(D15), #113(D16), #140(D17), #167(D18) for W Phase.
Contractor shall install the R.T.D.s into the proper slots for stator bar temperature measurement.

4.3.5 Brazing Works for Stator Winding Installation

The successful contractor shall independently manage the induction heating brazing system for both lower and upper series portions. The process begins with preparing and connecting the brazing transformer, carbon electrode, water-cooled cable, and brazing clamp, along with ensuring proper cooling water supply. The top and bottom copper connecting plates are arranged with brazing filler, while ground wall insulation edges are wrapped in heat-proof sheets to prevent water absorption. The carbon electrode is set on the copper plate, and current is applied to heat it uniformly to sufficient tempreature. Once heated, the brazing rod is applied to form a secure joint.
After brazing, the joint is inspected for voids, cracks, or lumps, with rework required if defects are found. The brazed area is then cleaned with a wire brush, and the heat-proof sheet is

removed. Crucially, the brazing process must avoid excessive heat transfer to prevent damage to insulation or adjacent components. The final joint must meet quality standards as per Quality Assurance Plan (QAP) before proceeding with further testing and commissioning.

4.4 TESTING OF STATOR AND GENERATOR

4.4.1 General

The principal requirements of generator testing procedure and conditions are governed by Section 1.4 and IEEE/JIS standards.

4.4.2 Material Tests

All materials are tested and/or test results verified by signed test reports, according to requirements stated in the General Specifications inclusive of Resistance to deterioration test, Resistance to softening test, Resistance to reagent test, Resistance to oil test, Resistance to heat shock test, Elongation in 250 mm (%) test, Tensile Strength (Mpa) test, Edge wise bending test, Dielectric breakdown voltage test, solvent proof test etc. for the copper conductor strips.

4.4.3 Tests to be Performed by the Bidder/Contractor or Subcontractors

4.4.3.1 Stator Core Low Energy Stator Core Flux Test (ElCid):

This test assesses the condition of the stator core insulation. The contractor is required to perform the test twice in two phases: before and after installation of the new stator windings. If required, any additional test as mentioned in relevant IEC/IEEE standards should be done in the actual site existing stator core.

4.4.3.2 Workshop/Test Lab Acceptance Tests (Type tests)

Before any part of the manufacturing, the tests specified in are accepted by the Manufacturer and verified by Purchaser. The following tests are performed:

a. Resistance of Windings (Cold)
    i. DC resistance measurement of stator and field windings (IEC 60034-4).
b. Duty Type
    i. Confirm duty cycle (e.g., S1 for continuous operation).
c. Functional Evaluation of Insulation Systems
    i. Insulation system validation (IEC 60034-18).
d. Impulse Voltage Withstand Test
    i. Lightning Impulse (Up): 60 kV peak.
    ii. Steep-Front Impulse (Up'): 39 kV peak (interturn insulation).
e. Power-Frequency Withstand Test
    i. 28.6 kV rms for 1 min (if impulse test unavailable).

4.4.3.3 Routine Tests (Mandatory for every machine part manufactured at the factory)

Before the beginning of mass production during manufacturing process, the tests specified in FAT are accepted by the Purchaser. The following tests are performed:

f. Material Inspection:
    i. Visual and Dimensional Inspection of Raw Materials (Copper, Insulation)
    ii. Dimensional test shall be followed by Resistance to deterioration test, Resistance to softening test, Resistance to reagent test, Resistance to oil test, Resistance to heat shock test, Elongation in 250 mm (%) test, Tensile Strength (Mpa) test, Edge wise bending test, Dielectric breakdown voltage test, solvent proof test etc.

iii. Copper Conductor Type Test:

g. Test Report of Copper Contents in Conductor (i.e., conductivity of the conductor at 20°C in %)

h. Manufacturing Process Inspection:
   i. Inspection of Winding Formation, Insulation Application, and Curing Processes.

i. Insulation Resistance (IR) & Polarization Index (PI)
   i. Measure IR at 1 min (Ri1) and 10 min (Ri10); PI = Ri10/Ri1 (IEC 60034-27-4).

j. Partial Discharge (PD) Test (if applicable)
   i. Verify PD levels at rated voltage (IEC 60034-27-3).

k. Dielectric Dissipation Factor (tan δ)
   i. Measure tan δ tip-up ($\Delta\tan\delta \leq 5\times10^{-3}$) (IEC 60034-27-2).

l. Withstand Voltage Test (IEC 60034-15)
   i. AC Hi-Pot Test: 28.6 kV (1,000 V + 2× rated voltage) for 1 min.

m. Visual Inspection of Finished Bars/Coils:
   i. Final Visual Inspection for Surface Defects and Mechanical Integrity.

n. DC Overvoltage Test of Bars/Coils:
   i. This test is another method for evaluating insulation strength in case AC is unavailable.

o. Winding Resistance Measurement of Bars/Coils:
   i. This measurement verifies the electrical continuity and condition of the winding.

p. Thermal Cycling test - IEEE 1310-20/ IEEE 1310-201212:
   i. The coils/bars temperature rise from 40°C to 150° C and cooling from 150°C to 40°C for required number cycles as per IEEE standards.

q. Voltage Endurance Test - IEEE 1043-1996 & Pass/Fail Criteria IEEE - 1553:
   i. The Voltage endurance test shall be performed on the coils/bars with table below as per IEEE standards for 13.8 kV. The number of specimens for voltage endurance test shall be at least two bars/coils, but not more than 1% of the total bars/coils in the winding.

Test requirements for copper conductor of each top bars/coils

S. No.	Properties	Value
1	Pinhole	Max 3
2	Bending	No crack
3	Breakdown Voltage for smaller Strips (V)	Min 1000 V
4	Resistance to Deterioration	No crack
5	Resistance to Softening	No Short Circuit
6	Resistance to Reagent	No Swelling
7	Resistance to Oil	No crack
8	Resistance to Heat Shock	No crack
9	Elongation in 250 mm (%)	Min 34.0
10	Tensile Strength (Mpa)	Max 254.9
11	Conductivity @20°C (%)	Min 100

Test requirements for copper conductor of each bottom bars/coils

S. No.	Properties	Value
1	Pinhole	Max 3
2	Pinhole	Max 3
3	Bending	No crack
4	Breakdown Voltage for smaller Strips (V)	Min 1000 V
5	Resistance to Deterioration	No crack
6	Resistance to Softening	No Short Circuit
7	Resistance to Reagent	No Swelling
8	Resistance to Oil	No crack
9	Resistance to Heat Shock	No crack
10	Elongation in 250 mm (%)	Min 34.0
11	Tensile Strength (Mpa)	Max 254.9
12	Conductivity @20°C (%)	Min 100

4.4.3.4 Site Tests Before Start-Up (Pre-commissioning checks after installation)

Before the generator is put into normal operation, tests are carried out by the Contractor in the presence of the Purchaser and/or the Engineer to determine whether the Stator Windings meet the guarantees and other technical requirements set forth in the Contract Documents. The site tests include but are not necessarily restricted to those specified hereunder:

r. No-Load Losses at Unity Power Factor
    i. Iron losses and excitation current verification (IEC 60034-2).
s. Direction of Rotation
    i. Confirm correct rotation direction.
t. Phase Sequence
    i. Verify phase sequence (R-Y-B or equivalent).
u. No-Load Characteristic (Open-Circuit Test)
    i. Plot excitation current vs. terminal voltage at rated speed (IEC 60034-4).
v. Short-Circuit Characteristic
    i. Plot excitation current vs. stator current under short-circuit.
w. Sudden Three-Phase Short-Circuit Test
    i. Verify transient response (peak current ≤ 21× rated current).
x. Total Harmonic Distortion (THD) Test
    i. Ensure THD ≤ 5% at rated voltage (IEC 60034-1, 9.11).
y. Form and Symmetry of Voltage and Currents
    i. Negative sequence current tolerance (IEC 60034-1: $I2/IN \leq 0.08$, $(I2/IN)^2 \cdot t \leq 20$).
z. No-Load Saturation Test
    i. Measure iron losses (Pfe) and friction/windage losses (Pfw) (IEC 60034-2-1).
aa. Sustained Short-Circuit Test
    i. Determine short-circuit losses (Pk) (IEC 60034-2-1).
bb. Zero Power-Factor Test
    i. Measure over-excitation losses (IEC 60034-2-1).
cc. Negative Sequence Current Withstand
    i. Verify unbalanced load handling (IEC 60034-1, 7.2.3).
dd. Dielectric Dissipation Factor (tan δ)

i. Measure tan δ tip-up ($\Delta\tan\delta \leq 5\times10^{-3}$) (IEC 60034-27-2) (Repeated at site).

ee. Insulation Resistance (IR) & Polarization Index (PI)
   i. Measure IR at 1 min (Ri1) and 10 min (Ri10); PI = Ri10/Ri1 (IEC 60034-27-4) (Repeated at site).

ff. Partial Discharge (PD) Test (if applicable)
   i. Verify PD levels at rated voltage (IEC 60034-27-3) (Repeated at site).

gg. Shaft Voltage & Bearing Current Measurement
   i. Check for harmful circulating currents.

hh. Air gap measurement
   i. Assure the required air gap in the generator
   ii. at minimum twelve (12) equidistant points of the generator (should be within +-1% tolerance)

ii. Resistance measurements of generator windings
   i. stator and rotor winding resistance are measured to ensure the electrical properties.

jj. On-Site Withstand Voltage Test
   i. 80% of factory test voltage (e.g., 22.9 kV rms for AC Hi-Pot).

kk. Auxiliaries and Accessories Testing
   i. Individual tests for LV/HV auxiliaries (test voltage ≥ 2,000 V for LV).

ll. Deformation checks of generator stator

mm. Clearance checks of main bearings

nn. Center alignment checks of generator with turbine

oo. Insulation Resistance Measurement of Rotor

pp. Field coil voltage balance check

The contractor shall ensure that installation, testing and commissioning of 56.5 MVA Synchronous Generator Stator Bars / Stator Windings shall be carried out under the supervision/consolation of the Generator manufacturers provided manual/procedure. The commissioning report shall be signed by the contractor's representative.

S.No.	Stage of Testing	Electrical Test	Resin Rich, Mica Tape and Vacuum treated Bars
1	**Test on Individual Bars**	Tan delta and capacitance measurement with guard electrodes	The tan delta measurement carried out as per IEC 60034
		Surface Resistance Measurement	Surface resistance measurement shall be carried out on slot portion conducting tape
		Insulation resistance test	IR for 1 minute at specified Voltage
		AC high voltage test	As per IEC 60034
		Insulation resistance test	IR for 1 minute at specified Voltage

2	**Test before stator connection (after bars insertion in wound stator)**	Insulation resistance test	IR at 1 minute and 10 minutes
		AC high voltage test	As per IEC 60034
		Insulation resistance	IR at 1 minute
		RTD's high voltage AC	As per IEC 60034
		RTD's resistance	Record the resistance of all RTD's
3	**Test after stator connection with cables**	Winding resistance	Resistance per phases at room temperature
		Insulation resistance test	IR at 1 minute and 10 minutes.
		AC high voltage test	As per IEC 60034
		Insulation resistance	IR at 1 minute
		Tan delta and capacitance measurement	The tan delta measurement carried out as per IEC 60034
		RTD's resistance	Record the resistance of all RTD's

Test that shall be performed during Pre-commissioning or Dry Test

S.No.	Pre-Commissioning Test (Dry Test)	Remarks
1	Resistance Temperature Detector (R.T.D.s)	Required
2	Dial Thermometer	Not Required
3	Water flow indicator/Oil flow indicator	Not Required
4	Brake and Jack Test as Mechanical Brake	Not Required
5	Current Transformer	Required
6	Space Heater	Not Required
7	Limit Switch for Rotor Protection	Not Required
8	Oil Jack Test	Not Required
9	Shaft Current Transformer	Not Required
10	Winding Resistance Measurement	Required
11	Insulation Resistance Test for Stator and Rotor	Required

4.4.3.5 Site Tests During Commissioning (Final verification under operational conditions)

The following tests are made on the generator only, provided that the above-mentioned tests have verified that the generator characteristics are practically identical with the commissioning report:

qq. Load Rejection Test

i. Verify transient response during sudden load removal.

rr. Phase Sequence (Recheck under load)

ss. Direction of Rotation (Recheck under load)

tt. Partial Discharge (PD) Test

i. Optional, if PD monitoring is installed

uu. Auxiliaries and Accessories

i. Functional tests under actual operating conditions.

vv. Stator Slot Wedge Tightness Inspection: This inspection ensures the mechanical stability of the stator winding.

Test that shall be performed during Commissioning or Wet Test

S.No.	Commissioning Test (Wet Test)	Remarks
1	Initial running test	Required
2	Bearing heat run test	Required
3	Over speed test	Required
4	Three-phase short circuit saturation test	Required
5	No-Load saturation test	Required
6	Vibration measurement	Required
7	Shaft-Voltage test	Required
8	Heat run test	Required

These tests shall be done and matched with the exiting data of NEA after Stator Rewinding. The Purchaser has the right to decide which of the generators is subject to the above tests. If the generator fails to meet the technical requirements as a result of the test, similar tests are carried out on one of the remaining generators free of charge.

4.5 ADDITIONAL REQUIREMENTS

- Perform complete stator windings and generator testing according to IEC 60034 and IEEE standards, including insulation resistance, HV test, winding resistance tests with SAT procedures approved by NEA before execution.
- Conduct on-site training for operation and maintenance and brazing/debrazing operations while overseeing the complete stator winding disassembly, installation, and commissioning process.
- Provide all necessary testing equipment as per the tests mentioned in testing of stator and generator section and submit detailed test reports, as-built drawings, and commissioning documentation upon completion.
- Develop a flexible work schedule based on site conditions and shutdown approvals, ensuring mobilization within 15 days of work order and completion in the shortest possible timeframe minimizing the unit shutdown period.
- Ensure proper brazing quality without insulation damage, perform thorough inspections, rectify any defects, and obtain final approval before project handover.

5. MATERIAL AND PACKING DATA TO BE SUBMITTED BY BIDDER

The bidders have to submit the following data and details during the project execution.

5.1 DETAIL OF THE STATOR BARS OR SPARE PARTS BOX

- Manufacturer's name/country of origin
- Catalogue
- Description of materials used for the spare parts
- Detail of sealing and testing

5.2 MANUFACTURER'S NAME AND TECHNICAL DATA OF THE PROPOSED STATOR BARS

5.3 DRAWING OF THE PROPOSED STATOR BARS INCLUDING ALL ACCESSORIES WITH MAIN DIMENSIONS AND TOLERANCES IN MM.

5.4 PACKING DETAILS

- Packing method (shown by drawing(s), and describe packing materials)
- Number of sets in each package (one)
- Dimensions of each package in cm
- Gross weight of each package in kg
- Net weight of each package in kg
- Number of packages
- Type of storage facility required (indoor/outdoor)

5.5 LABELING

In addition to the Contractor's name, description, and catalog number of contents on the package, the Contractor or Vendor shall affix the Purchaser's name, purchase order number and release number, and destination in a weatherproof manner. Packages for serialized equipment shall have the serial number of the equipment to which it belongs on the label.

Short- or long-term storage requirement before installation shall be provided via a label on the outside of the transportation box of the stator bars/coils. Label shall identify if the spare parts need to be secure via timbers or anchoring before storing.

6. DELIVERY

Delivery shall be Free on board (FOB) destination point, at the designated site location referenced on the Purchase Order Release, and arrival shall be such that unloading can be accomplished during the weekdays of Sunday through Friday, excluding holidays, and the hours of 10:00 A.M. and 5:00 P.M.

Delivery may be made by truck to the specified destination point.

The Purchaser shall be informed one week prior to day of delivery and again 24 hours prior to day of delivery.

To satisfy the requirements of this Specification clause, contact:

Name and Address of the Purchaser: Kaligandaki 'A' Hydropower Station, Beltari, Syangja.
Telephone: 063-403081/063-403084/063-403089
Facsimile Number: 063-403082
Electronic Mail Address: kaligandaki@nea.org.np, kaligandaki144@gmail.com

Failure by the bidder to supply this notice may result in excess time as required by the Purchaser to unload the stator bars/coils shipment. Any and all costs associated with excess time taken to unload due to failure to notify by the bidder will be borne by the bidder.

Note: -

(i) Bidders are strictly advised to complete the TECHNICAL DATA SHEET and submit the detailed catalog that justify the filled data, otherwise the BID shall be treated as NONRESPONSIVE BID.

(ii) The bidder shall correct any deviations from Specifications discovered by the Purchaser during field testing of the stator bars/coils and stator windings. The Contractor shall be responsible for all costs associated with correcting and retesting of stator bars/coils that fail testing under the criteria described above.

(iii) The bidder can refer to IEC 60034-1 to 31 Rotating electrical machines: for performance factory testing and site tastings and IEEE standards.

(iv) The Stator Bars/Coils to be supplied under the scope of this Tender are to be designed in such a way that it can be retrofitted in existing 56.5 MVA Synchronous Generator manufactured and assembled by TOSHIBA JAPAN Co. Ltd. The maximum possible information available have been given, if one feels it is insufficient, one can visit the site & see the installed stator winding and existing stator bars/coils.

(v) The successful Supplier/Bidder will be provided with available stator bars/coils or each type (Top series and Jumper, Bottom Series and Jumper) for accurate measurements, construction details, dimensional check for the sample purpose on the returnable basis.

Purchaser Requirement

The Goods and Related Services shall comply with following Technical Specifications and Standards:

1. Summary of Technical Specifications.

Item No	***Name of Goods or Related Service***	***Technical Specifications and Standards***

2. Detailed Technical Specifications and Standards [whenever necessary].

Drawings

The purpose of drawings is to specify locations, dimensions, materials to be used, stages of manufacturing, and other characteristics of the Goods and Related Services. The Purchaser should prepare such drawings, as needed, and include them in the Procurement Document. Such drawings, as part of the SR, are Contract documents and, therefore, shall be part of the Contract. Similarly, the Purchaser may request the Supplier to provide drawings either with its Bid or for approval during Contract execution.

It is essential that the Purchaser prepares a **List of Drawings** showing all drawings it supplied and issued as part of the Procurement Document.

1. Generator OCC and SCC Curves
2. Generator Capability Curve
3. Generator Assembly Drawing
4. Stator Assembly Drawing
5. Connection Diagram for Stator Winding
6. Lifting of Stator Drawing
7. Rotor Assembly Drawing
8. Rotor Erection Pedestal Drawing
9. Lifting of Rotor Drawing
10. Wiring Diagram of Generator Auxiliaries
11. Arrangement of RTDs for Air Cooler
12. Arrangement of RTDs for Stator Winding
13. Detail Coupling with Speed Signal Generator
14. Detail of Coupling with Turbine Shaft
15. Pipeline Diagram of Generator
16. Air Cooler Piping Assembly
17. Brake Piping
18. Foundation of Generator
19. Field Lead Arrangement Drawing
20. Generator Line and Neutral Leads Arrangement
21. Location of Blockouts and Pipelines Sleeve
22. Cross section of stator coils
23. Stator Core Punching Drawing
24. Outline of Generator
25. Single Line Diagram of Kaligandaki 'A' Hydropower Plant
26. Existing picture of Stator bars

TOSHIBA

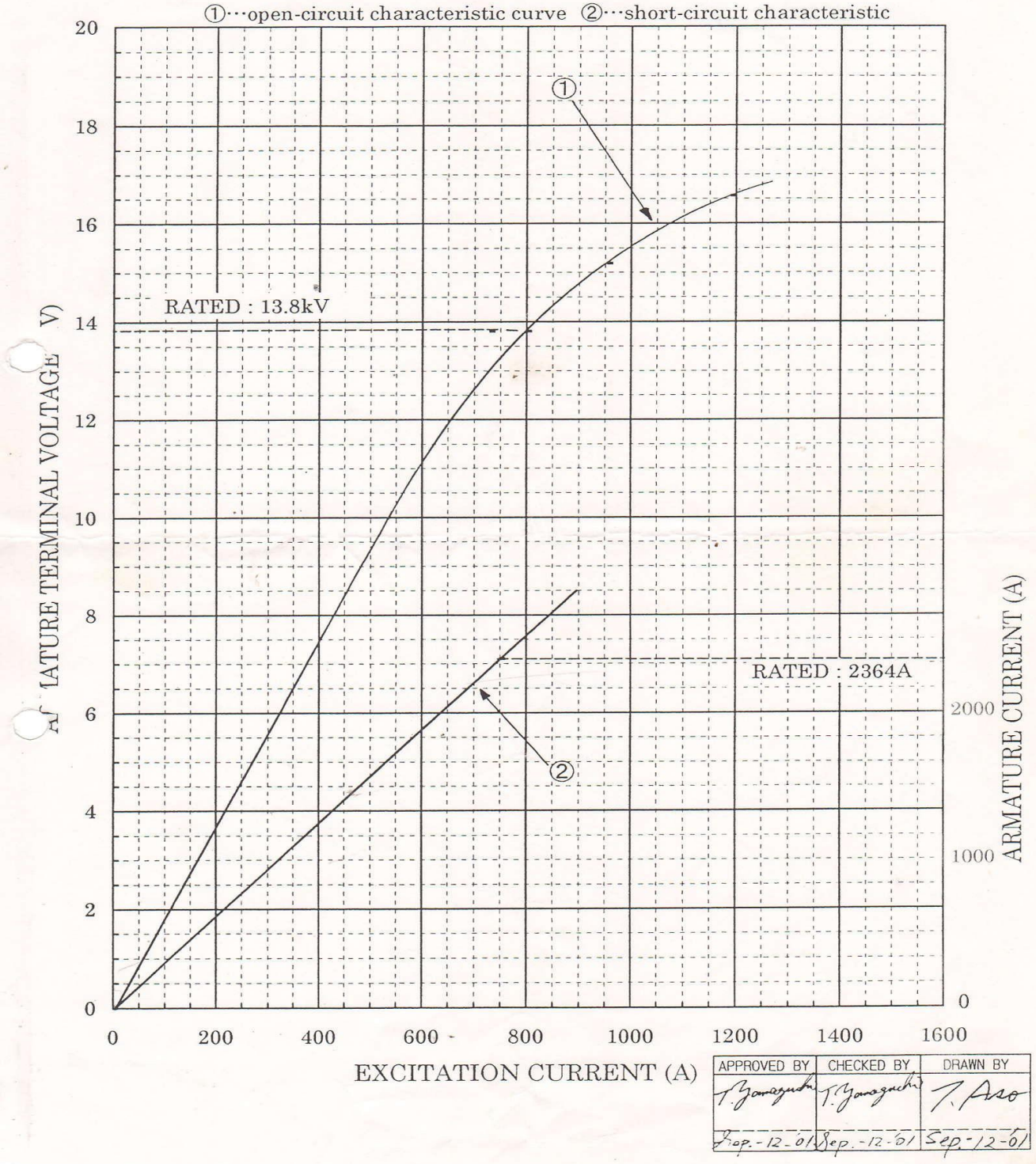
GK-010401-a

NEPAL N.E.A. KALI GANDAKI "A" P.S.

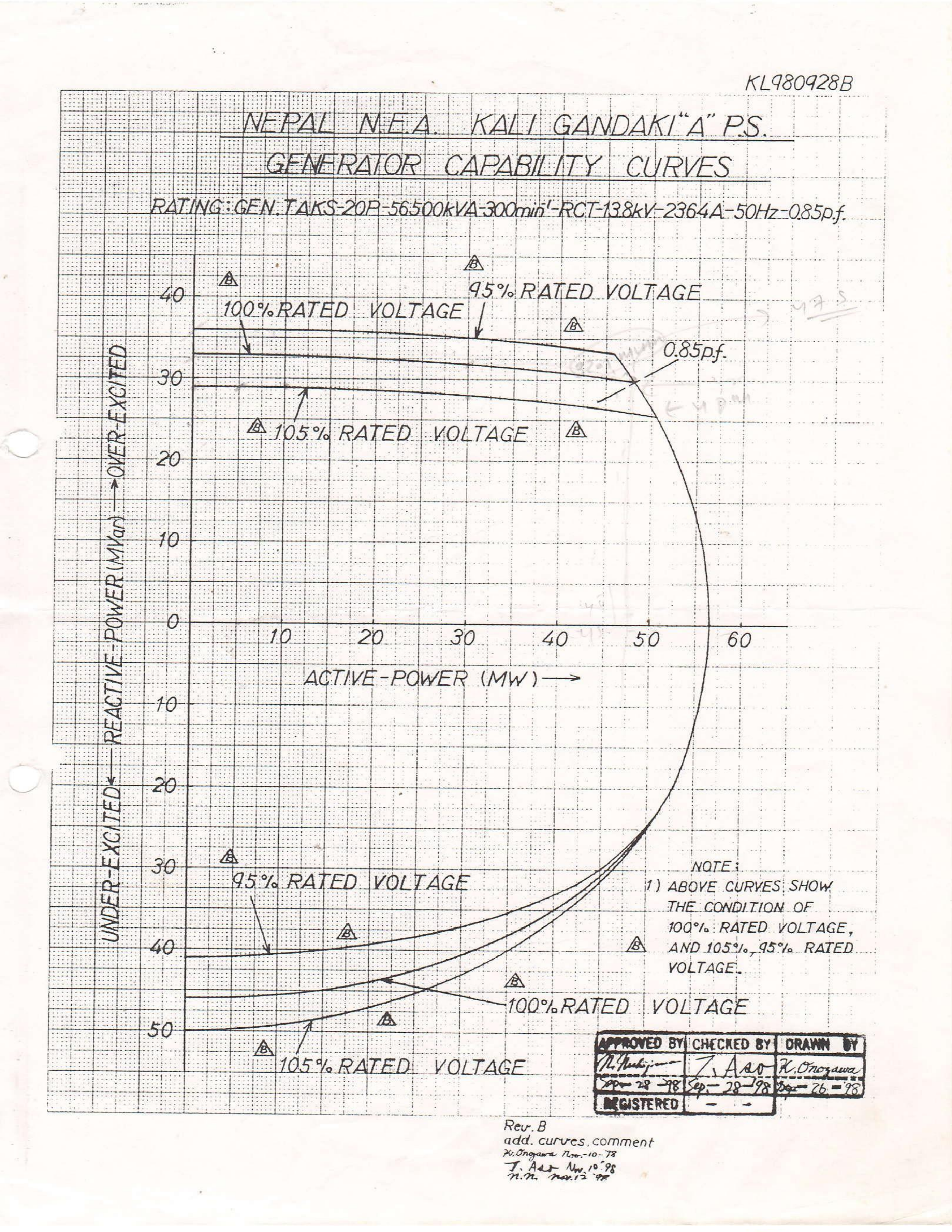
GENERATOR CHARACTERISTIC CURVES

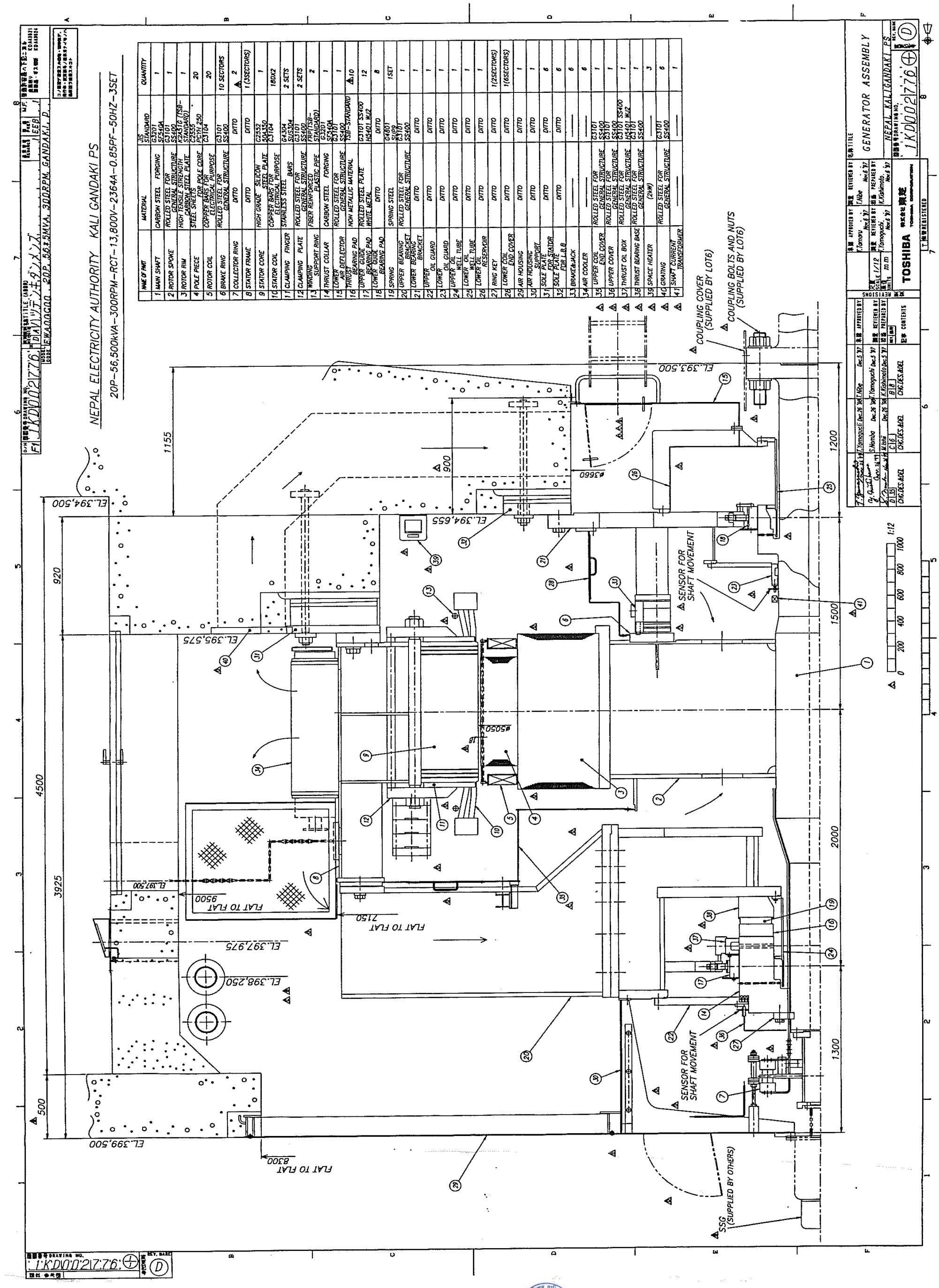
RATING : GEN.TAKS-20P-56.5MVA-300min^{-1}-RCU-13.8kV-2364A-50Hz-0.85pf

①…open-circuit characteristic curve ②…short-circuit characteristic

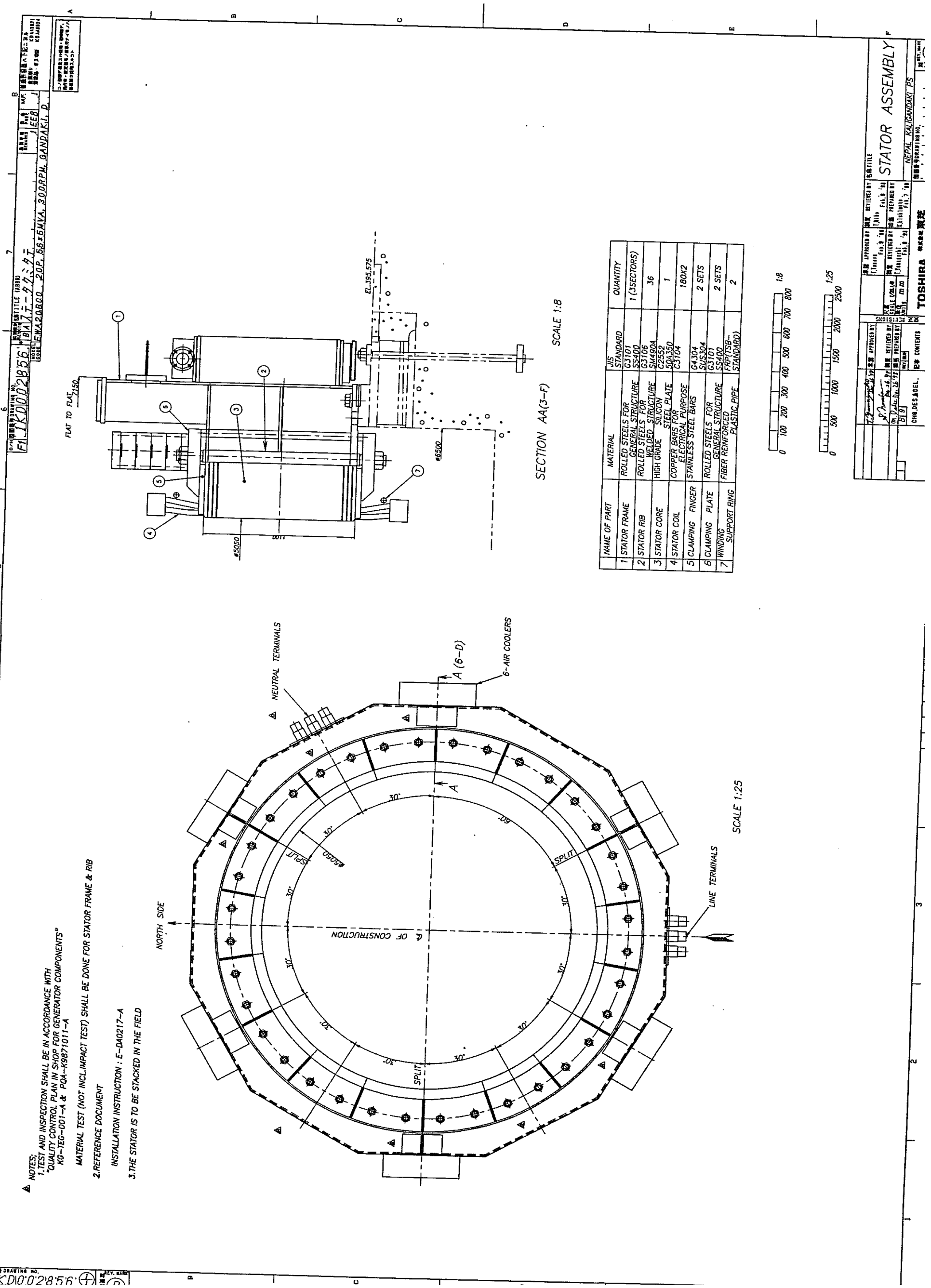


APPROVED BY	CHECKED BY	DRAWN BY
T. Yamaguchi	T. Yamaguchi	T. Aso
Sep.-12-01	Sep.-12-01	Sep.-12-01

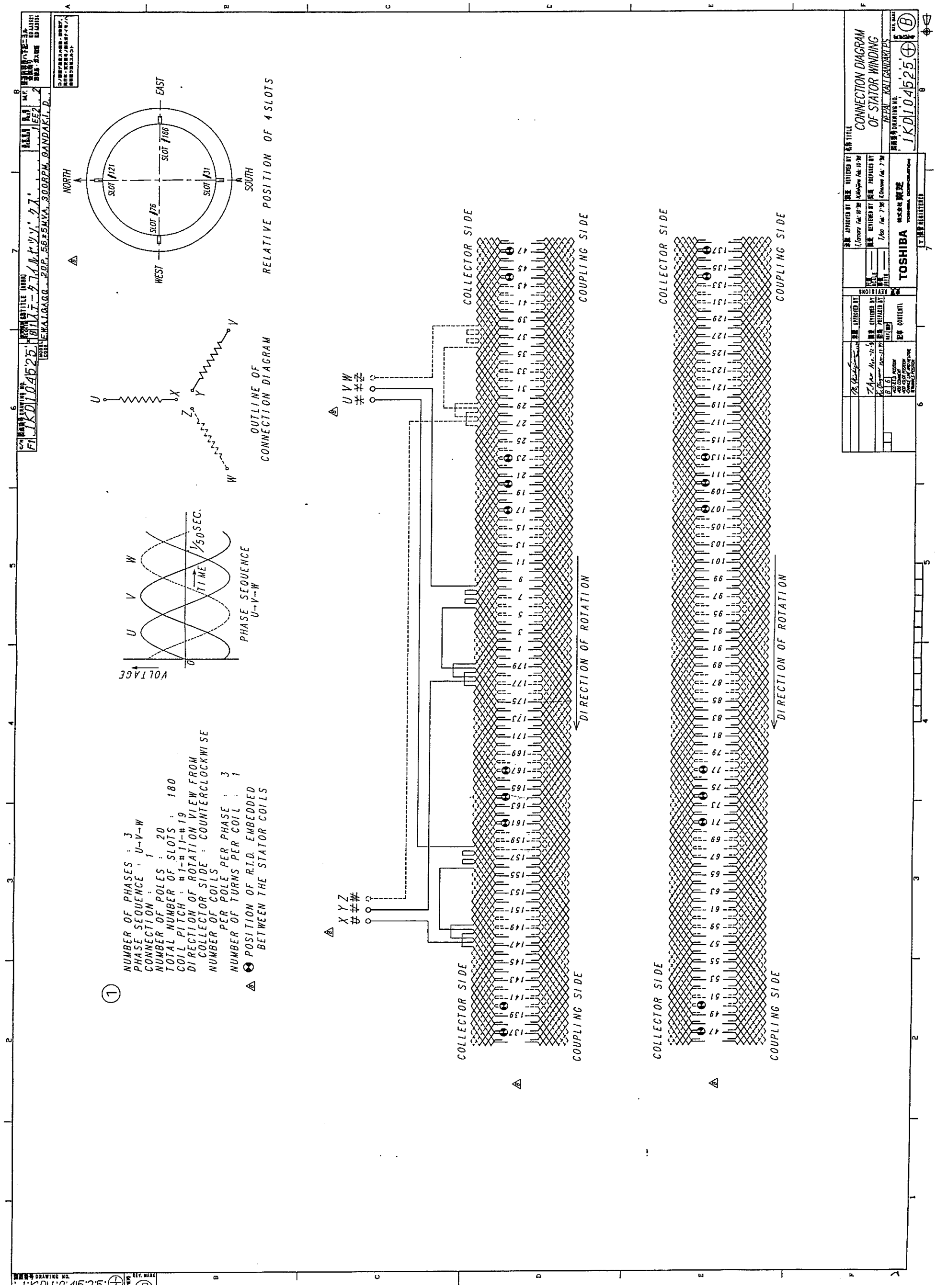

KL980928B
NEPAL N.E.A. KALI GANDAKI "A" P.S.
GENERATOR CAPABILITY CURVES
RATING: GEN. TAKS-20P-56500kVA-300min⁻¹-RCT-13.8kV-2364A-50Hz-0.85p.f.
95% RATED VOLTAGE
100% RATED VOLTAGE
0.85p.f.
105% RATED VOLTAGE
UNDER-EXCITED ← REACTIVE-POWER (MVar) → OVER-EXCITED
ACTIVE-POWER (MW) →
40
30
20
10
0
10
20
30
40
50
60
NOTE:
1) ABOVE CURVES SHOW THE CONDITION OF 100% RATED VOLTAGE, AND 105%, 95% RATED VOLTAGE.
APPROVED BY
CHECKED BY
DRAWN BY
K. Onozawa
Sep. 28 '98
Sep. 26 '98
REGISTERED
Rev. B
add. curves, comment

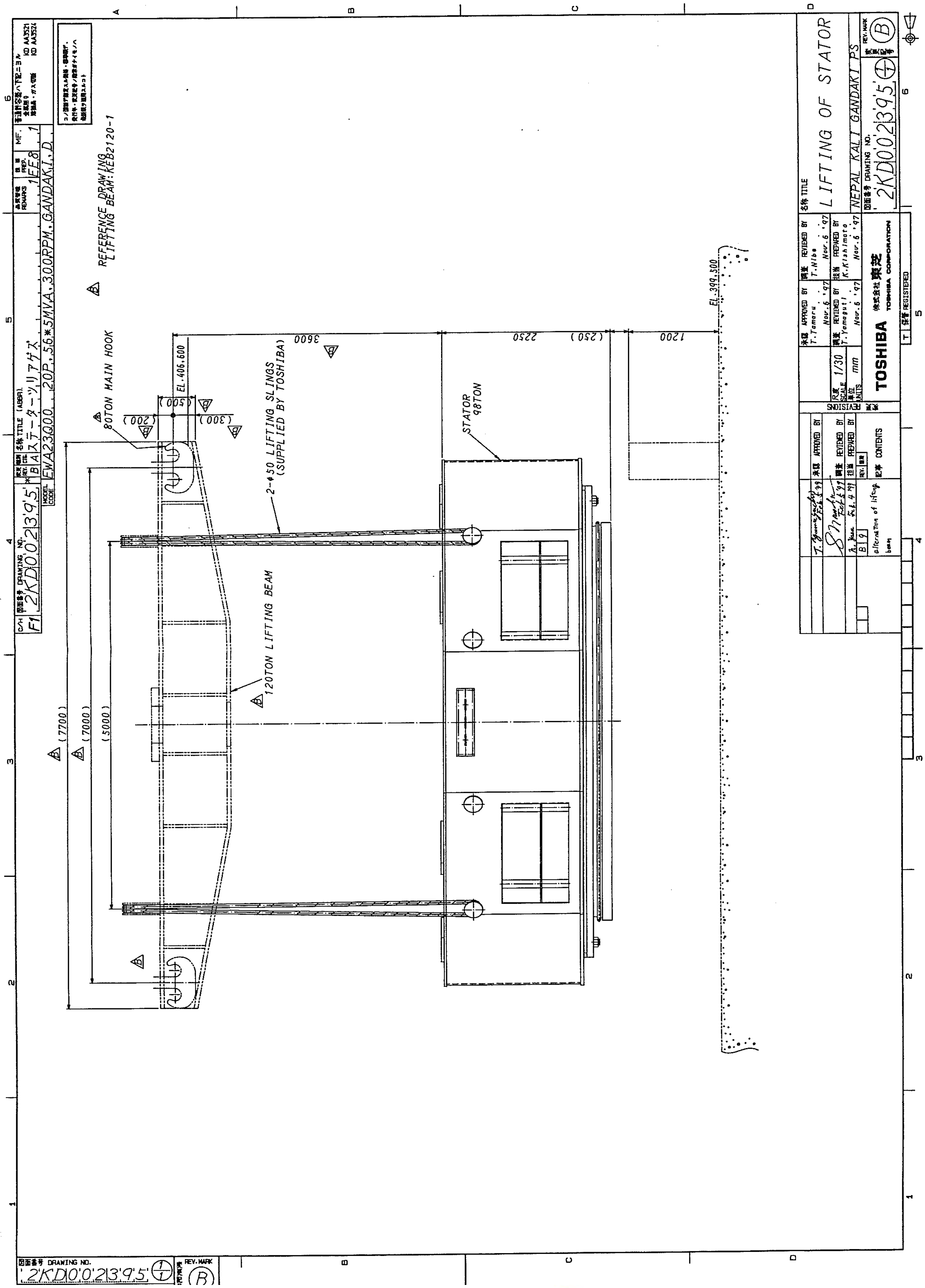


NAME OF PART	MATERIAL	JIS STANDARD	QUANTITY
1 MAIN SHAFT	CARBON STEEL FORGING	G3201 SF540A	1
2 ROTOR SPOKE	ROLLED STEEL FOR GENERAL STRUCTURE	G3101 SS400	1
3 ROTOR RIM	HIGH TENSILE STRENGTH CARBON STEEL PLATE	K2A516 (TSB-STANDARD)	1
4 POLE PIECE	STEEL SHEETS FOR POLE CORE	C2555 FCFH 250	20
5 ROTOR COIL	COPPER BARS FOR ELECTRICAL PURPOSE	C3104	20
6 BRAKE RING	ROLLED STEEL FOR GENERAL STRUCTURE	G3101 SS400	10 SECTORS
7 COLLECTOR RING	DITTO	DITTO	⚠ 2
8 STATOR FRAME	DITTO	DITTO	1 (3SECTORS)
9 STATOR CORE	HIGH GRADE SILICON STEEL PLATE	C2552 35A350	1
10 STATOR COIL	COPPER BARS FOR ELECTRICAL PURPOSE	C3104	180X2
11 CLAMPING FINGER	STAINLESS STEEL BARS	G4304 SUS304	2 SETS
12 CLAMPING PLATE	ROLLED STEEL FOR GENERAL STRUCTURE	G3101 SS400	2 SETS
13 WINDING SUPPORT RING	FIBER REINFORCED PLASTIC PIPE	FRP(TSB-STANDARD) G3202 KD1	2
14 THRUST COLLAR	CARBON STEEL FORGING	S45C G4051	1
15 LOWER AIR DEFLECTOR	ROLLED STEEL FOR GENERAL STRUCTURE	G3101 SS400	1
16 THRUST BEARING PAD	NON METALLIC MATERIAL	TSB-STANDARD	⚠10
17 UPPER GUIDE BEARING PAD	ROLLED STEEL PLATE WHITE METAL	G3101 SS400 H5401 W2	12
18 LOWER GUIDE BEARING PAD	DITTO	DITTO	8
19 SPRING	SPRING STEEL	G4801 SUP9	1SET
20 UPPER BEARING BRACKET	ROLLED STEEL FOR GENERAL STRUCTURE	G3101 SS400	1
21 LOWER BEARING BRACKET	DITTO	DITTO	1
22 UPPER OIL GUARD	DITTO	DITTO	1
23 LOWER OIL GUARD	DITTO	DITTO	1
24 UPPER OIL WELL TUBE	DITTO	DITTO	1
25 LOWER OIL WELL TUBE	DITTO	DITTO	1
26 LOWER OIL RESERVOIR	DITTO	DITTO	1
27 RING KEY	DITTO	DITTO	1(2SECTORS)
28 LOWER COIL END COVER	DITTO	DITTO	1(6SECTORS)
29 AIR HOUSING	DITTO	DITTO	1
30 AIR HOUSING SUPPORT	DITTO	DITTO	1
31 SOLE PLATE FOR STATOR	DITTO	DITTO	6
32 SOLE PLATE FOR L.B.B.	DITTO	DITTO	6
33 BRAKE JACK	———	———	6
34 AIR COOLER	———	———	6
35 UPPER COIL END COVER	ROLLED STEEL FOR GENERAL STRUCTURE	G3101 SS400	1
36 UPPER COVER	ROLLED STEEL FOR GENERAL STRUCTURE	G3101 SS400	1
37 THRUST OIL BOX	ROLLED STEEL FOR GENERAL STRUCTURE	G3101 SS400 H5401 W2	1
38 THRUST BEARING BASE	ROLLED STEEL FOR GENERAL STRUCTURE	G3101 SS400	1
39 SPACE HEATER	(2kW)	———	⚠ 3
40 GRATING	ROLLED STEEL FOR GENERAL STRUCTURE	G3101 SS400	⚠ 6
41 SHAFT CURRENT TRANSFORMER	———	———	⚠ 1



	NAME OF PART	MATERIAL	JIS STANDARD	QUANTITY
1	STATOR FRAME	ROLLED STEELS FOR GENERAL STRUCTURE	G3101 SS400	1 (3SECTORS)
2	STATOR RIB	ROLLED STEELS FOR WELDED STRUCTURE	G3106 SM490A	36
3	STATOR CORE	HIGH GRADE SILICON STEEL PLATE	C2552 50A350	1
4	STATOR COIL	COPPER BARS FOR ELECTRICAL PURPOSE	C3104	180X2
5	CLAMPING FINGER	STAINLESS STEEL BARS	G4304 SUS304	2 SETS
6	CLAMPING PLATE	ROLLED STEELS FOR GENERAL STRUCTURE	G3101 SS400	2 SETS
7	WINDING SUPPORT RING	FIBER REINFORCED PLASTIC PIPE	FRP(TSG-STANDARD)	2

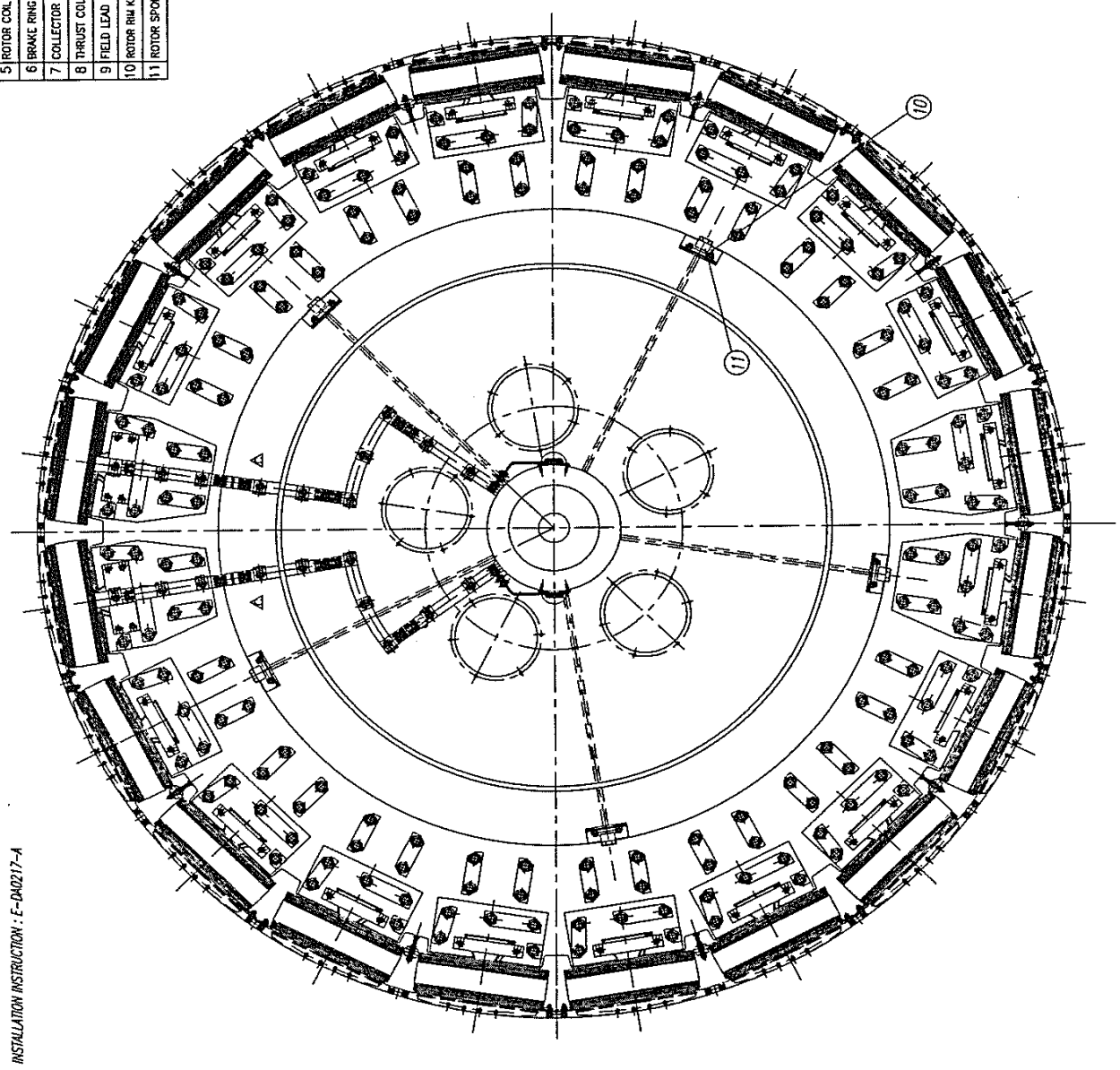

CONNECTION DIAGRAM OF STATOR WINDING
TOSHIBA
NEPAL KALIGANDAKI PS
1KD1045'25'
NORTH
EAST
SOUTH
WEST
SLOT #121
SLOT #166
SLOT #76
SLOT #31
RELATIVE POSITION OF 4 SLOTS
OUTLINE OF CONNECTION DIAGRAM
PHASE SEQUENCE U→V→W
VOLTAGE
TIME
1/50 SEC.
COLLECTOR SIDE
COUPLING SIDE
DIRECTION OF ROTATION
NUMBER OF PHASES : 3
PHASE SEQUENCE : U-V-W
CONNECTION : Y
NUMBER OF POLES : 20
TOTAL NUMBER OF SLOTS : 180
COIL PITCH : #1-#11-#19
DIRECTION OF ROTATION VIEW FROM COLLECTOR SIDE : COUNTERCLOCKWISE
NUMBER OF COILS : 180
PER POLE PER PHASE : 3
NUMBER OF TURNS PER COIL : 1
POSITION OF R.T.D. EMBEDDED BETWEEN THE STATOR COILS


LIFTING OF STATOR
NEPAL KALI GANDAKI PS
DRAWING NO. 2KD002395
REV. MARK B
REFERENCE DRAWING
LIFTING BEAM:KEB2120-1
80TON MAIN HOOK
EL.406,600
EL.399,500
2-φ50 LIFTING SLINGS
(SUPPLIED BY TOSHIBA)
120TON LIFTING BEAM
STATOR
98TON
3600
2250
(250)
1200
(500)
(200)
(300)
(7700)
(7000)
(5000)
EWA23Q00 20P,56*5MVA,300RPM,GANDAKI,D
ステーターツリアゲズ
SCALE 1/30
UNITS mm
T.Tamaru Nov.6 '97
T.Nibe Nov.6 '97
T.Yamaguti Nov.6 '97
K.Kishimoto Nov.6 '97
alternation of lifting beam
TOSHIBA
TOSHIBA CORPORATION

	NAME OF PART	MATERIAL	JIS STANDARD	QUANTITY
1	MAIN SHAFT	CARBON STEEL FORGING	G3201 SF540A	1
2	ROTOR SPOKE	ROLLED STEELS FOR GENERAL STRUCTURE	G3101 SS400	1
3	ROTOR RIM	HIGH TENSILE STRENGTH CARBON STEEL PLATE	K2A516 (NSB-STANDARD)	1 Set
4	POLE PIECE	STEEL SHEETS FOR POLE CORE	G2555 PCYH 250	20
5	ROTOR COIL	COPPER BARS FOR ELECTRICAL PURPOSE	G3104	20
6	BRAKE RING	ROLLED STEELS FOR GENERAL STRUCTURE	G3101 SS400	15 SECTORS
7	COLLECTOR RING	DITTO	DITTO	2
8	THRUST COLLAR	CARBON STEEL FORGING	G3201 SF540A	1
9	FIELD LEAD	COPPER BUS BARS	H3140 C1100	2
10	ROTOR RIM KEY STOPPER	ROLLED STEELS FOR GENERAL STRUCTURE	G3101 SS400	10
11	ROTOR SPOKE KEY BAR	ROLLED STEELS FOR GENERAL STRUCTURE	G3101 SS400	5

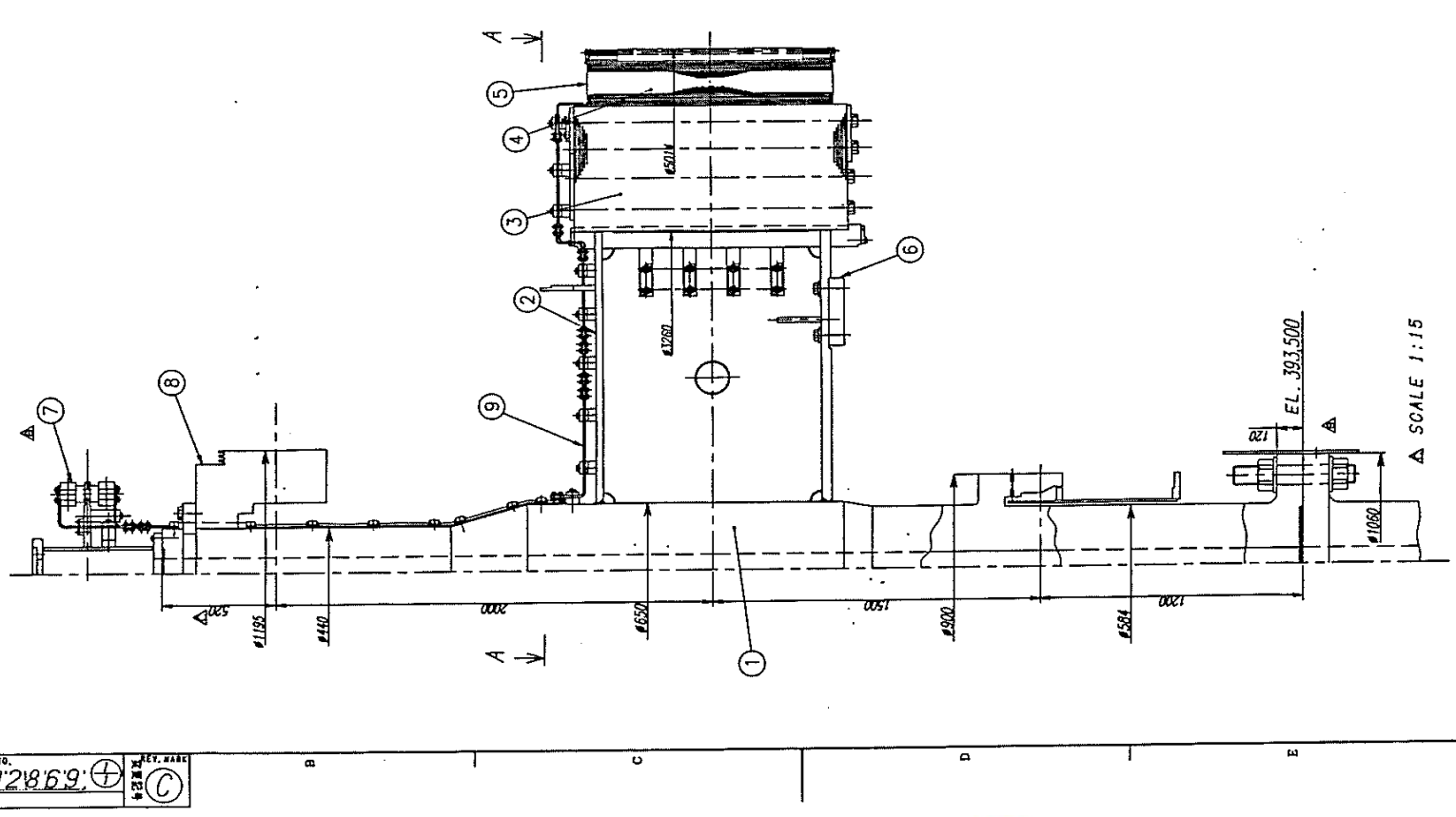
REFERENCE DRAWING

NAME OF PART	DRAWING No.
DETAIL OF COUPLING WITH TURBINE SHAFT	2KD0002414
ASSEMBLY OF THRUST AND UPPER GUIDE BEARING	1KD0002867



△ SECTION AA

SCALE 1:15



NOTES;
1. TEST AND INSPECTION SHALL BE IN ACCORDANCE WITH QUALITY CONTROL PLAN IN SHOP FOR GENERATOR COMPONENTS KG-TEG-001-A & PQA-K9871011-A

MATERIAL TEST (INCL.IMPACT TEST)SHALL BE DONE FOR ROTOR SPOKE

MATERIAL TEST (NOT INCL.IMPACT TEST) SHALL BE DONE FOR MAIN SHAFT,THRUST COLLAR,BRAKE RING

2. REFERENCE DOCUMENT

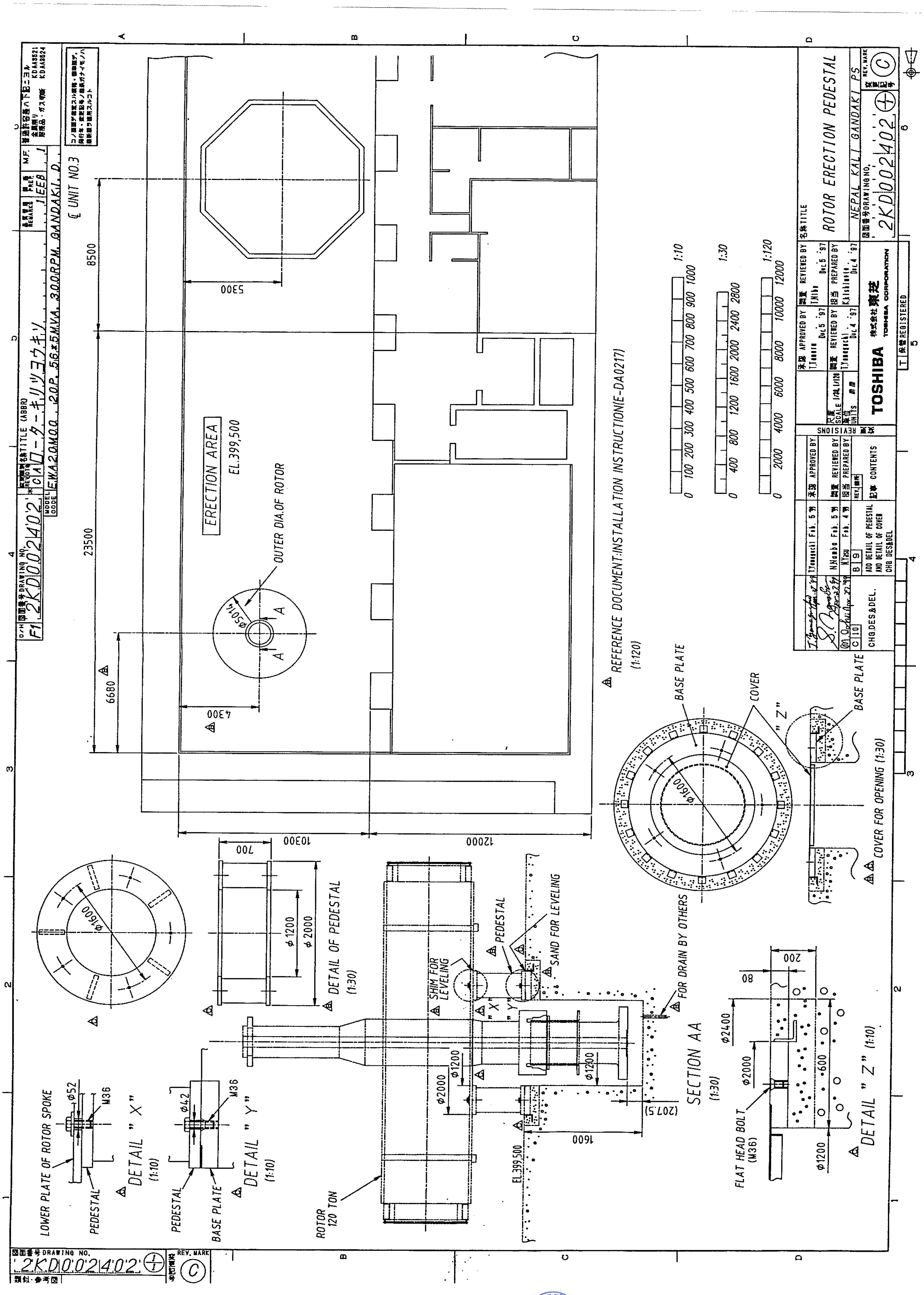
INSTALLATION INSTRUCTION : F-DA0217-A

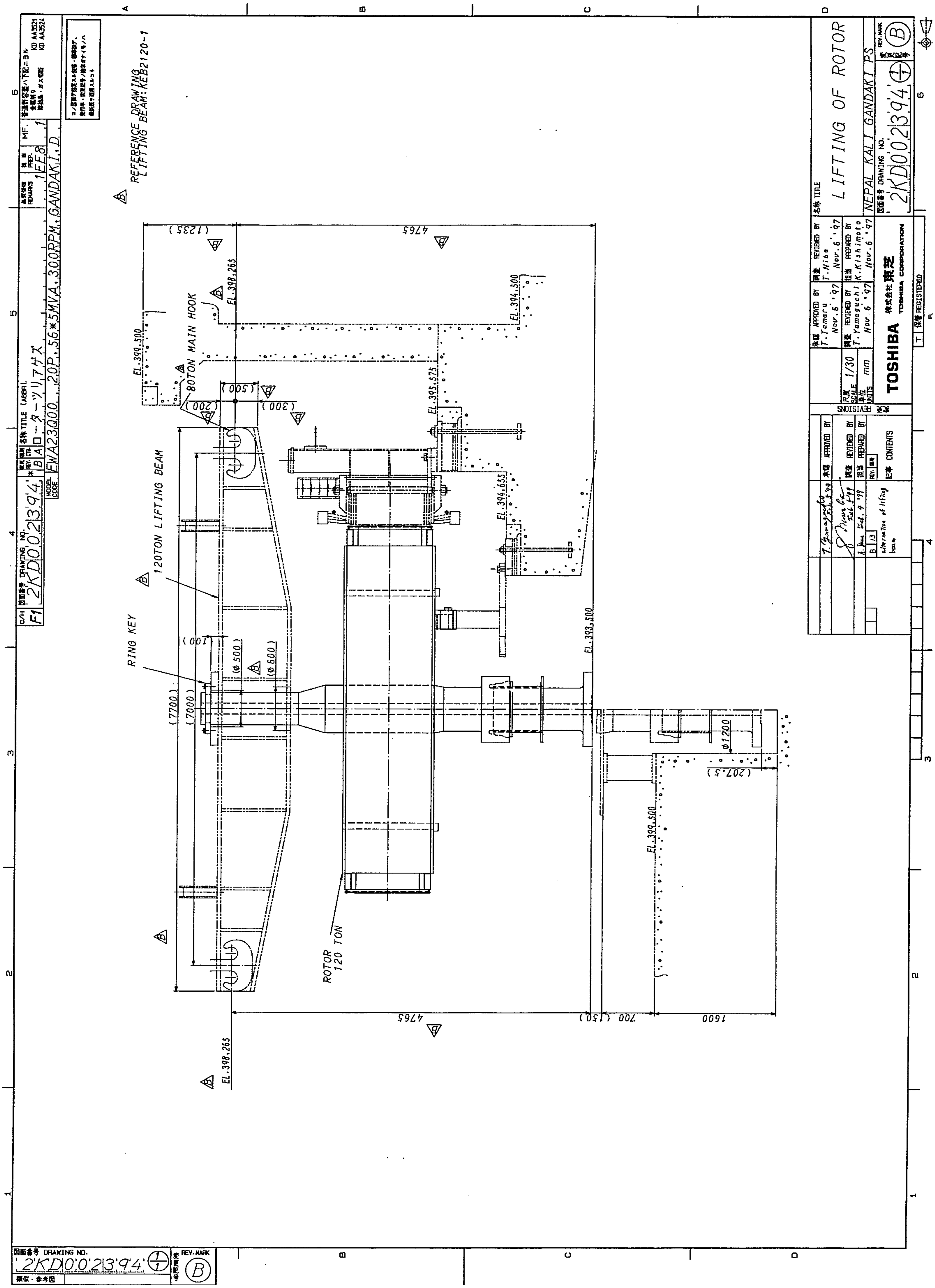
TOSHIBA

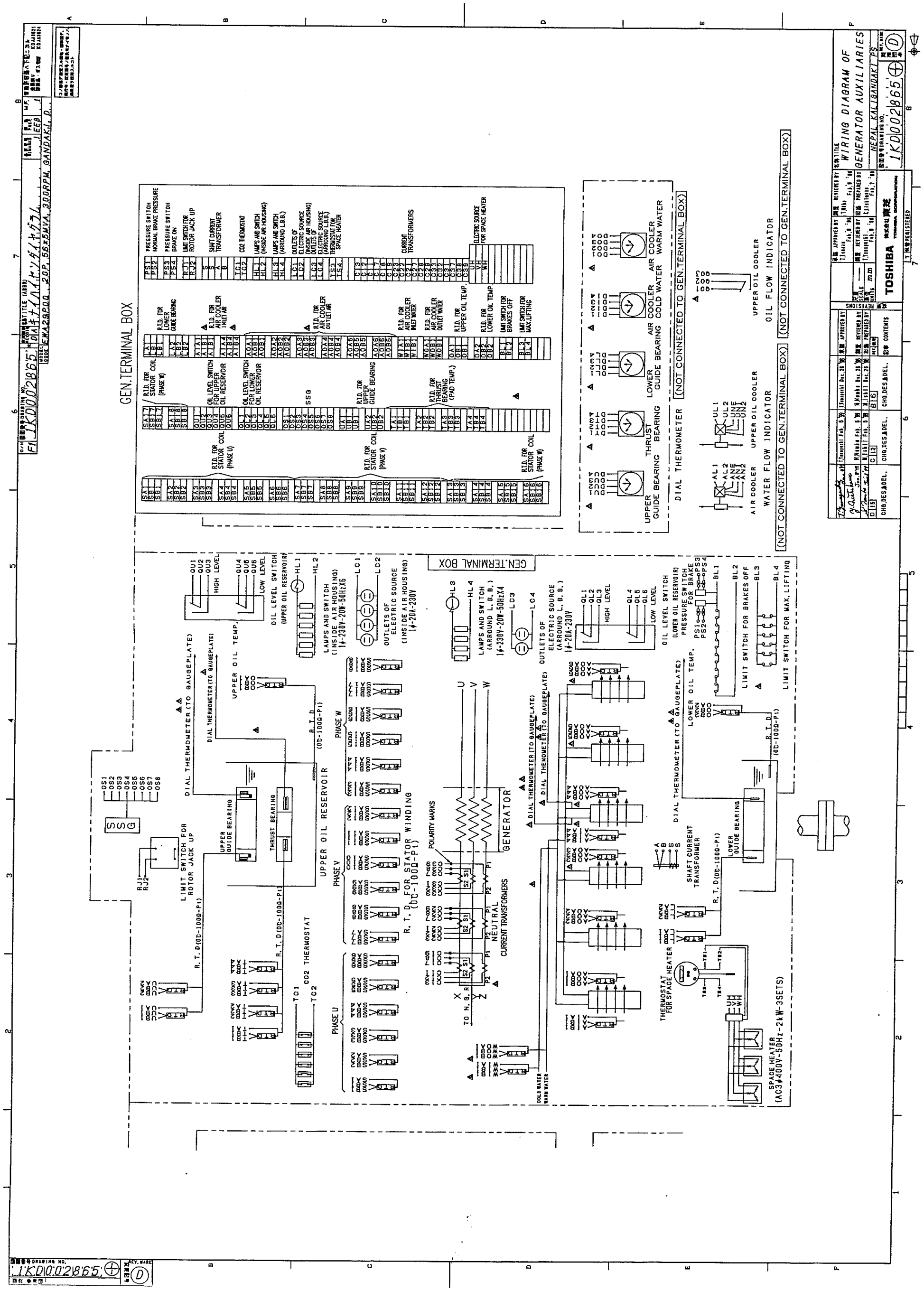
ROTOR ASSEMBLY

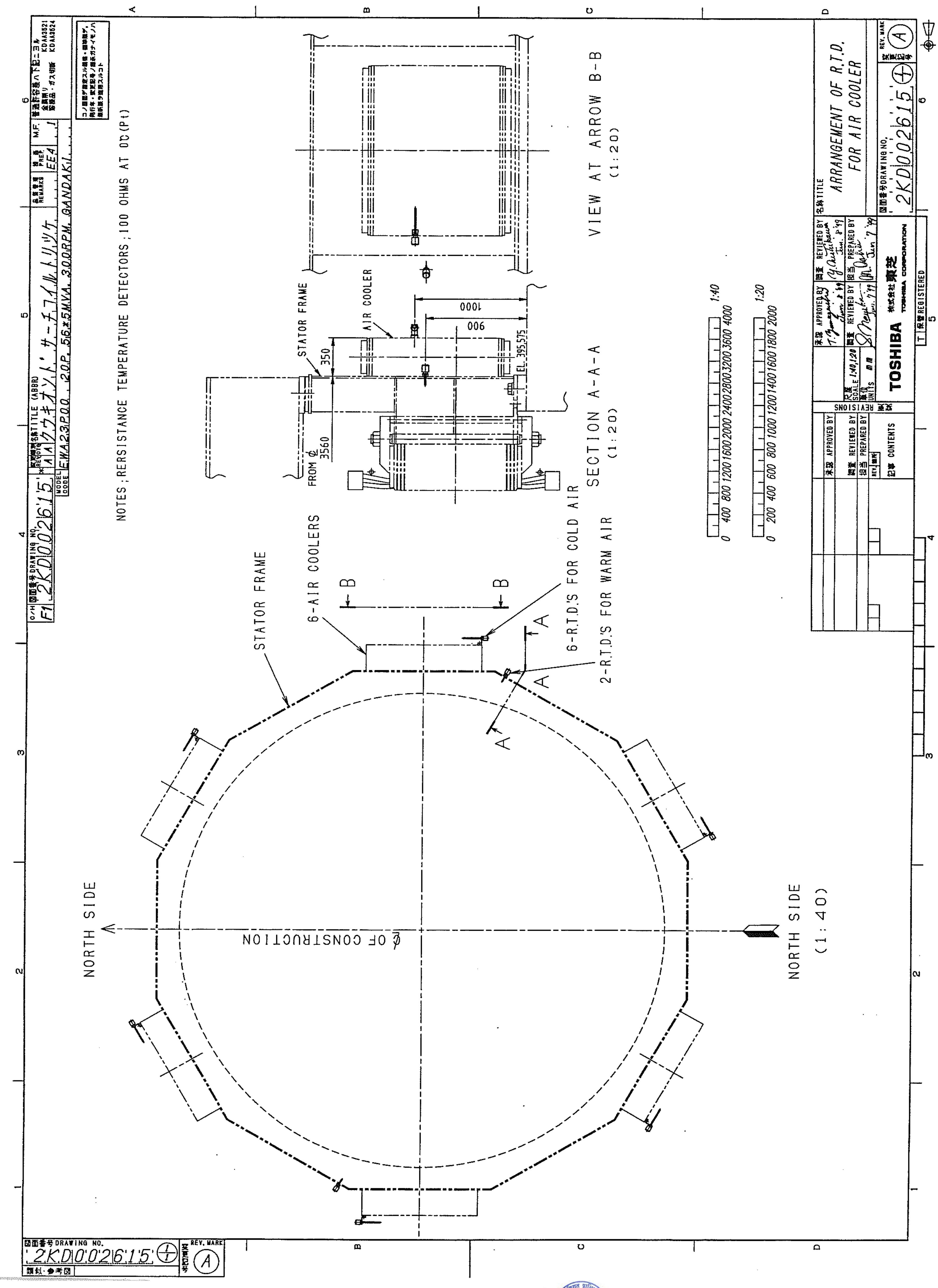
NEPAL KALIGANDAKI PS

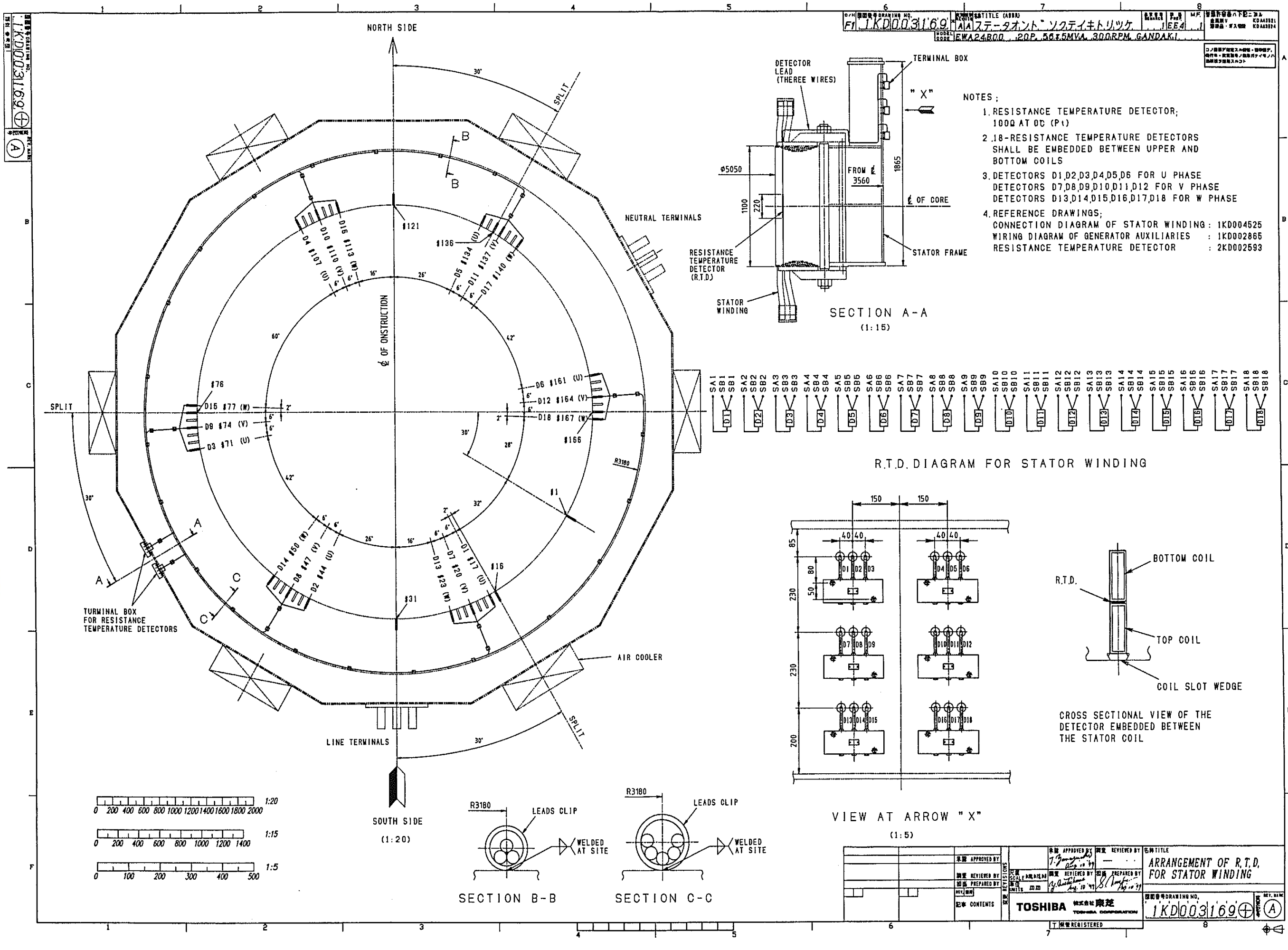
1KD0028699 C

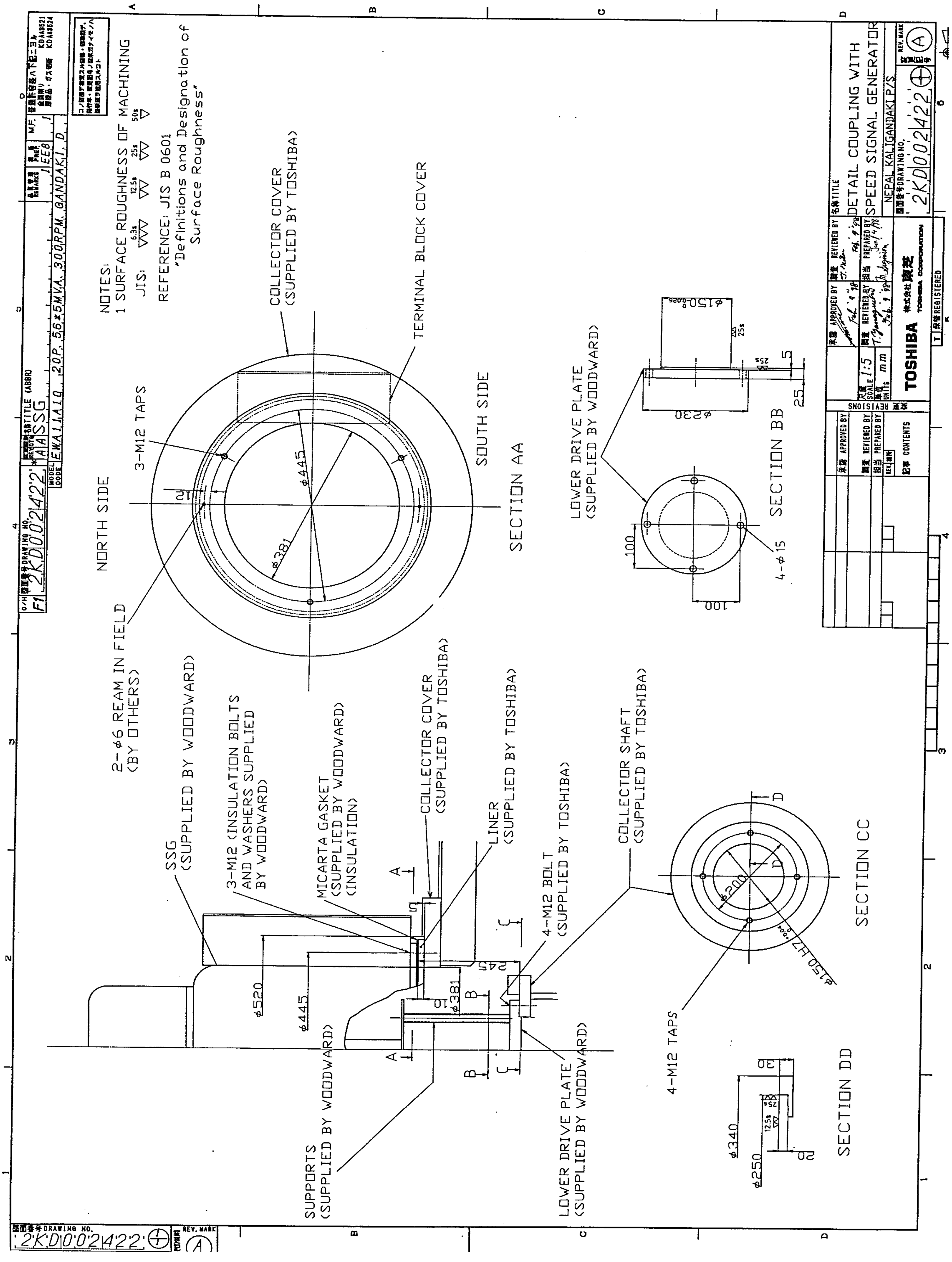

ROTOR ERECTION PEDESTAL
NEPAL KALI GANDAKI PS
2KD002402
TOSHIBA
TOSHIBA CORPORATION
ERECTION AREA
EL.399,500
OUTER DIA.OF ROTOR
ϕ5014
℄ UNIT NO.3
8500
5300
23500
6680
4300
10300
12000
REFERENCE DOCUMENT:INSTALLATION INSTRUCTION(E-DA0217)
(1:120)
BASE PLATE
COVER
" Z "
COVER FOR OPENING (1:30)
ϕ1600
700
ϕ1200
ϕ2000
DETAIL OF PEDESTAL
(1:30)
SHIM FOR LEVELING
PEDESTAL
SAND FOR LEVELING
FOR DRAIN BY OTHERS
SECTION AA
(1:30)
(207.5)
1600
EL.399,500
ROTOR
120 TON
LOWER PLATE OF ROTOR SPOKE
ϕ52
M36
DETAIL " X "
(1:10)
ϕ42
BASE PLATE
DETAIL " Y "
(1:10)
200
80
ϕ2400
ϕ2000
600
ϕ1200
FLAT HEAD BOLT
(M36)
DETAIL " Z " (1:10)
1:10
1:30
1:120
APPROVED BY
REVIEWED BY
PREPARED BY
T.Tanaka Dec.5 '97
T.Nibe Dec.5 '97
T.Yamaguchi Dec.4 '97
K.Kishimoto Dec.4 '97
SCALE 1/10, 1/120
REVISIONS
CONTENTS
ADD DETAIL OF PEDESTAL AND DETAIL OF COVER
CHG DES&DEL
CHG.DES&DEL.
REGISTERED
REV. MARK
C
DRAWING NO.
2KD002402
EWA20M00, 20P, 56.5MVA, 300RPM, GANDAKI, D.

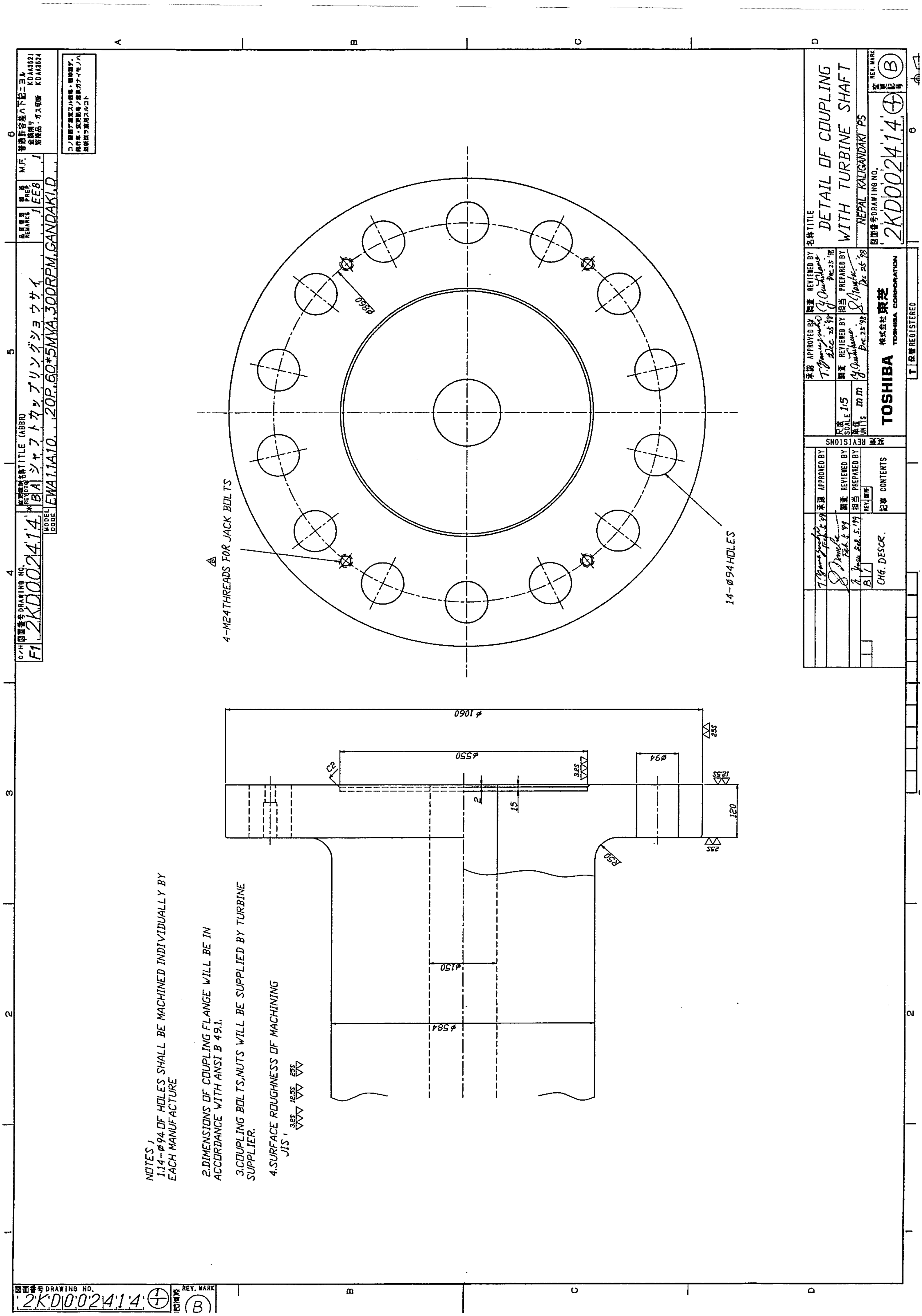

LIFTING OF ROTOR
NEPAL KALI GANDAKI PS
DRAWING NO. 2KD002394
REV. MARK B
TOSHIBA
TOSHIBA CORPORATION
SCALE 1/30
UNITS mm
APPROVED BY T.Tamaru Nov.6 '97
REVIEWED BY T.Nibe Nov.6 '97
REVIEWED BY T.Yamaguchi Nov.6 '97
PREPARED BY K.Kishimoto Nov.6 '97
REVISIONS
CONTENTS
REGISTERED
TITLE (ABBR.) ロータツリアゲズ
MODEL CODE EWA23Q00 20P,56*5MVA,300RPM,GANDAKI,D
REFERENCE DRAWING
LIFTING BEAM:KEB2120-1
80TON MAIN HOOK
120TON LIFTING BEAM
RING KEY
ROTOR 120 TON
EL.398,265
EL.399,500
EL.394,500
EL.395,575
EL.394,655
EL.393,500
(1235)
4765
(500)
(200)
(300)
(100)
(φ500)
(φ600)
(7700)
(7000)
φ1200
(207.5)
700
(150)
1600

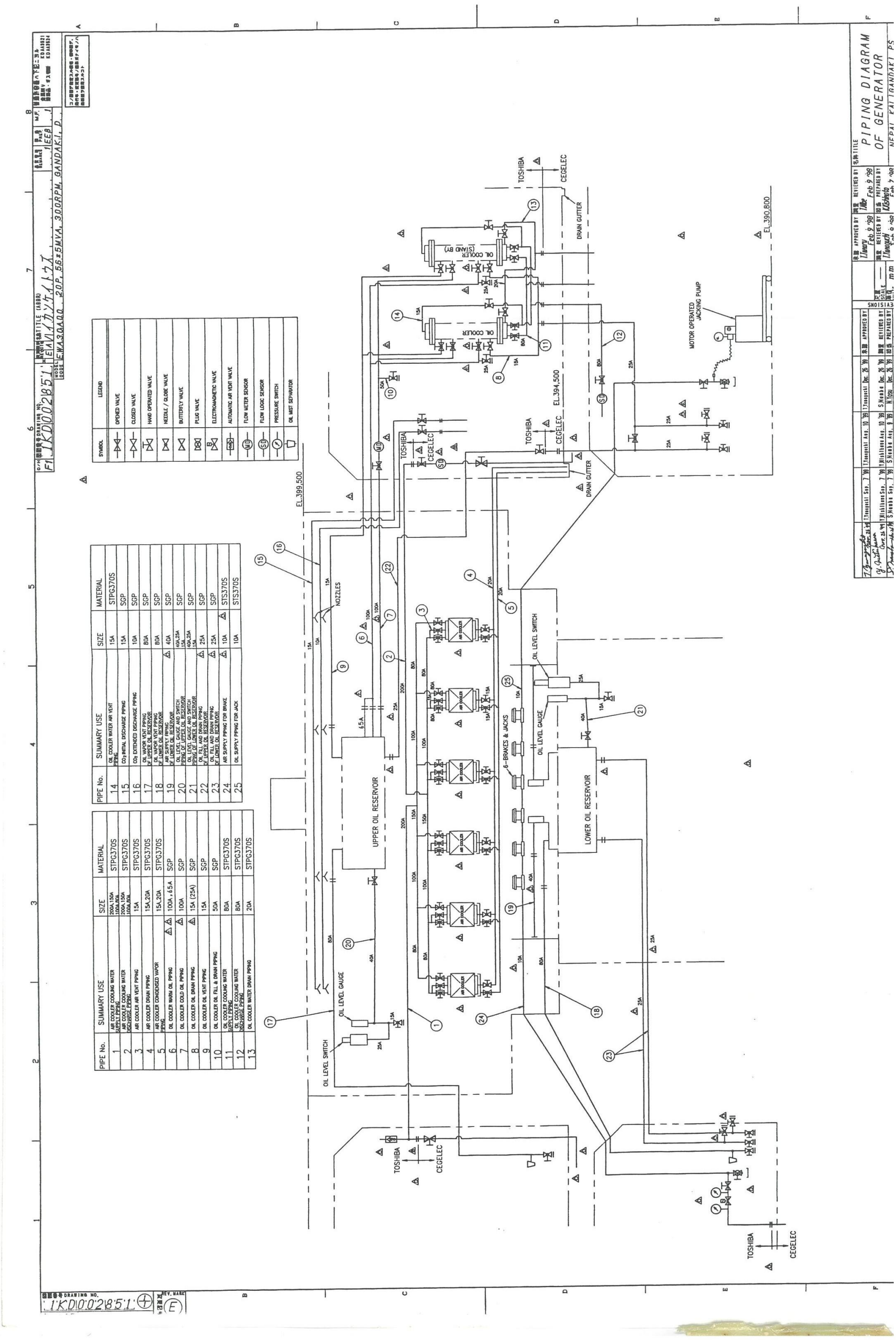

GEN.TERMINAL BOX
R.T.D FOR STATOR COIL (PHASE V)
R.T.D FOR STATOR COIL (PHASE W)
OIL LEVEL SWITCH FOR UPPER OIL RESERVOIR
OIL LEVEL SWITCH FOR LOWER OIL RESERVOIR
SSG
R.T.D FOR UPPER GUIDE BEARING
R.T.D FOR THRUST BEARING (PAD TEMP.)
R.T.D FOR LOWER GUIDE BEARING
R.T.D FOR AIR COOLER INLET AIR
R.T.D FOR AIR COOLER OUTLET AIR
R.T.D FOR AIR COOLER INLET WATER
R.T.D FOR AIR COOLER OUTLET WATER
R.T.D FOR UPPER OIL TEMP.
R.T.D FOR LOWER OIL TEMP.
LIMIT SWITCH FOR BRAKES OFF
LIMIT SWITCH FOR MAX.LIFTING
PRESSURE SWITCH NORMAL BRAKE PRESSURE
PRESSURE SWITCH BRAKE ON
LIMIT SWITCH FOR ROTOR JACK UP
SHAFT CURRENT TRANSFORMER
CO2 THERMOSTAT
LAMPS AND SWITCH (INSIDE AIR HOUSING)
LAMPS AND SWITCH (ARROUND L.B.B.)
OUTLETS OF ELECTRIC SOURCE (INSIDE AIR HOUSING)
OUTLETS OF ELECTRIC SOURCE (ARROUND L.B.B.)
THERMOSTAT FOR SPACE HEATER
CURRENT TRANSFORMERS
ELECTRIC SOURCE FOR SPACE HEATER
AIR COOLER WARM WATER
AIR COOLER COLD WATER
UPPER OIL COOLER
OIL FLOW INDICATOR
(NOT CONNECTED TO GEN.TERMINAL BOX)
DIAL THERMOMETER
UPPER GUIDE BEARING
LOWER GUIDE BEARING
THRUST BEARING
UPPER OIL RESERVOIR
LOWER OIL RESERVOIR
GEN.TERMINAL BOX
HIGH LEVEL
LOW LEVEL
OIL LEVEL SWITCH (UPPER OIL RESERVOIR)
OIL LEVEL SWITCH (LOWER OIL RESERVOIR)
PRESSURE SWITCH FOR BRAKE
LIMIT SWITCH FOR BRAKES OFF
LIMIT SWITCH FOR MAX. LIFTING
LAMPS AND SWITCH (INSIDE AIR HOUSING) 1φ-230V-20W-50Hz X6
OUTLETS OF ELECTRIC SOURCE (INSIDE AIR HOUSING) 1φ-20A-230V
LAMPS AND SWITCH (ARROUND L.B.B.) 1φ-230V-20W-50Hz X4
OUTLETS OF ELECTRIC SOURCE (ARROUND L.B.B.) 1φ-20A-230V
PHASE U
PHASE V
PHASE W
POLARITY MARKS
CURRENT TRANSFORMERS
NEUTRAL
GENERATOR
SHAFT CURRENT TRANSFORMER
THERMOSTAT FOR SPACE HEATER
SPACE HEATER (AC3φ400V-50Hz-2kW-3SETS)
TOSHIBA
WIRING DIAGRAM OF GENERATOR AUXILIARIES
NEPAL KALIGANDAKI PS
1KD002865 D

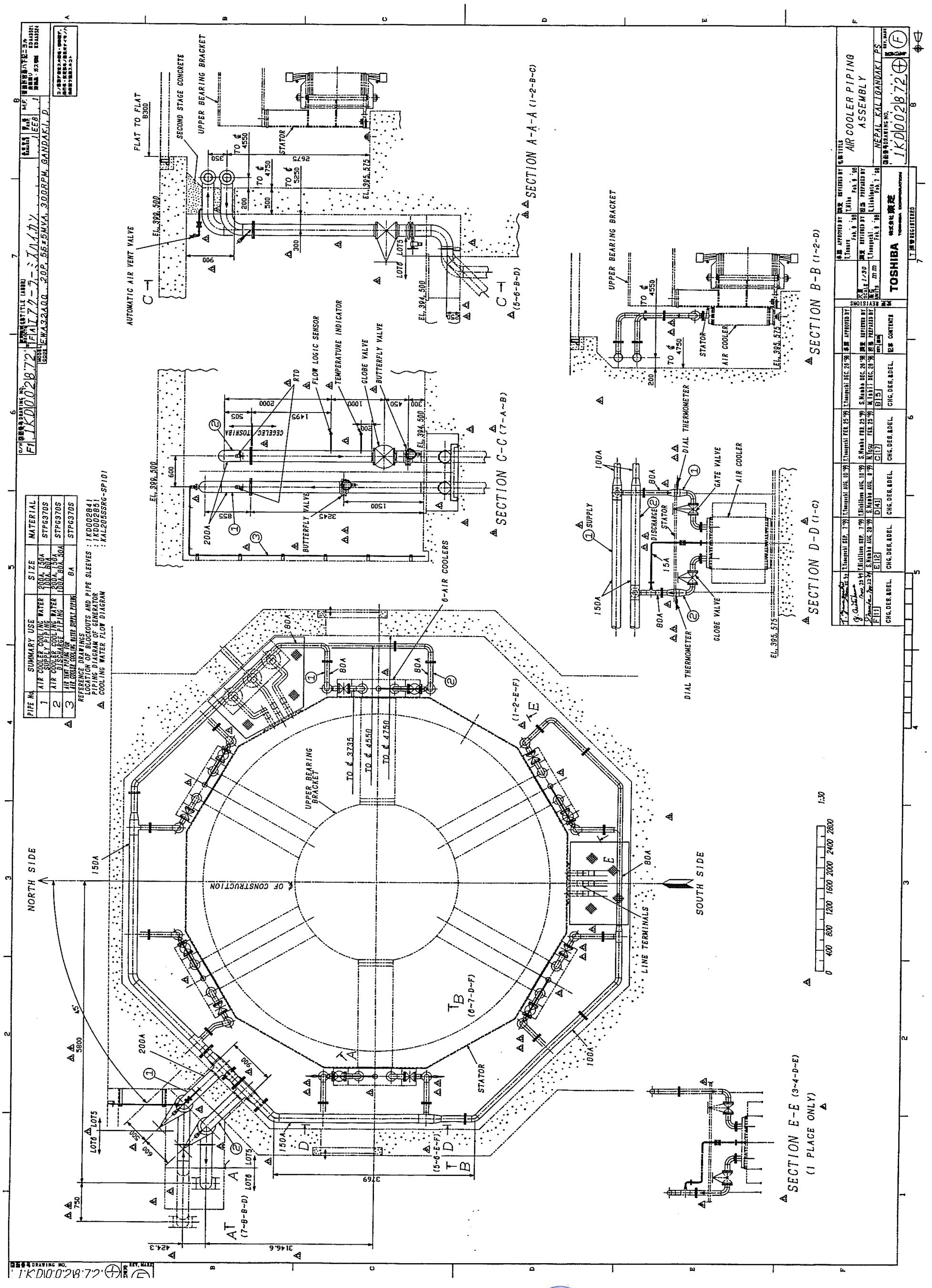

NOTES; RERSISTANCE TEMPERATURE DETECTORS; 100 OHMS AT 0℃ (Pt)
VIEW AT ARROW B-B
(1:20)
STATOR FRAME
AIR COOLER
1000
900
350
EL. 395.575
FROM ℄ 3560
SECTION A-A-A
(1:20)
STATOR FRAME
6-AIR COOLERS
6-R.T.D.'S FOR COLD AIR
2-R.T.D.'S FOR WARM AIR
NORTH SIDE
℄ OF CONSTRUCTION
NORTH SIDE
(1:40)
1:40
0 400 800 1200 1600 2000 2400 2800 3200 3600 4000
1:20
0 200 400 600 800 1000 1200 1400 1600 1800 2000
ARRANGEMENT OF R.T.D. FOR AIR COOLER
DRAWING NO. 2KD002615
REV. MARK A
SCALE 1:40, 1:20
TOSHIBA
TOSHIBA CORPORATION
APPROVED BY
REVIEWED BY
PREPARED BY
REVISIONS
CONTENTS
REGISTERED
TITLE (ABBR)
EWA23P00 20P. 56×5MVA 300RPM GANDAKI
REMARKS
PREP. EE4
M.F.
KDAA3521
KDAA3524
F1 2KD002615
MODEL CODE

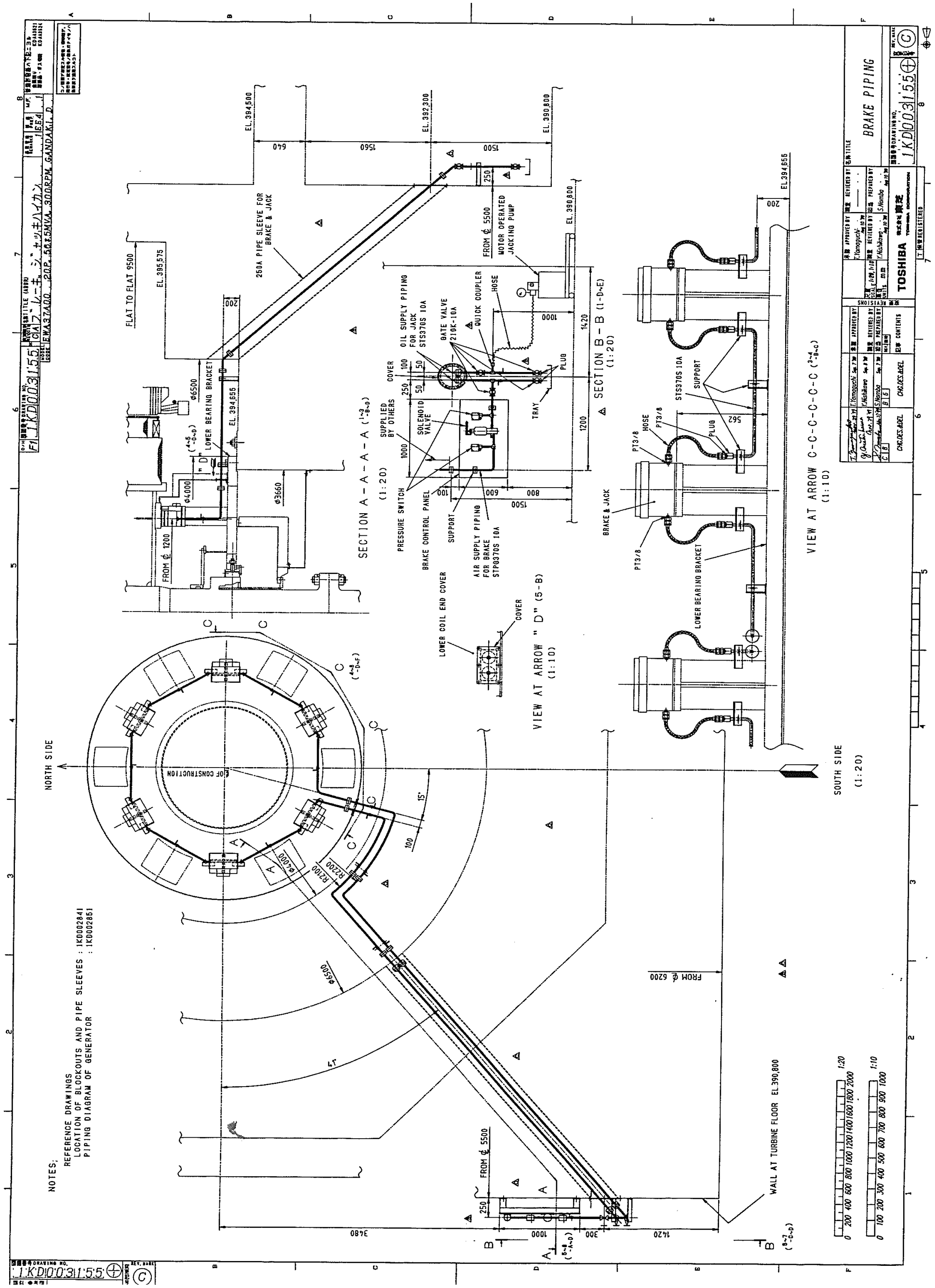

NORTH SIDE
SPLIT
NEUTRAL TERMINALS
SOUTH SIDE
(1:20)
LINE TERMINALS
AIR COOLER
TURMINAL BOX
FOR RESISTANCE
TEMPERATURE DETECTORS
℄ OF ONSTRUCTION
D16 #113 (W)
D10 #110 (V)
D4 #107 (U)
D5 #134 (U)
D11 #137 (V)
D17 #140 (W)
D6 #161 (U)
D12 #164 (V)
D18 #167 (W)
D15 #77 (W)
D9 #74 (V)
D3 #71 (U)
D14 #50 (W)
D8 #47 (V)
D2 #44 (U)
D7 #20 (V)
D1 #17 (U)
D13 #23 (W)
#121
#136
#76
#166
#1
#16
#31
R3180
DETECTOR LEAD (THEREE WIRES)
TERMINAL BOX
" X"
ϕ5050
FROM ℄ 3560
1865
1100
220
℄ OF CORE
RESISTANCE TEMPERATURE DETECTOR (R.T.D)
STATOR FRAME
STATOR WINDING
SECTION A-A
(1:15)
NOTES ;
1. RESISTANCE TEMPERATURE DETECTOR; 100Ω AT 0℃ (Pt)
2. 18-RESISTANCE TEMPERATURE DETECTORS SHALL BE EMBEDDED BETWEEN UPPER AND BOTTOM COILS
3. DETECTORS D1,D2,D3,D4,D5,D6 FOR U PHASE
DETECTORS D7,D8,D9,D10,D11,D12 FOR V PHASE
DETECTORS D13,D14,D15,D16,D17,D18 FOR W PHASE
4. REFERENCE DRAWINGS;
CONNECTION DIAGRAM OF STATOR WINDING : 1KD004525
WIRING DIAGRAM OF GENERATOR AUXILIARIES : 1KD002865
RESISTANCE TEMPERATURE DETECTOR : 2KD002593
SA1 SB1 SB1 D1
SA2 SB2 SB2 D2
SA3 SB3 SB3 D3
SA4 SB4 SB4 D4
SA5 SB5 SB5 D5
SA6 SB6 SB6 D6
SA7 SB7 SB7 D7
SA8 SB8 SB8 D8
SA9 SB9 SB9 D9
SA10 SB10 SB10 D10
SA11 SB11 SB11 D11
SA12 SB12 SB12 D12
SA13 SB13 SB13 D13
SA14 SB14 SB14 D14
SA15 SB15 SB15 D15
SA16 SB16 SB16 D16
SA17 SB17 SB17 D17
SA18 SB18 SB18 D18
R.T.D. DIAGRAM FOR STATOR WINDING
150 150
40 40 40 40
85 80 50 230 230 200
D1 D2 D3 D4 D5 D6
D7 D8 D9 D10 D11 D12
D13 D14 D15 D16 D17 D18
VIEW AT ARROW " X"
(1:5)
R.T.D.
BOTTOM COIL
TOP COIL
COIL SLOT WEDGE
CROSS SECTIONAL VIEW OF THE DETECTOR EMBEDDED BETWEEN THE STATOR COIL
R3180
LEADS CLIP
WELDED AT SITE
SECTION B-B
SECTION C-C
0 200 400 600 800 1000 1200 1400 1600 1800 2000 1:20
0 200 400 600 800 1000 1200 1400 1:15
0 100 200 300 400 500 1:5
TOSHIBA 株式会社 東芝 TOSHIBA CORPORATION
ARRANGEMENT OF R.T.D. FOR STATOR WINDING
1KD003169 ⊕
A

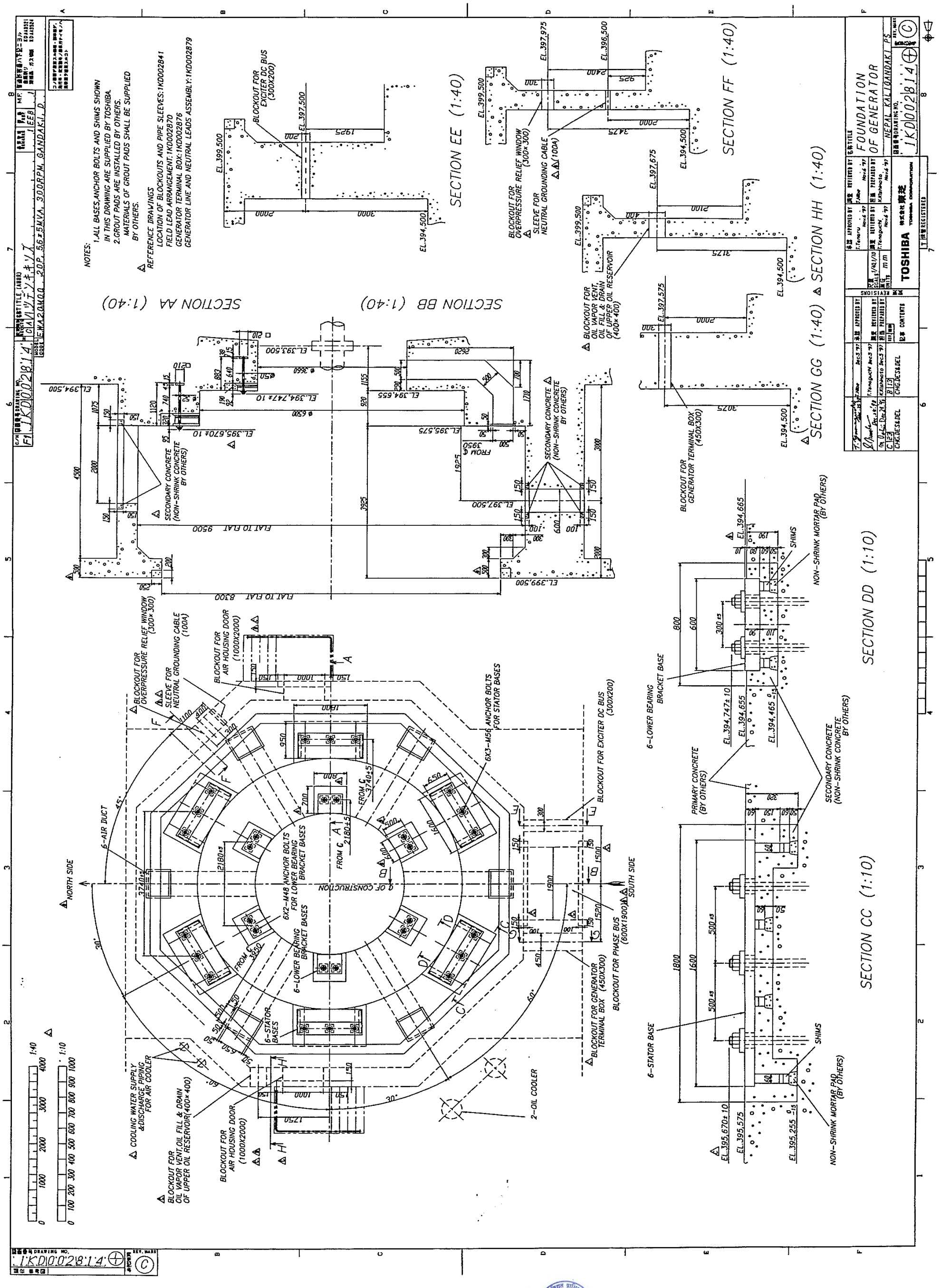

NOTES:
1 SURFACE ROUGHNESS OF MACHINING
JIS: 6.3s 12.5s 25s 50s
REFERENCE: JIS B 0601
"Definitions and Designation of Surface Roughness"
COLLECTOR COVER (SUPPLIED BY TOSHIBA)
TERMINAL BLOCK COVER
NORTH SIDE
3-M12 TAPS
φ445
φ381
12
SOUTH SIDE
SECTION AA
2-φ6 REAM IN FIELD (BY OTHERS)
LOWER DRIVE PLATE (SUPPLIED BY WOODWARD)
φ150 0 -0.026
25s
5
25
φ230
100
100
4-φ15
SECTION BB
SSG (SUPPLIED BY WOODWARD)
3-M12 (INSULATION BOLTS AND WASHERS SUPPLIED BY WOODWARD)
MICARTA GASKET (SUPPLIED BY WOODWARD) (INSULATION)
COLLECTOR COVER (SUPPLIED BY TOSHIBA)
LINER (SUPPLIED BY TOSHIBA)
4-M12 BOLT (SUPPLIED BY TOSHIBA)
COLLECTOR SHAFT (SUPPLIED BY TOSHIBA)
φ520
φ445
φ381
245
10
SUPPORTS (SUPPLIED BY WOODWARD)
LOWER DRIVE PLATE (SUPPLIED BY WOODWARD)
φ200
φ150 H7
4-M12 TAPS
SECTION CC
30
20
φ340
φ250
12.5s
25s
SECTION DD
DETAIL COUPLING WITH SPEED SIGNAL GENERATOR
NEPAL KALIGANDAKI P/S
DRAWING NO. 2KD002422
REV. MARK A
SCALE 1:5
UNITS mm
APPROVED BY
REVIEWED BY
PREPARED BY
REVISIONS
CONTENTS
TOSHIBA
TOSHIBA CORPORATION
REGISTERED
TITLE (ABBR) SSG
MODEL CODE EWA11A1Q
20P, 56x5MVA, 300RPM, GANDAKI, D
REMARKS
PREF. EE8
M.F.
DRAWING NO. 2KD002422

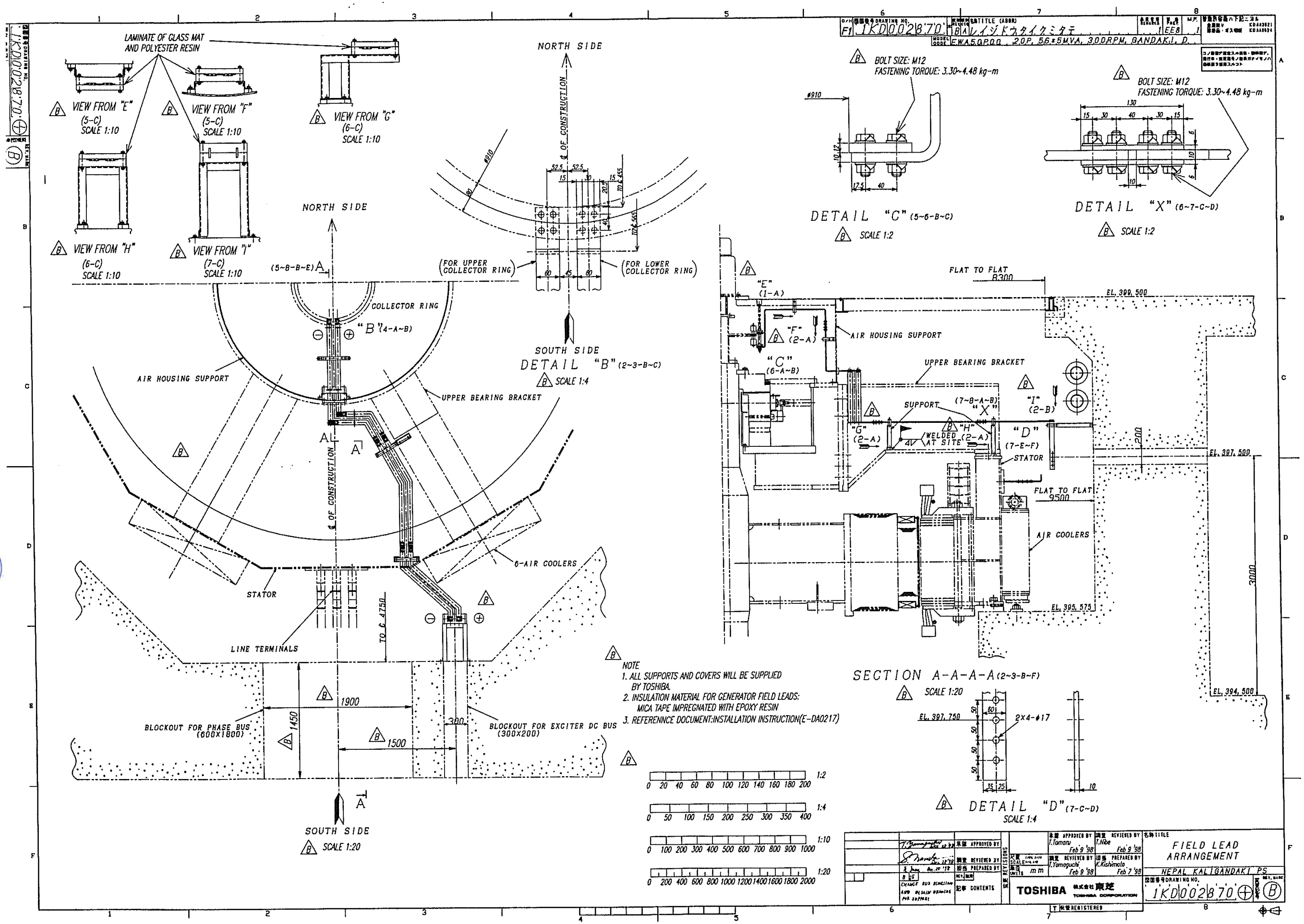

DETAIL OF COUPLING WITH TURBINE SHAFT
NEPAL KALIGANDAKI PS
2KD002414
TOSHIBA
TOSHIBA CORPORATION
EWA1.1A10 20P,60*5MVA,300RPM,GANDAKI,D
4-M24THREADS FOR JACK BOLTS
14-Ø94HOLES
NOTES ;
1.14-Ø94 OF HOLES SHALL BE MACHINED INDIVIDUALLY BY EACH MANUFACTURE
2.DIMENSIONS OF COUPLING FLANGE WILL BE IN ACCORDANCE WITH ANSI B 49.1.
3.COUPLING BOLTS,NUTS WILL BE SUPPLIED BY TURBINE SUPPLIER.
4.SURFACE ROUGHNESS OF MACHINING JIS ;
Ø1060
Ø550
Ø94
Ø150
Ø584
R50
120
15
2
C2
SCALE 1/5
UNITS mm
CHG. DESCR.
REVISIONS

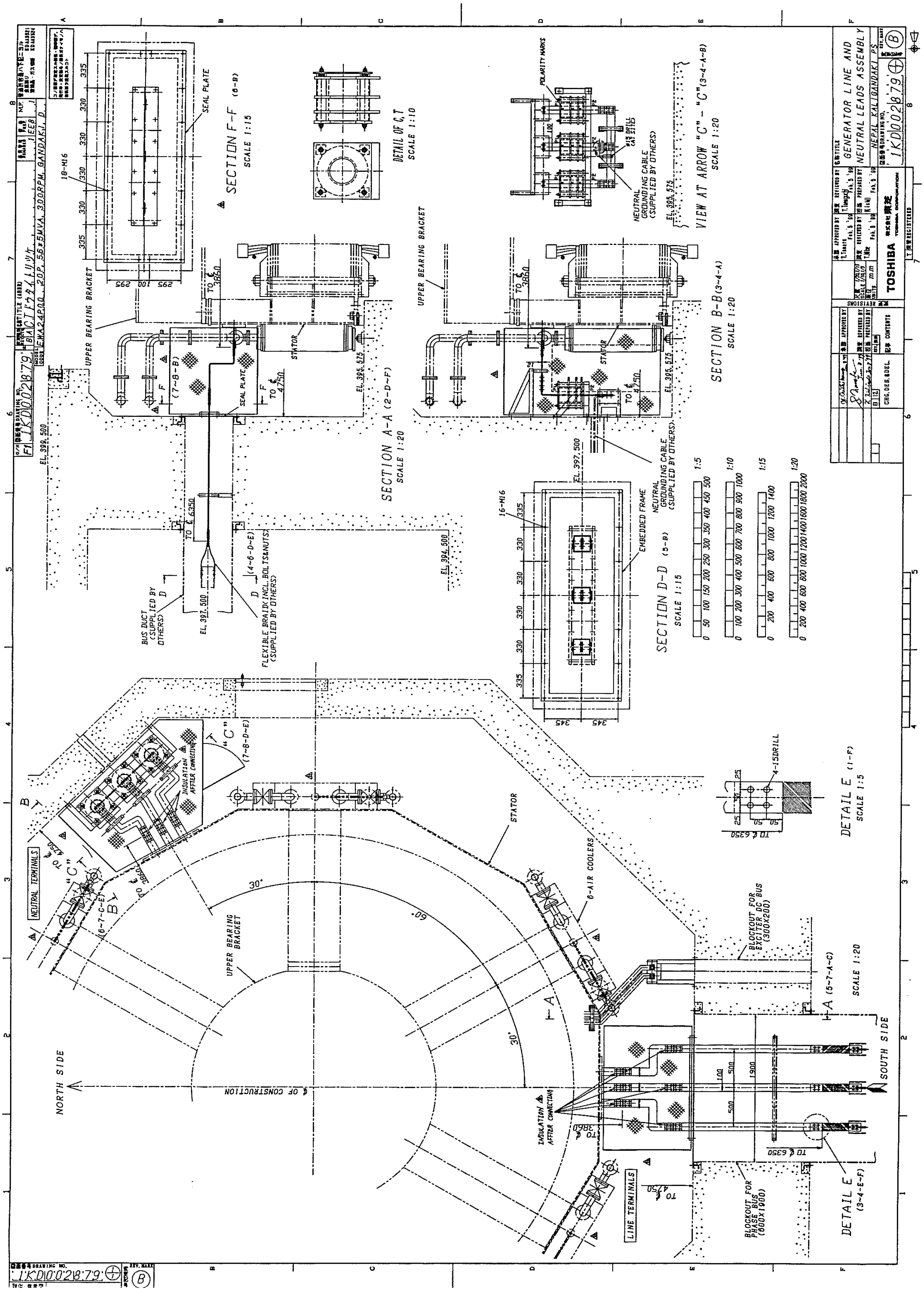

PIPING DIAGRAM OF GENERATOR
NEPAL KATTGANDAKI P.S.
MOTOR OPERATED JACKING PUMP
EL.390,800
EL.394,500
EL.399,500
TOSHIBA
CEGELEC
DRAIN GUTTER
OIL COOLER (STAND BY)
OIL COOLER
AIR COOLER
NOZZLES
OIL LEVEL SWITCH
OIL LEVEL GAUGE
6-BRAKES & JACKS
UPPER OIL RESERVOIR
LOWER OIL RESERVOIR
SYMBOL LEGEND
OPENED VALVE
CLOSED VALVE
HAND OPERATED VALVE
NEEDLE / GLOBE VALVE
BUTTERFLY VALVE
PLUG VALVE
ELECTROMAGNETIC VALVE
AUTOMATIC AIR VENT VALVE
FLOW METER SENSOR
FLOW LOGIC SENSOR
PRESSURE SWITCH
OIL MIST SEPARATOR
PIPE No. SUMMARY USE SIZE MATERIAL
1 AIR COOLER COOLING WATER SUPPLY PIPING 200A,150A 100A,80A STPG370S
2 AIR COOLER COOLING WATER DISCHARGE PIPING 200A,150A 100A,80A STPG370S
3 AIR COOLER AIR VENT PIPING 15A STPG370S
4 AIR COOLER DRAIN PIPING 15A,20A STPG370S
5 AIR COOLER CONDENSED VAPOR PIPING 15A,20A STPG370S
6 OIL COOLER WARM OIL PIPING 100A,65A SGP
7 OIL COOLER COLD OIL PIPING 100A SGP
8 OIL COOLER OIL DRAIN PIPING 15A (25A) SGP
9 OIL COOLER OIL VENT PIPING 15A SGP
10 OIL COOLER OIL FILL & DRAIN PIPING 50A SGP
11 OIL COOLER COOLING WATER SUPPLY PIPING 80A STPG370S
12 OIL COOLER COOLING WATER DISCHARGE PIPING 80A STPG370S
13 OIL COOLER WATER DRAIN PIPING 20A STPG370S
PIPE No. SUMMARY USE SIZE MATERIAL
14 OIL COOLER WATER AIR VENT PIPING 15A STPG370S
15 CO2 INITIAL DISCHARGE PIPING 15A SGP
16 CO2 EXTENDED DISCHARGE PIPING 10A SGP
17 OIL VAPOR VENT PIPING OF UPPER OIL RESERVOIR 80A SGP
18 OIL VAPOR VENT PIPING OF LOWER OIL RESERVOIR 80A SGP
19 AIR SUPPLY PIPING OF LOWER OIL RESERVOIR 40A SGP
20 OIL LEVEL GAUGE AND SWITCH PIPING OF UPPER OIL RESERVOIR 40A,25A 15A SGP
21 OIL LEVEL GAUGE AND SWITCH PIPING OF LOWER OIL RESERVOIR 40A,25A 15A SGP
22 OIL FILL AND DRAIN PIPING OF UPPER OIL RESERVOIR 25A SGP
23 OIL FILL AND DRAIN PIPING OF LOWER OIL RESERVOIR 25A SGP
24 AIR SUPPLY PIPING FOR BRAKE 10A STS370S
25 OIL SUPPLY PIPING FOR JACK 10A STS370S
DRAWING NO. 1KD10028511
REV. MARK E

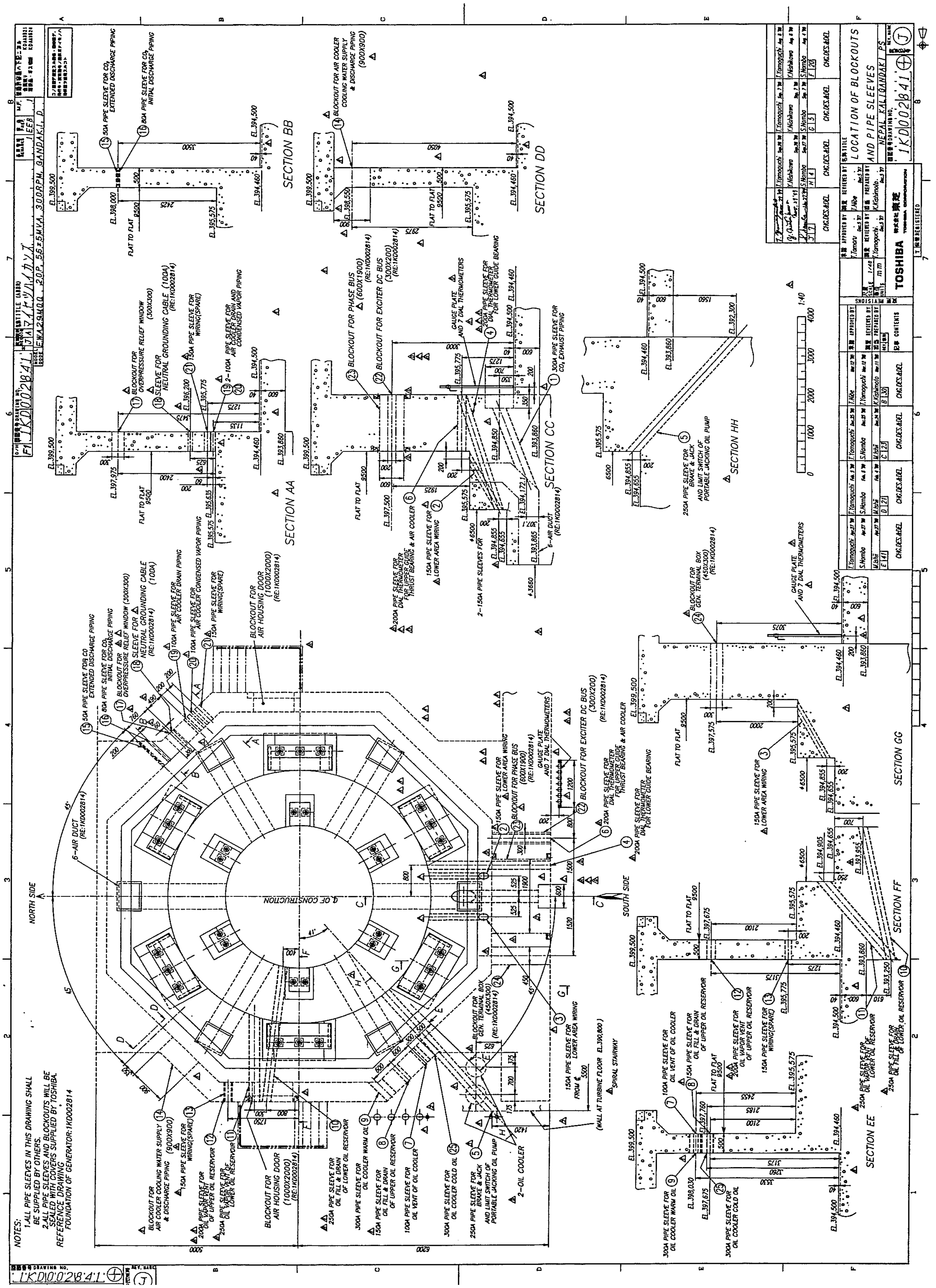

SECTION A-A-A (1~2~B~C)
SECTION B-B (1~2~D)
SECTION C-C (7~A~B)
SECTION D-D (1~G)
SECTION E-E (3~4~D~E) (1 PLACE ONLY)
AIR COOLER PIPING ASSEMBLY
NEPAL KALIGANDAKI PS
TOSHIBA
1KD0028'72
AUTOMATIC AIR VENT VALVE
UPPER BEARING BRACKET
SECOND STAGE CONCRETE
FLAT TO FLAT
STATOR
AIR COOLER
DIAL THERMOMETER
GATE VALVE
GLOBE VALVE
BUTTERFLY VALVE
FLOW LOGIC SENSOR
TEMPERATURE INDICATOR
RTD
6-AIR COOLERS
LINE TERMINALS
NORTH SIDE
SOUTH SIDE
REFERENCE DRAWINGS
LOCATION OF BLOCKOUTS AND PIPE SLEEVES : 1KD0028'41
PIPING DIAGRAM OF GENERATOR : 1KD0028'51
COOLING WATER FLOW DIAGRAM : KAL2055SRG-SP101
PIPE No. | SUMMARY USE | SIZE | MATERIAL
1 | AIR COOLER COOLING WATER SUPPLY PIPING | 200A, 150A, 100A, 80A | STPG370S
2 | AIR COOLER COOLING WATER DISCHARGE PIPING | 200A, 150A, 100A, 80A | STPG370S
3 | AIR TEMPERATURE INDICATOR AIR COOLER COOLING WATER SUPPLY PIPING | 8A | STPG370S


BRAKE PIPING
TOSHIBA
1KD003155
SECTION A - A - A - A (1:20)
SECTION B - B (1:20)
VIEW AT ARROW " D" (5-B) (1:10)
VIEW AT ARROW C-C-C-C-C-C (1:10)
NORTH SIDE
SOUTH SIDE (1:20)
FROM ℄ 5500
FROM ℄ 1200
FROM ℄ 6200
EL.394,500
EL.392,300
EL.390,800
EL.394,655
EL.395,575
250A PIPE SLEEVE FOR BRAKE & JACK
MOTOR OPERATED JACKING PUMP
OIL SUPPLY PIPING FOR JACK STS370S 10A
GATE VALVE 210K-10A
QUICK COUPLER
HOSE
PLUG
TRAY
SUPPLIED BY OTHERS
SOLENOID VALVE
PRESSURE SWITCH
BRAKE CONTROL PANEL
SUPPORT
AIR SUPPLY PIPING FOR BRAKE STPG370S 10A
LOWER COIL END COVER
COVER
BRAKE & JACK
LOWER BEARING BRACKET
STS370S 10A
PT3/8
WALL AT TURBINE FLOOR EL390,800
NOTES;
REFERENCE DRAWINGS
LOCATION OF BLOCKOUTS AND PIPE SLEEVES : 1KD002841
PIPING DIAGRAM OF GENERATOR : 1KD002851


NOTES:
1.ALL BASES,ANCHOR BOLTS AND SHIMS SHOWN IN THIS DRAWING ARE SUPPLIED BY TOSHIBA.
2.GROUT PADS ARE INSTALLED BY OTHERS.
MATERIALS OF GROUT PADS SHALL BE SUPPLIED BY OTHERS.
REFERENCE DRAWINGS
LOCATION OF BLOCKOUTS AND PIPE SLEEVES:1KD0002841
FIELD LEAD ARRANGEMENT:1KD0002870
GENERATOR TERMINAL BOX:1KD0002876
GENERATOR LINE AND NEUTRAL LEADS ASSEMBLY:1KD0002879
SECTION AA (1:40)
SECTION BB (1:40)
SECTION CC (1:10)
SECTION DD (1:10)
SECTION EE (1:40)
SECTION FF (1:40)
SECTION GG (1:40)
SECTION HH (1:40)
FOUNDATION OF GENERATOR
NEPAL KALIGANDAKI PS
TOSHIBA
DRAWING NO. 1KD0028114
REV. MARK C
BLOCKOUT FOR EXCITER DC BUS (300X200)
BLOCKOUT FOR GENERATOR TERMINAL BOX (450X300)
BLOCKOUT FOR PHASE BUS (600X1900)
BLOCKOUT FOR AIR HOUSING DOOR (1000X2000)
BLOCKOUT FOR OVERPRESSURE RELIEF WINDOW (300×300)
SLEEVE FOR NEUTRAL GROUNDING CABLE (100A)
BLOCKOUT FOR OIL VAPOR VENT, OIL FILL & DRAIN OF UPPER OIL RESERVOIR (400×400)
COOLING WATER SUPPLY &DISCHARGE PIPING FOR AIR COOLER
6-AIR DUCT
6X3-M56 ANCHOR BOLTS FOR STATOR BASES
6X2-M48 ANCHOR BOLTS FOR LOWER BEARING BRACKET BASES
6-LOWER BEARING BRACKET BASE
6-STATOR BASES
6-STATOR BASE
2-OIL COOLER
SECONDARY CONCRETE (NON-SHRINK CONCRETE BY OTHERS)
PRIMARY CONCRETE (BY OTHERS)
NON-SHRINK MORTAR PAD (BY OTHERS)
SHIMS
NORTH SIDE
SOUTH SIDE
FLAT TO FLAT 9500
FLAT TO FLAT 8300


LAMINATE OF GLASS MAT AND POLYESTER RESIN
VIEW FROM "E" (5-C) SCALE 1:10
VIEW FROM "F" (5-C) SCALE 1:10
VIEW FROM "G" (6-C) SCALE 1:10
VIEW FROM "H" (6-C) SCALE 1:10
VIEW FROM "I" (7-C) SCALE 1:10
NORTH SIDE
℄ OF CONSTRUCTION
(5~8-B~E)
COLLECTOR RING
"B" (4-A~B)
AIR HOUSING SUPPORT
UPPER BEARING BRACKET
℄ OF CONSTRUCTION
6-AIR COOLERS
STATOR
LINE TERMINALS
TO ℄ 4750
1900
1450
1500
300
BLOCKOUT FOR PHASE BUS (600X1800)
BLOCKOUT FOR EXCITER DC BUS (300X200)
SOUTH SIDE
SCALE 1:20
NORTH SIDE
(FOR UPPER COLLECTOR RING)
(FOR LOWER COLLECTOR RING)
SOUTH SIDE
DETAIL "B" (2~3-B~C)
SCALE 1:4
BOLT SIZE: M12
FASTENING TORQUE: 3.30~4.48 kg-m
DETAIL "C" (5~6-B~C)
SCALE 1:2
BOLT SIZE: M12
FASTENING TORQUE: 3.30~4.48 kg-m
DETAIL "X" (6~7-C~D)
SCALE 1:2
FLAT TO FLAT 8300
EL. 399.500
"E" (1-A)
"F" (2-A)
AIR HOUSING SUPPORT
"C" (6-A~B)
UPPER BEARING BRACKET
SUPPORT
(7~8-A~B) "X"
"I" (2-B)
"G" (2-A)
"H" (2-A) WELDED AT SITE
"D" (7-E~F)
STATOR
EL. 397.500
FLAT TO FLAT 9500
AIR COOLERS
EL. 395.575
3000
EL. 394.500
NOTE
1. ALL SUPPORTS AND COVERS WILL BE SUPPLIED BY TOSHIBA.
2. INSULATION MATERIAL FOR GENERATOR FIELD LEADS: MICA TAPE IMPREGNATED WITH EPOXY RESIN
3. REFERENNCE DOCUMENT:INSTALLATION INSTRUCTION(E-DA0217)
SECTION A-A-A-A (2~3-B~F)
SCALE 1:20
EL. 397.750
2X4-ϕ17
DETAIL "D" (7-C~D)
SCALE 1:4
1:2
1:4
1:10
1:20
TOSHIBA
FIELD LEAD ARRANGEMENT
NEPAL KALIGANDAKI PS
1KD002870
REV. B


SECTION F-F (6-B)
SCALE 1:15
DETAIL OF C,T
SCALE 1:10
SECTION A-A (2~D~F)
SCALE 1:20
SECTION B-B(3~4-A)
SCALE 1:20
VIEW AT ARROW "C" ~ "C"(3~4~A~B)
SCALE 1:20
SECTION D-D (5-B)
SCALE 1:15
DETAIL E (1-F)
SCALE 1:5
SCALE 1:10
SCALE 1:15
SCALE 1:20
SEAL PLATE
UPPER BEARING BRACKET
STATOR
EL. 395.575
EL. 399.500
EL. 397.500
EL. 394.500
POLARITY MARKS
NEUTRAL GROUNDING CABLE (SUPPLIED BY OTHERS)
BUS DUCT (SUPPLIED BY OTHERS)
FLEXIBLE BRAID(INCL. BOLTS&NUTS) (SUPPLIED BY OTHERS)
EMBEDDED FRAME
NEUTRAL TERMINALS
LINE TERMINALS
INSULATION AFTER CONNECTING
6-AIR COOLERS
BLOCKOUT FOR EXCITER DC BUS (300X200)
BLOCKOUT FOR PHASE BUS (600X1900)
NORTH SIDE
SOUTH SIDE
TOSHIBA
GENERATOR LINE AND NEUTRAL LEADS ASSEMBLY
NEPAL KALIGANDAKI PS
DRAWING NO. IKD0028179
REV. MARK B


NOTES:
1.ALL PIPE SLEEVES IN THIS DRAWING SHALL BE SUPPLIED BY OTHERS.
2.ALL PIPE SLEEVES AND BLOCKOUTS WILL BE SEALED WITH COVERS SUPPLIED BY TOSHIBA.
REFERENCE DRAWING
FOUNDATION OF GENERATOR:1KD002814
SECTION AA
SECTION BB
SECTION CC
SECTION DD
SECTION EE
SECTION FF
SECTION GG
SECTION HH
NORTH SIDE
SOUTH SIDE
℄ OF CONSTRUCTION
LOCATION OF BLOCKOUTS AND PIPE SLEEVES
NEPAL KALIGANDAKI PS
1KD002841
TOSHIBA

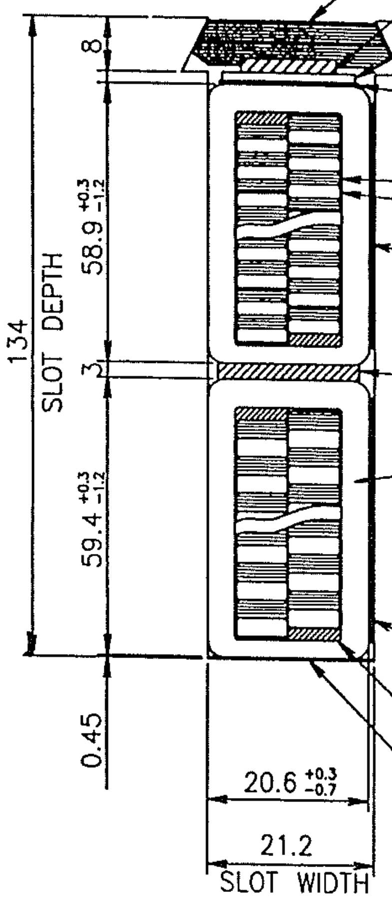
C/H F1 図面番号 DRAWING NO. 3KD002436 * 変更記号 REV. A 区分 CTG A 名称 TITLE (ABBR) ステータコイル

MODEL CODE EWA23B00, 20P, 56*5MVA, 300RPM, GANDAKI

品質管理 REMARKS 2 | 担当 PREP. EE2 | M.F. 1

普通許容差ハ下記ニヨル 金属削り KDAA3521 溶接品・ガス切断 KDAA3524

コノ図面ガ指定スル規格・標準類デ、発行年・変更記号ノ指示ガナイモノハ最新版ヲ適用スルコト



CROSS SECTION OF STATOR COIL

1. SINGLE-TURN COIL WITH STRANDS COMPLETELY TRANSPOSED BY THE ROEBEL METHOD
2. CLASS "F" INSULATION DEFINED IN IEC STANDARDS
3. TOTAL INSULATION THICKNESS ; 2.6 mm

See Attached Comments

- [x] PROCEED WITHOUT CHANGE
- [ ] PROCEED AS CORRECTED
- [ ] REVISE AND RESUBMIT
- [ ] REJECTED

Permission to proceed with fabrication and construction is general only and shall not in any respect relieve or diminish the responsibility of the Contractor for full compliance with the requirements of the Contract Documents. Issued for Construction Drawings and approved Vendor Drawings.

MORRISON KNUDSEN INTERNATIONAL INC.
MKI Contract No. 1860
Reviewed by: Ronald Kuhn Date 1 Sep 98
Supervisor: Date

ES-01-030
MCT/MKI/98/046
Ltr. dated: 30 July 98
Recvd. date: 9 July '98

承認 APPROVED BY	調査 REVIEWED BY	名称 TITLE
N. Nishijima Jul. 4 '98	—	CROSS SECTION OF STATOR COIL
調査 REVIEWED BY: T. Aso Jul. 4 '98	担当 PREPARED BY: K. Onozawa JUL 4 '98	NEPAL KALI GANDAKI "A"

尺度 SCALE — 単位 UNITS mm

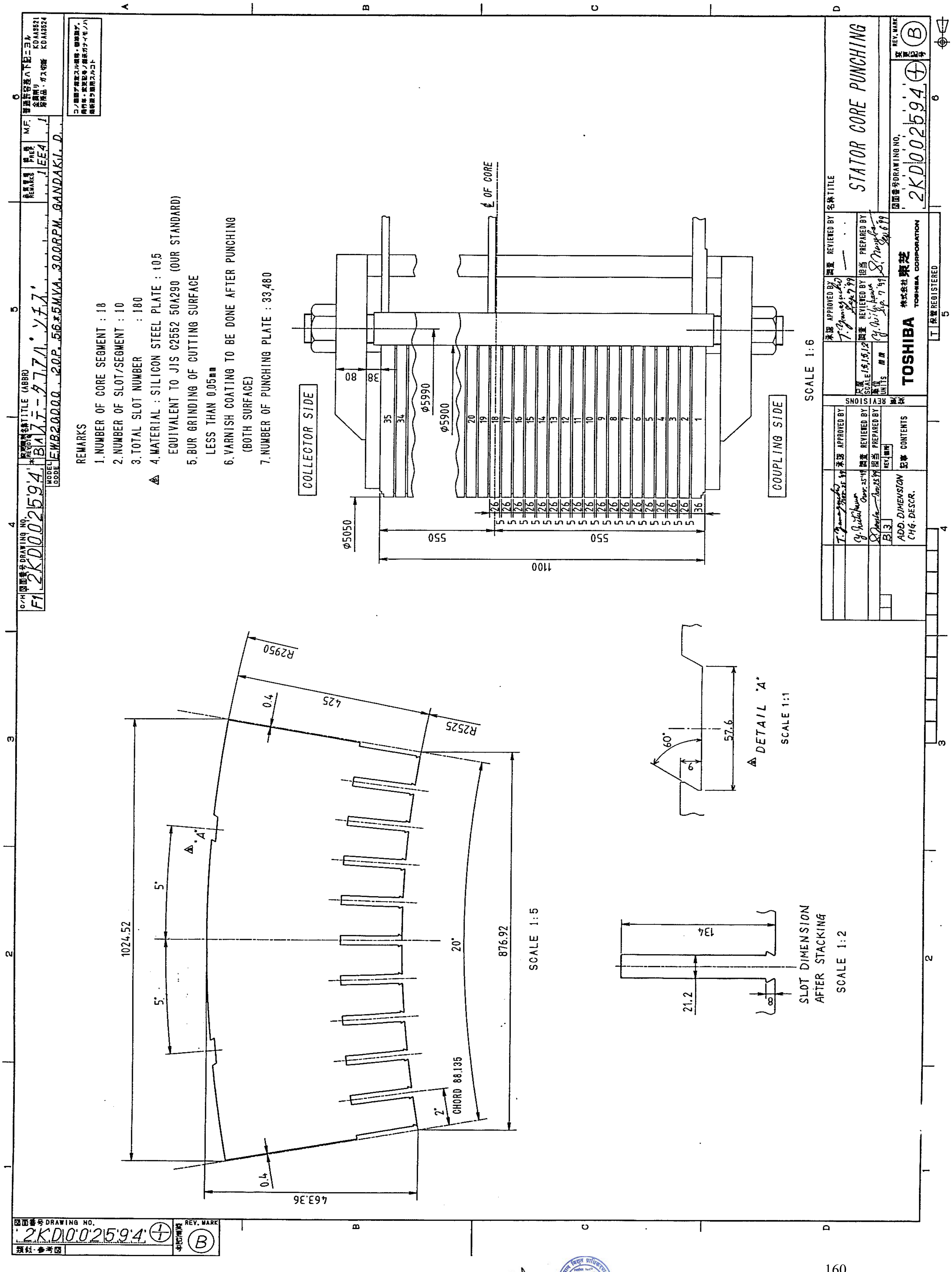
変更 REVISIONS: 承認 APPROVED BY / 調査 REVIEWED BY / 担当 PREPARED BY / REV. 記事 CONTENTS

TOSHIBA 株式会社東芝 TOSHIBA CORPORATION

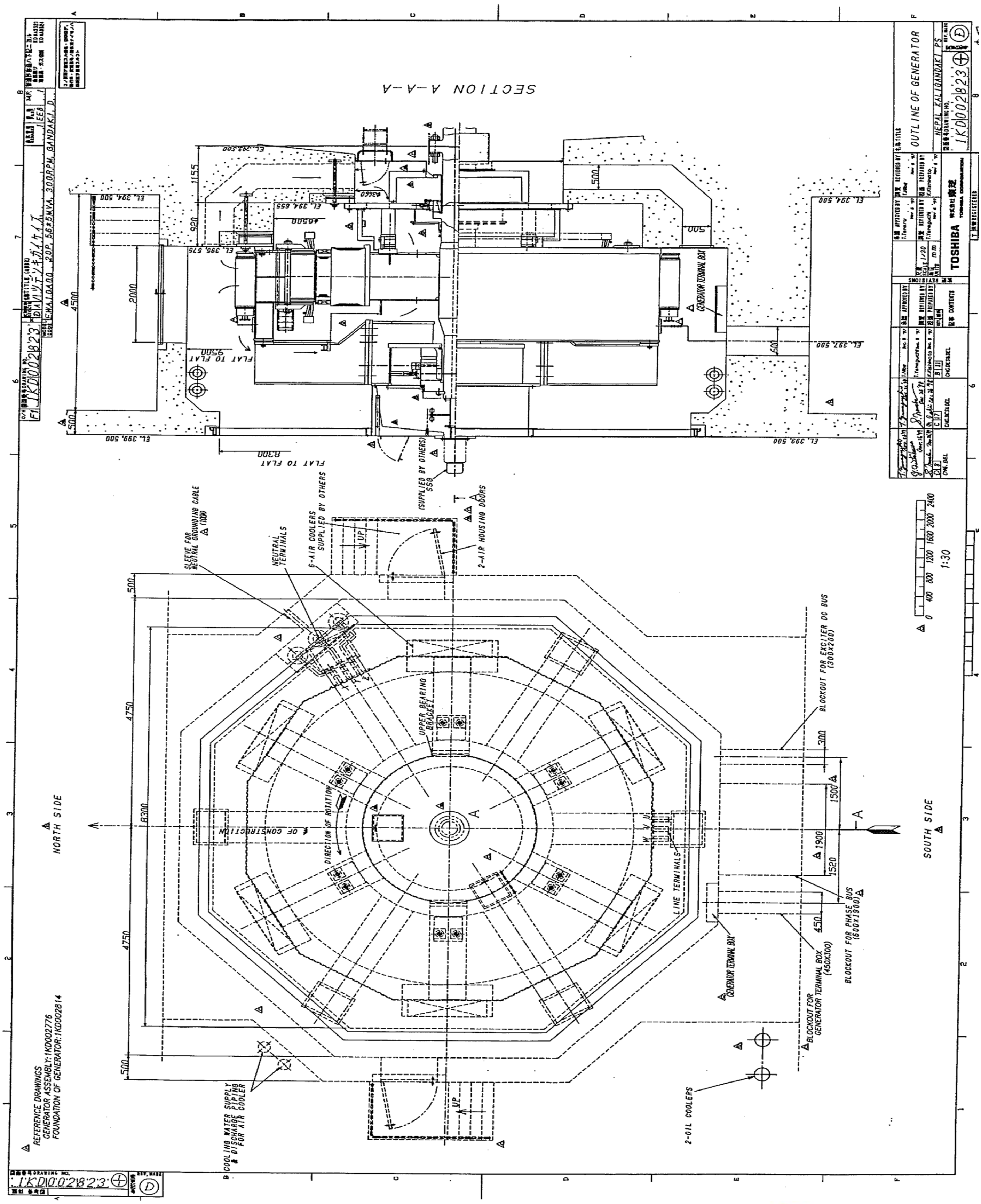
図面番号 DRAWING NO. 3KD002436 変更記号 REV. MARK A

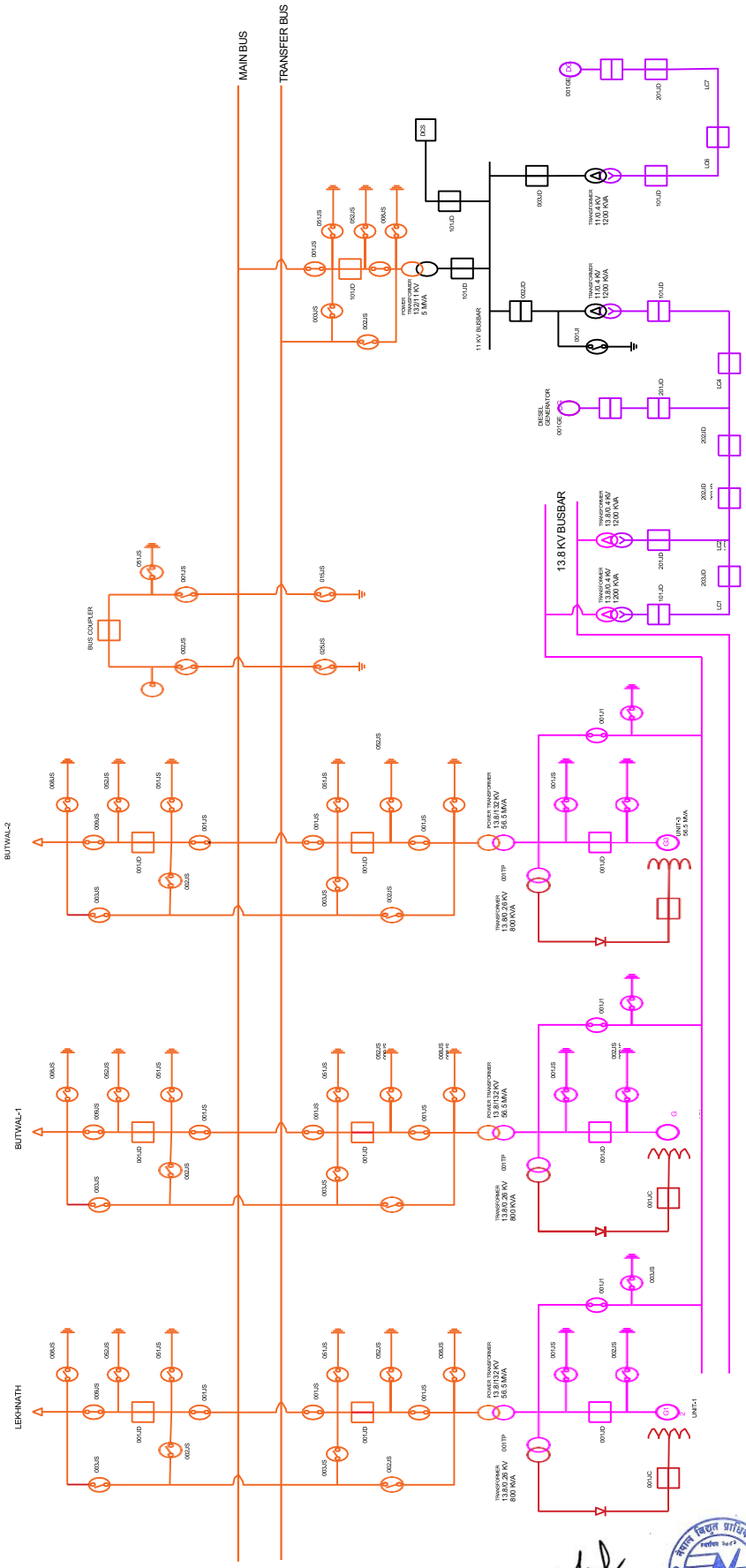
T 保管 REGISTERED

図面番号 DRAWING NO. 3KD002436 · 参考図 REV. MARK A



STATOR CORE PUNCHING
DRAWING NO. 2KD002594
EWB20D00 20P. 56.5MVA 300RPM GANDAKI D.
REMARKS
1. NUMBER OF CORE SEGMENT : 18
2. NUMBER OF SLOT/SEGMENT : 10
3. TOTAL SLOT NUMBER : 180
4. MATERIAL : SILICON STEEL PLATE : t0.5
EQUIVALENT TO JIS C2552 50A290 (OUR STANDARD)
5. BUR GRINDING OF CUTTING SURFACE LESS THAN 0.05mm
6. VARNISH COATING TO BE DONE AFTER PUNCHING (BOTH SURFACE)
7. NUMBER OF PUNCHING PLATE : 33,480
COLLECTOR SIDE
COUPLING SIDE
℄ OF CORE
ϕ5990
ϕ5900
ϕ5050
550
550
1100
SCALE 1:6
R2950
R2525
425
0.4
1024.52
876.92
463.36
CHORD 88.135
20°
5°
2°
SCALE 1:5
DETAIL 'A'
SCALE 1:1
57.6
60°
SLOT DIMENSION AFTER STACKING
SCALE 1:2
134
21.2
ADD. DIMENSION
CHG. DESCR.
TOSHIBA CORPORATION


SECTION A-A-A
OUTLINE OF GENERATOR
NEPAL KALIGANDAKI PS
1KD002823
TOSHIBA
NORTH SIDE
SOUTH SIDE
UPPER BEARING BRACKET
DIRECTION OF ROTATION
LINE TERMINALS
NEUTRAL TERMINALS
6-AIR COOLERS SUPPLIED BY OTHERS
2-AIR HOUSING DOORS
2-OIL COOLERS
GENERATOR TERMINAL BOX
BLOCKOUT FOR EXCITER DC BUS (300X200)
BLOCKOUT FOR PHASE BUS (600X1900)
BLOCKOUT FOR GENERATOR TERMINAL BOX (450X300)
SLEEVE FOR NEUTRAL GROUNDING CABLE
COOLING WATER SUPPLY & DISCHARGE PIPING FOR AIR COOLER
REFERENCE DRAWINGS
GENERATOR ASSEMBLY:1KD002776
FOUNDATION OF GENERATOR:1KD002814
1:30


MAIN BUS
TRANSFER BUS
13.8 KV BUSBAR
11 KV BUSBAR
BUS COUPLER
BUTWAL-2
BUTWAL-1
LEKHNATH
SINGLE LINE DIAGRAM OF KALIGANDAKI HYDROPOWER


Top coil


Bottom Coil

Inspection and Test

The following inspections and tests shall be performed as per IEC/IEEE/JIS or equivalent international standards.

i. The qulity requirement of technical specifications

ii. Factory Acceptance Test

Stage I: - Material Conformity Test

The Bidder/Manufacturer, upon receipt of materials at the factory before the start of manufacturing process, shall perform the following material conformity tests, with these tests to be witnessed for seven (7) days by Three (3) NEA Representatives **at an accredited Third-Party laboratory**:

1. Material Inspection:

- Visual and Dimensional Inspection of Raw Materials (Copper, Insulation)
- Dimensional test shall be followed by Resistance to deterioration test, Resistance to softening test, Resistance to reagent test, Resistance to oil test, Resistance to heat shock test, Elongation in 250 mm (%) test, Tensile Strength (Mpa) test, Edge wise bending test, Dielectric breakdown voltage test, solvent proof test etc.

2. Copper Conductor Test:

- Test Report of Copper Contents in Conductor (i.e., conductivity of the conductor at 20°C in %)

3. Manufacturing Process Inspection:

- Inspection of Winding Formation, Insulation Application, and Curing Processes at the manufacturing plant.

Stage II: - Factory Acceptance Test (FAT)

The Bidder/Manufacturer shall conduct the following electrical property verification tests on the manufactured stator bars/coils after production completion but prior to shipment, with these second-stage tests to be witnessed for seven (7) days by Three (3) NEA Engineers during pre-dispatch stage for each set, **along with at least one (1) representative from an accredited Third-Party agency/laboratory** present to ensure full compliance with specified electrical performance requirements:

1. Dimensional Inspection of Finished Bars/Coils:

- Measurement of Dimensions and Tolerances of Stator Bars/Coils.

2. Insulation Resistance (IR) and Polarization Index (PI):

- Insulation Resistance (IR) Testing of Individual Bars/Coils shall be minimum value of IR 1 minute is 200 MΩ and PI 10/1 minute is 2.5

3. AC High Voltage withstand Test:

- A voltage of (2*Un + 1) KV shall be applied for 1 minute between coil terminals and earth. There shall be no voltage breakdown during this sequence.

4. AC HV test on coils/bars overhang portion:

- There shall be no voltage breakdown at 1.5 * (Un + 1) for 30 seconds duration, 10% of total coils/bars.

5. Tan delta test:

These measurements provide insights into the condition of the insulation system.

- Measure tan δ tip-up ($\Delta\tan\delta \leq 5\times10^{-3}$) (IEC 60034-27-2).

6. Partial Discharge (PD) Test:
This test detects and measures partial discharges, which are indicators of insulation degradation.

- Partial Discharge (PD) Testing of Individual Bars/Coils.

7. Visual Inspection of Finished Bars/Coils:

- Final Visual Inspection for Surface Defects and Mechanical Integrity.

8. DC Overvoltage Test of Bars/Coils:

- This test is another method for evaluating insulation strength in case AC is unavailable.

9. Winding Resistance Measurement of Bars/Coils:

- This measurement verifies the electrical continuity and condition of the winding.

10. Thermal Cycling test - IEEE 1310-20/ IEEE 1310-201212:

- The coils/bars temperature rise from 40°C to 150° C and cooling from 150°C to 40°C for required number cycles as per IEEE standards.

11. Voltage Endurance Test - IEEE 1043-1996 & Pass/Fail Criteria IEEE - 1553:

- The Voltage endurance test shall be performed on the coils/bars with table below as per IEEE standards for 13.8 kV. The number of specimens for voltage endurance test shall be at least two bars/coils, but not more than 1% of the total bars/coils in the winding.

And all other required test as per JIS/IEEE/IEC-60034 Standards.

iii. Site Acceptance test before Start-Up (Pre-commissioning checks after installation)

Before the generator is put into normal operation, tests are carried out by the Contractor in the presence of the Purchaser and/or the Engineer to determine whether the Stator Windings meet the guarantees and other technical requirements set forth in the Contract Documents. The site tests include but are not necessarily restricted to those specified hereunder:

ww. No-Load Losses at Unity Power Factor
  i. Iron losses and excitation current verification (IEC 60034-2).

xx. Direction of Rotation
  i. Confirm correct rotation direction.

yy. Phase Sequence
  i. Verify phase sequence (R-Y-B or equivalent).

zz. No-Load Characteristic (Open-Circuit Test)
  i. Plot excitation current vs. terminal voltage at rated speed (IEC 60034-4).

aaa. Short-Circuit Characteristic
  i. Plot excitation current vs. stator current under short-circuit.

bbb. Sudden Three-Phase Short-Circuit Test
  i. Verify transient response (peak current ≤ 21× rated current).

ccc. Total, Harmonic Distortion (THD) Test
  i. Ensure THD ≤ 5% at rated voltage (IEC 60034-1, 9.11).

ddd. Form and Symmetry of Voltage and Currents
  i. Negative sequence current tolerance (IEC 60034-1: $I2/IN \leq 0.08$, $(I2/IN)^2 \cdot t \leq 20$).

eee. No-Load Saturation Test
  i. Measure iron losses (Pfe) and friction/windage losses (Pfw) (IEC 60034-2-1).

fff. Sustained Short-Circuit Test
- i. Determine short-circuit losses (Pk) (IEC 60034-2-1).

ggg. Zero Power-Factor Test
- i. Measure over-excitation losses (IEC 60034-2-1).

hhh. Negative Sequence Current Withstand
- i. Verify unbalanced load handling (IEC 60034-1, 7.2.3).

iii. Dielectric Dissipation Factor (tan δ)
- i. Measure tan δ tip-up ($\Delta\tan\delta \leq 5\times10^{-3}$) (IEC 60034-27-2) (Repeated at site).

jjj. Insulation Resistance (IR) & Polarization Index (PI)
- i. Measure IR at 1 min (Ri1) and 10 min (Ri10); PI = Ri10/Ri1 (IEC 60034-27-4) (Repeated at site).

kkk. Partial Discharge (PD) Test (if applicable)
- i. Verify PD levels at rated voltage (IEC 60034-27-3) (Repeated at site).

lll. Shaft Voltage & Bearing Current Measurement
- i. Check for harmful circulating currents.

mmm. Air gap measurement
- i. Assure the required air gap in the generator
- ii. at minimum twelve (12) equidistant points of the generator (should be within +-1% tolerance)

nnn. Resistance measurements of generator windings
- i. stator and rotor winding resistance are measured to ensure the electrical properties.

ooo. On-Site Withstand Voltage Test
- i. 80% of factory test voltage (e.g., 22.9 kV rms for AC Hi-Pot).

ppp. Auxiliaries and Accessories Testing
- i. Individual tests for LV/HV auxiliaries (test voltage ≥ 2,000 V for LV).

qqq. Deformation checks of generator stator

rrr. Clearance checks of main bearings

sss. Center alignment checks of generator with turbine

ttt. Insulation Resistance Measurement of Rotor

uuu. Field coil voltage balance check

The contractor shall ensure that installation, testing and commissioning of 56.5 MVA Synchronous Generator Stator Bars / Stator Windings shall be carried out under the supervision/consolation of the Generator manufacturers provided manual/procedure. The commissioning report shall be signed by the contractor's representative.

S.No.	**Stage of Testing**	**Electrical Test**	**Resin Rich, Mica Tape and Vacuum treated Bars**
1	**Test on Individual Bars**	Tan delta and capacitance measurement with guard electrodes	The tan delta measurement carried out as per IEC 60034
		Surface Resistance Measurement	Surface resistance measurement shall be

			carried out on slot portion conducting tape
		Insulation resistance test	IR for 1 minute at specified Voltage
		AC high voltage test	As per IEC 60034
		Insulation resistance test	IR for 1 minute at specified Voltage
2	**Test before stator connection (after bars insertion in wound stator)**	Insulation resistance test	IR at 1 minute and 10 minutes
		AC high voltage test	As per IEC 60034
		Insulation resistance	IR at 1 minute
		RTD's high voltage AC	As per IEC 60034
		RTD's resistance	Record the resistance of all RTD's
3	**Test after stator connection with cables**	Winding resistance	Resistance per phases at room temperature
		Insulation resistance test	IR at 1 minute and 10 minutes.
		AC high voltage test	As per IEC 60034
		Insulation resistance	IR at 1 minute
		Tan delta and capacitance measurement	The tan delta measurement carried out as per IEC 60034
		RTD's resistance	Record the resistance of all RTD's

Test that shall be performed during Pre-commissioning or Dry Test

S.No.	Pre-Commissioning Test (Dry Test)	Remarks
1	Resistance Temperature Detector (R.T.D.s)	Required
2	Dial Thermometer	Not Required
3	Water flow indicator/Oil flow indicator	Not Required
4	Brake and Jack Test as Mechanical Brake	Not Required
5	Current Transformer	Required
6	Space Heater	Not Required
7	Limit Switch for Rotor Protection	Not Required
8	Oil Jack Test	Not Required
9	Shaft Current Transformer	Not Required
10	Winding Resistance Measurement	Required

11	Insulation Resistance Test for Stator and Rotor	Required

iv. Site Tests During Commissioning (Final verification under operational conditions)

The following tests are made on the generator only, provided that the above-mentioned tests have verified that the generator characteristics are practically identical with the commissioning report:

vvv. Load Rejection Test
  i. Verify transient response during sudden load removal.
www. Phase Sequence (Recheck under load)
xxx. Direction of Rotation (Recheck under load)
yyy. Partial Discharge (PD) Test
  i. Optional, if PD monitoring is installed
zzz. Auxiliaries and Accessories
  i. Functional tests under actual operating conditions.
aaaa. Stator Slot Wedge Tightness Inspection: This inspection ensures the mechanical stability of the stator winding.

Test that shall be performed during Commissioning or Wet Test

S.No.	Commissioning Test (Wet Test)	Remarks
1	Initial running test	Required
2	Bearing heat run test	Required
3	Over speed test	Required
4	Three-phase short circuit saturation test	Required
5	No-Load saturation test	Required
6	Vibration measurement	Required
7	Shaft-Voltage test	Required
8	Heat run test	Required

These tests shall be done and matched with the exiting data of NEA after Stator Rewinding. The Purchaser has the right to decide which of the generators is subject to the above tests. If the generator fails to meet the technical requirements as a result of the test, similar tests are carried out on one of the remaining generators free of charge.

(Section VI)
General Conditions of Contract

Section VI. General Conditions of Contract
Table of Clauses

Section VI. General Conditions of Contract

1. Definitions

1.1. The following words and expressions shall have the meanings hereby assigned to them:

(a) "Contract" means the Agreement entered into between the Purchaser and the Supplier, together with the Contract Documents referred to therein, including all attachments, appendices, and all documents incorporated by reference therein.

(b) "Contract Documents" means the documents listed in the Agreement, including any amendments thereto.

(c) "Contract Price" means the price payable to the Supplier as specified in the Agreement, subject to such additions and adjustments thereto or deductions there from, as may be made pursuant to the Contract.

(d) "Day" means calendar day.

(e) "Delivery" means the transfer of the Goods from the Supplier to the Purchaser in accordance with the terms and conditions set forth in the Contract.

(f) "Completion" means the fulfillment of the Related Services by the Supplier in accordance with the terms and conditions set forth in the Contract.

(g) "GCC" means the General Conditions of Contract.

(h) "Goods" means all of the commodities, raw material, machinery and equipment, and/or other materials that the Supplier is required to supply to the Purchaser under the Contract.

(i) "Purchaser's Country" is the country specified in the Special Conditions of Contract (SCC).

(j) "Purchaser" means the entity purchasing the Goods and Related Services, as specified in the SCC.

(k) "Related Services" means the services incidental to the supply of the goods, such as insurance, installation, training and initial maintenance and other similar obligations of the Supplier under the Contract.

(l) "SCC" means the Special Conditions of Contract.

(m) "Subcontractor" means any natural person, private or government entity, or a combination of the above, including its legal successors or permitted assigns, to whom any part of the Goods to be supplied or execution of any part of the Related Services is subcontracted by the Supplier.

(n) "Supplier" means the natural person, private or government entity, or a combination of the above, whose bid to perform the Contract has been accepted by the Purchaser and is named as such in the Agreement, and includes the legal successors or permitted assigns of the Supplier.

(o) "GoN" means the Government of Nepal.

(p) "The Site," where applicable, means the place named in the SCC.

2. Contract Documents

2.3 Subject to the order of precedence set forth in the Agreement, all documents forming the Contract (and all parts thereof) are intended to be correlative, complementary, and mutually explanatory.

3. Fraud and Corruption

3.1 If the Purchaser determines that the Supplier has engaged in corrupt, fraudulent, collusive, coercive or obstructive practices, in competing for or in executing the Contract, then the Purchaser may, after giving 14 days notice to the Supplier, terminate the Supplier's employment under the Contract and the provisions of GCC Clause 34.1 shall apply.

For the purposes of this Sub-Clause:

(i) "corrupt practice" is the offering, giving, receiving or soliciting, directly or indirectly, of anything of value to influence improperly the actions of another party;

(ii) "fraudulent practice"6 is any act or omission, including a misrepresentation, that knowingly or recklessly misleads, or attempts to mislead, a party to obtain a financial or other benefit or to avoid an obligation;

(iii) "collusive practice"7 is an arrangement between two or more parties designed to achieve an improper purpose, including to influence improperly the actions of another party;

(iv) "coercive practice"8 is impairing or harming, or threatening to impair or harm, directly or indirectly, any party or the property of the party to influence improperly the actions of a party;

(v) "obstructive practice" is

(aa) deliberately destroying, falsifying, altering or concealing of evidence material to the investigation or making false

---

6 a "party" refers to a public official; the terms "benefit" and "obligation" relate to the procurement process or contract execution; and the "act or omission" is intended to influence the procurement process or contract execution.

7 "parties" refers to participants in the procurement process (including public officials) attempting to establish bid prices at artificial, non competitive levels.

8 a "party" refers to a participant in the procurement process or contract execution.

statements to investigators in order to materially impede a GoN/DP investigation into allegations of a corrupt, fraudulent, coercive or collusive practice; and/or threatening, harassing or intimidating any party to prevent it from disclosing its knowledge of matters relevant to the investigation or from pursuing the investigation; or

(bb) acts intended to materially impede the exercise of the GoN/DP's inspection and audit rights provided for under ITB Clause 3.5 and GCC Clause 25.

3.2 Without prejudice to any other rights of the Purchaser under this Contract, on the recommendation of the Purchaser, Public Procurement Monitoring Office may **blacklist** a Bidder/Supplier for its conduct for a period of one (1) to three (3) years on the following grounds and seriousness of the act committed by the bidder:

(a) if it is established that the Supplier committed acts specified in ITB 3.2,

(b) if it is established later that the Bidder has committed substantial defect in implementation of the contract or has not substantially fulfilled its obligations under the contract or the completed work is not of the specified quality as per the contract.

3.3 Incase of DP funded bid, DP:

(a) will cancel the portion of the loan allocated to a contract if it determines at any time that representatives of the Borrower or of a beneficiary of the loan engaged in corrupt, fraudulent, collusive or coercive practices during the procurement or the execution of that contract, without the Borrower having taken timely and appropriate action satisfactory to the Bank to remedy the situation;

(b) will sanction a firm or individual, including declaring them ineligible, either indefinitely or for a stated period of time, to be awarded a Bank-financed contract if it at any time determines that they have, directly or through an agent, engaged, in corrupt, fraudulent, collusive or coercive practices in competing for, or in executing, a Bank-financed contract; and

(c) will have the right to require that Suppliers to permit the Bank to inspect their accounts and records and other documents relating to the bid submission and contract performance and to have them audited by auditors appointed by the Bank.

4. Interpretation

4.1 If the context so requires it, singular means plural and vice versa.

4.2 Incoterms

(a) The meaning of any trade term and the rights and obligations of parties thereunder shall be as prescribed by Incoterms.

(b) EXW, CIF, CIP, and other similar terms, shall be governed by the rules prescribed in the current edition of Incoterms, published by the International Chamber of Commerce at the date of the Invitation for Bids or **as specified in the SCC**.

4.3 Entire Agreement

The Contract constitutes the entire agreement between the Purchaser and the Supplier and supersedes all communications, negotiations and agreements (whether written or oral) of parties with respect thereto made prior to the date of Contract.

4.4 Amendment

No amendment or other variation of the Contract shall be valid unless it is in writing, is dated, expressly refers to the Contract, and is signed by a duly authorized representative of each party thereto.

4.5 Nonwaiver

(a) Subject to GCC Sub-Clause 4.5(b) below, no relaxation, forbearance, delay, or indulgence by either party in enforcing any of the terms and conditions of the Contract or the granting of time by either party to the other shall prejudice, affect, or restrict the rights of that party under the Contract, neither shall any waiver by either party of any breach of Contract operate as waiver of any subsequent or continuing breach of Contract.

(b) Any waiver of a party's rights, powers, or remedies under the Contract must be in writing, dated, and signed by an authorized representative of the party granting such waiver, and must specify the right and the extent to which it is being waived.

4.6 Severability

If any provision or condition of the Contract is prohibited or rendered invalid or unenforceable, such prohibition, invalidity or unenforceability shall not affect the validity or enforceability of any other provisions and conditions of the Contract.

5. Language

5.1 The Contract as well as all correspondence and documents relating to the Contract exchanged by the Supplier and the

Purchaser, shall be written in the language **specified in the SCC**. Supporting documents and printed literature that are part of the Contract may be in another language provided they are accompanied by an accurate translation of the relevant passages in the language specified in the SCC, in which case, for purposes of interpretation of the Contract, this translation shall govern.

5.2 The Supplier shall bear all costs of translation to the governing language and all risks of the accuracy of such translation.

6. Joint Venture, Consortium or Association

6.1 If the Supplier is a joint venture, consortium, or association, all of the parties shall be jointly and severally liable to the Purchaser for the fulfillment of the provisions of the Contract and shall designate one party to act as a leader with authority to bind the joint venture, consortium, or association. A bidder can submit only one bid either as a partner of the joint venture or individually. The composition or the constitution of the joint venture, consortium, or association shall not be altered without the prior consent of the Purchaser.

6.2 The contractor shall not handover the responsibility of the contract to any one member or some members of Joint Venture or any other parties, not involved in the contract.

7. Notices

7.1 Any Notice given by one party to the other pursuant to the Contract shall be in writing to the address **specified in the SCC**. The term "in writing" means communicated in written form with proof of receipt.

7.2 A Notice shall be effective when delivered or on the Notice's effective date, whichever is later.

8. Governing Law

8.1 The Contract shall be governed by and interpreted in accordance with the laws of Nepal.

9. Settlement of Disputes

9.1 The Purchaser and the Supplier shall make every effort to settle amicably by direct negotiation any disagreement or dispute arising between them under or in connection with the Contract.

9.2 Any dispute between the Parties as to matters arising pursuant to this Contract which cannot be settled amicably within thirty (30) days after receipt by one Party of the other Party's request for such amicable settlement may be referred to Arbitration within 30 days after the expiration of amicable settlement period as specified in SCC.

10. Scope of Supply

10.1 Subject to the SCC, the Goods and Related Services to be supplied shall be as specified in Section V, Schedule of Requirements.

10.2 Unless otherwise stipulated in the Contract, the Scope of Supply shall include all such items not specifically mentioned in the Contract but that can be reasonably inferred from the Contract as being required for attaining Delivery and Completion of the Goods and Related Services as if such items were expressly mentioned in the Contract.

11. Delivery

11.1 Subject to GCC Sub-Clause 32.1, the Delivery of the Goods and Completion of the Related Services shall be in accordance with the Delivery and Completion Schedule specified in the Section V, Schedule of Requirements. The details of documents to be furnished by the Supplier are **specified in the SCC**.

12. Supplier's Responsibilities

12.1 The Supplier shall supply all the Goods and Related Services included in the Scope of Supply in accordance with GCC Clause 10, and the Delivery and Completion Schedule, as per GCC Clause 11.

13. Purchaser's Responsibilities

13.1 Whenever the supply of Goods and Related Services requires that the Supplier obtain permits, approvals, and import and other licenses from public authorities in Nepal, the Purchaser shall, if so required by the Supplier, make its best effort to assist the Supplier in complying with such requirements in a timely and expeditious manner.

13.2 The Purchaser shall pay all costs involved in the performance of its responsibilities, in accordance with GCC Sub-Clause 13.1.

14. Contract Price

14.1 The Contract Price shall be as specified in the Agreement subject to any additions and adjustments thereto, or deductions there from, as may be made pursuant to the Contract.

14.2 Prices charged by the Supplier for the Goods delivered and the Related Services performed under the Contract shall not vary from the prices quoted by the Supplier in its bid, with the exception of any price adjustments authorized in the SCC.

15. Terms of Payment

15.1 The Contract Price shall be paid **as specified in SCC**.

15.2 The Supplier's request for payment shall be made to the Purchaser in writing, accompanied by invoices describing, as appropriate, the Goods delivered and Related Services performed, and by the documents submitted pursuant to GCC

Clause 11.1 and upon fulfillment of all the obligations stipulated in the Contract.

15.3 Unless otherwise specified in the SCC, the Purchaser shall retain from each payment due to the Contractor the proportion stated in the SCC. Half of the total amount retained shall be repaid to the Supplier not later than thirty (30) days following the date of completion of the Supplier's performance obligations under the Contract, including any warranty obligations and half when the supplier has submitted the evidence of submission of tax return to the concerned Internal Revenue Office.

15.4 Payments shall be made promptly by the Purchaser, no later than thirty (30) days after submission of an invoice or request for payment by the Supplier, and the Purchaser has accepted it.

15.5 The currency or currencies in which payments shall be made to the Supplier under this Contract shall be as specified in the SCC.

15.6 In the event that the Purchaser fails to pay the Supplier any payment by its due date or within the period set forth in the GCC 15.4, the Purchaser shall pay to the Supplier interest on the amount of such delayed payment at the rate shown in the SCC, for the period of delay until due payment has been made.

16. Taxes and Duties

16.1 For goods supplied from outside Nepal, the Supplier shall be entirely responsible for all taxes, stamp duties, license fees, and other such levies imposed outside Nepal. However, Tax deduction at source shall be applied as per taxation laws of Nepal.

16.2 For goods supplied from within the Nepal, the Supplier shall be entirely responsible for all taxes, duties, license fees, etc., incurred until delivery of the contracted Goods to the Purchaser. Tax deduction at source shall be applied as per taxation law of Nepal.

16.3 If any tax exemptions, reductions, allowances or privileges may be available to the Supplier in Nepal, the Purchaser shall use its best efforts to enable the Supplier to benefit from any such tax savings to the maximum allowable extent.

17. Performance Security

17.1 The Supplier shall, within fifteen (15) days of the receipt of notification of Contract award, provide a Performance Security for the due performance of the Contract in the amounts and currencies specified in the SCC.

17.2 The proceeds of the Performance Security shall be payable to the Purchaser as compensation for any loss resulting from the Supplier's failure to complete its obligations under the Contract.

17.3 The Performance Security shall be denominated in the currency of the Contract, or in a freely convertible currency acceptable to the Purchaser, and shall be in one of the forms stipulated by the Purchaser in the SCC, or in another form acceptable to the Purchaser.

17.4 The Performance Security shall be discharged by the Purchaser and returned to the Supplier not later than thirty (30) days following the date of completion of the Supplier's performance obligations under the Contract, including any warranty obligations.

18. Copyright

18.1 The copyright in all drawings, documents, and other materials containing data and information furnished to the Purchaser by the Supplier herein shall remain vested in the Supplier, or, if they are furnished to the Purchaser directly or through the Supplier by any third party, including suppliers of materials, the copyright in such materials shall remain vested in such third party.

19. Confidential Information

19.1 The Purchaser and the Supplier shall keep confidential and shall not, without the written consent of the other party hereto, divulge to any third party any documents, data, or other information furnished directly or indirectly by the other party hereto in connection with the Contract, whether such information has been furnished prior to, during or following completion or termination of the Contract. Notwithstanding the above, the Supplier may furnish to its Subcontractor such documents, data, and other information it receives from the Purchaser to the extent required for the Subcontractor to perform its work under the Contract, in which event the Supplier shall obtain from such Subcontractor an undertaking of confidentiality similar to that imposed on the Supplier under GCC Clause 19.

19.2 The Purchaser shall not use such documents, data, and other information received from the Supplier for any purposes unrelated to the Contract. Similarly, the Supplier shall not use such documents, data, and other information received from the Purchaser for any purpose other than the design, procurement, or other work and services required for the performance of the Contract.

19.3 The obligation of a party under GCC Sub-Clauses 19.1 and 19.2 above, however, shall not apply to information that:

(a) the Purchaser or Supplier need to share with the Donor for Donor funded project or other institutions participating in the financing of the Contract;

(b) now or hereafter enters the public domain through no fault of that party;

(c) can be proven to have been possessed by that party at the time of disclosure and which was not previously obtained, directly or indirectly, from the other party; or

(d) otherwise lawfully becomes available to that party from a third party that has no obligation of confidentiality.

19.4 The above provisions of GCC Clause 19 shall not in any way modify any undertaking of confidentiality given by either of the parties hereto prior to the date of the Contract in respect of the Supply or any part thereof.

19.5 The provisions of GCC Clause 19 shall survive completion or termination, for whatever reason, of the Contract.

20. Subcontracting

20.1 The Supplier shall notify the Purchaser in writing of all subcontracts awarded under the Contract if not already specified in the Bid. Subcontracting shall in no event relieve the Supplier from any of its obligations, duties, responsibilities, or liability under the Contract.

20.2 Subcontracts shall comply with the provisions of GCC Clauses 3.

21. Specifications and Standards

21.1 Technical Specifications and Drawings

(a) The Supplier shall ensure that the Goods and Related Services comply with the technical specifications and other provisions of the Contract.

(b) The Supplier shall be entitled to disclaim responsibility for any design, data, drawing, specification or other document, or any modification thereof provided or designed by or on behalf of the Purchaser, by giving a notice of such disclaimer to the Purchaser.

(c) The Goods and Related Services supplied under this Contract shall conform to the standards mentioned in Section V, Schedule of Requirements and, when no applicable standard is mentioned, the standard shall be equivalent or superior to the official standards whose application is appropriate to the country of origin of the Goods.

21.2 Wherever references are made in the Contract to codes and standards in accordance with which it shall be executed, the edition or the revised version of such codes and standards shall be those specified in the Section V, Schedule of Requirements. During Contract execution, any changes in any such codes and standards shall be applied only after approval by the Purchaser and shall be treated in accordance with GCC Clause 32.

22. Packing and Documents

22.1 The Supplier shall provide such packing of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in the Contract. During transit, the packing shall be sufficient to withstand, without limitation, rough handling and exposure to extreme temperatures, salt and precipitation, and open storage. Packing case size and weights shall take into consideration, where appropriate, the remoteness of the final destination of the Goods and the absence of heavy handling facilities at all points in transit.

22.2 The packing, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, specified in the SCC, and in any other instructions ordered by the Purchaser.

23. Insurance

23.1 Unless otherwise specified in the SCC, the Goods supplied under the Contract shall be fully insured, in a freely convertible currency from an eligible country, against loss or damage incidental to manufacture or acquisition, transportation, storage, and delivery, in accordance with the applicable Incoterms or in the manner specified in the SCC.

24. Transportation

24.1 Obligations for transportation of the Goods shall be in accordance with the Incoterms specified in Sections V, Schedule of Requirements.

25. Inspections and Tests

25.1 The Supplier shall at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are specified in Sections V, Schedule of Requirements.

25.2 The inspections and tests may be conducted on the premises of the Supplier or its Subcontractor, at point of delivery, and/or at the final destination of the Goods, or in another place in Nepal as specified in the SCC. Subject to GCC Sub-Clause 25.3, if conducted on the premises of the Supplier or its Subcontractor, all reasonable facilities and assistance,

including access to drawings and production data, shall be furnished to the inspectors at no charge to the Purchaser.

25.3 The Purchaser or its designated representative shall be entitled to attend the tests and/or inspections referred to in GCC Sub-Clause 25.2, provided that the Purchaser bear all of its own costs and expenses incurred in connection with such attendance including, but not limited to, all traveling and board and lodging expenses.

25.4 Whenever the Supplier is ready to carry out any such test and inspection, it shall give a reasonable advance notice, including the place and time, to the Purchaser. The Supplier shall obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.

25.5 The Purchaser may require the Supplier to carry out any test and/or inspection not required by the Contract but deemed necessary to verify that the characteristics and performance of the Goods comply with the technical specifications, codes and standards under the Contract, provided that the Supplier's reasonable costs and expenses incurred in the carrying out of such test and/or inspection shall be added to the Contract Price. Further, if such test and/or inspection impede the progress of manufacturing and/or the Supplier's performance of its other obligations under the Contract, due allowance will be made in respect of the Delivery Dates and Completion Dates and the other obligations so affected.

25.6 The Supplier shall provide the Purchaser with a report of the results of any such test and/or inspection.

25.7 The Purchaser may reject any Goods or any part thereof that fail to pass any test and/or inspection or do not conform to the specifications. The Supplier shall either rectify or replace such rejected Goods or parts thereof or make alterations necessary to meet the specifications at no cost to the Purchaser, and shall repeat the test and/or inspection, at no cost to the Purchaser, upon giving a notice pursuant to GCC Sub-Clause 25.4.

25.8 The Supplier agrees that neither the execution of a test and/or inspection of the Goods or any part thereof, nor the attendance by the Purchaser or its representative, nor the issue of any report pursuant to GCC Sub-Clause 25.6, shall release the Supplier from any warranties or other obligations under the Contract.

26. Liquidated Damages

26.1 Except as provided under GCC Clause 31, if the Supplier fails to deliver any or all of the Goods or perform the Related Services within the period specified in the Contract, the Purchaser may without prejudice to all its other remedies under the Contract, deduct from the Contract Price, as liquidated damages, a sum equivalent to the percentage specified in the SCC of the Contract Price for each day of delay until actual delivery or performance, up to a maximum deduction of the percentage specified in the SCC. Once the maximum is reached, the Purchaser may terminate the Contract pursuant to GCC Clause 34.

27. Warranty

27.1 The Supplier warrants that all the Goods are new, unused, and of the most recent or current models, and that they incorporate all recent improvements in design and materials, unless provided otherwise in the Contract.

27.2 Subject to GCC Sub-Clause 21.1, the Supplier further warrants that the Goods shall be free from defects arising from any act or omission of the Supplier or arising from design, materials, and workmanship, under normal use in the conditions prevailing in Nepal.

27.3 Unless otherwise specified in the SCC, the warranty shall remain valid for twelve (12) months after the Goods, or any portion thereof as the case may be, have been delivered to and accepted at the final destination indicated in the SCC.

27.4 The Purchaser shall give Notice to the Supplier stating the nature of any such defects together with all available evidence thereof, promptly following the discovery thereof. The Purchaser shall afford all reasonable opportunity for the Supplier to inspect such defects.

27.5 Upon receipt of such Notice, the Supplier shall, within the period specified in the SCC, expeditiously repair or replace the defective Goods or parts thereof, at no cost to the Purchaser.

27.6 If having been notified, the Supplier fails to remedy the defect within the period specified in the SCC, the Purchaser may proceed to take within a reasonable period such remedial action as may be necessary, at the Supplier's risk and expense and without prejudice to any other rights which the Purchaser may have against the Supplier under the Contract.

28. Patent Indemnity

28.1 The Supplier shall, subject to the Purchaser's compliance with GCC Sub-Clause 28.2, indemnify and hold harmless the

Purchaser and its employees and officers from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Purchaser may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at the date of the Contract by reason of:

(a) the installation of the Goods by the Supplier or the use of the Goods in the country where the Site is located; and

(b) the sale in any country of the products produced by the Goods.

Such indemnity shall not cover any use of the Goods or any part thereof other than for the purpose indicated by or to be reasonably inferred from the Contract, neither any infringement resulting from the use of the Goods or any part thereof, or any products produced thereby in association or combination with any other equipment, plant, or materials not supplied by the Supplier, pursuant to the Contract.

28.2 If any proceedings are brought or any claim is made against the Purchaser arising out of the matters referred to in GCC Sub-Clause 28.1, the Purchaser shall promptly give the Supplier a notice thereof, and the Supplier may at its own expense and in the Purchaser's name conduct such proceedings or claim and any negotiations for the settlement of any such proceedings or claim.

28.3 If the Supplier fails to notify the Purchaser within thirty (30) days after receipt of such notice that it intends to conduct any such proceedings or claim, then the Purchaser shall be free to conduct the same on its own behalf.

28.4 The Purchaser shall, at the Supplier's request, afford all available assistance to the Supplier in conducting such proceedings or claim, and shall be reimbursed by the Supplier for all reasonable expenses incurred in so doing.

28.5 The Purchaser shall indemnify and hold harmless the Supplier and its employees, officers, and Subcontractors from and against any and all suits, actions or administrative proceedings, claims, demands, losses, damages, costs, and expenses of any nature, including attorney's fees and expenses, which the Supplier may suffer as a result of any infringement or alleged infringement of any patent, utility model, registered design, trademark, copyright, or other intellectual property right registered or otherwise existing at

the date of the Contract arising out of or in connection with any design, data, drawing, specification, or other documents or materials provided or designed by or on behalf of the Purchaser.

29. Limitation of Liability

29.1 Except in cases of gross negligence or willful misconduct :

(a) neither party shall be liable to the other party for any indirect or consequential loss or damage, loss of use, loss of production, or loss of profits or interest costs, provided that this exclusion shall not apply to any obligation of the Supplier to pay liquidated damages to the Purchaser; and

(b) the aggregate liability of the Supplier to the Purchaser, whether under the Contract, in tort, or otherwise, shall not exceed 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 Supplier to indemnify the Purchaser with respect to patent infringement.

30. Change in Laws and Regulations

30.1 Unless otherwise specified in the Contract, if after the date of the Invitation for Bids, any law, regulation, ordinance, order or bylaw having the force of law is enacted, promulgated, abrogated, or changed in Nepal where the Site is located (which shall be deemed to include any change in interpretation or application by the competent authorities) that subsequently affects the Delivery Date and/or the Contract Price, then such Delivery Date and/or Contract Price shall be correspondingly increased or decreased, to the extent that the Supplier has thereby been affected in the performance of any of its obligations under the Contract. Notwithstanding the foregoing, such additional or reduced cost shall not be separately paid or credited if the same has already been accounted for in the price adjustment provisions where applicable, in accordance with GCC Clause 14.

31. Force Majeure

31.1 The Supplier shall not be liable for forfeiture of its Performance Security, liquidated damages, or termination for default if and to the extent that its delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure.

31.2 For purposes of this Clause, "Force Majeure" means an event or situation beyond the control of the Supplier that is not foreseeable, is unavoidable, and its origin is not due to negligence or lack of care on the part of the Supplier. Such events may include, but not be limited to, acts of the Purchaser in its sovereign capacity, wars or revolutions, fires,

floods, epidemics, quarantine restrictions, and freight embargoes.

31.3 If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such condition and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.

32. Change Orders and Contract Amendments

32.1 The Purchaser may at any time order the Supplier through Notice in accordance GCC Clause 7, to make changes within the general scope of the Contract in any one or more of the following:

(a) drawings, designs, or specifications, where Goods to be furnished under the Contract are to be specifically manufactured for the Purchaser;

(b) the method of shipment or packing;

(c) the place of delivery; and

(d) the Related Services to be provided by the Supplier.

32.2 If any such change causes an increase or decrease in the cost of, or the time required for, the Supplier's performance of any provisions under the Contract, an equitable adjustment shall be made in the Contract Price or in the Delivery and Completion Schedule, or both, and the Contract shall accordingly be amended. Any claims by the Supplier for adjustment under this Clause must be asserted within thirty (30) days from the date of the Supplier's receipt of the Purchaser's change order.

32.3 Prices to be charged by the Supplier for any Related Services that might be needed but which were not included in the Contract shall be agreed upon in advance by the parties and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services.

33. Extensions of Time

33.1 If at any time during performance of the Contract, the Supplier or its Subcontractors should encounter conditions impeding timely delivery of the Goods or completion of Related Services pursuant to GCC Clause 11, the Supplier shall promptly, and at least twenty one (21) days before the expiry of procurement contract, notify the Purchaser in writing of the delay, its likely duration, and its cause. As soon as practicable after receipt of the Supplier's notice, the Purchaser shall evaluate the situation and may at its discretion

extend the Supplier's time for performance, in which case the extension shall be ratified by the parties by amendment of the Contract.

33.2 Except in case of Force Majeure, as provided under GCC Clause 31, a delay by the Supplier in the performance of its Delivery and Completion obligations shall render the Supplier liable to the imposition of liquidated damages pursuant to GCC Clause 26, unless an extension of time is agreed upon, pursuant to GCC Sub-Clause 34.1.

34. Termination

34.1 Termination for Default

(a) The Purchaser, without prejudice to any other remedy for breach of Contract, by Notice of default sent to the Supplier, may terminate the Contract in whole or in part:

(i) if the Supplier fails to deliver any or all of the Goods within the period specified in the Contract, or within any extension thereof granted by the Purchaser pursuant to GCC Clause 33;

(ii) if the Supplier fails to perform any other obligation under the Contract.

(iii) The supplier uses the advance payment for matters other than the contarctual obligations.

(iv) The purchaser may terminate the contract at any time in the following condition.

(a) does not commence the work as per the contract,

(b) abandons the contract with out completing,

(c) fails to achieve progress as per the contract.

(b) In the event the Purchaser terminates the Contract in whole or in part, pursuant to GCC Clause 34.1(a), the Purchaser may procure, upon such terms and in such manner as it deems appropriate, Goods or Related Services similar to those undelivered or not performed, and the Supplier shall be liable to pay to the Purchaser for any whole costs for such similar Goods or Related Services. However, the Supplier shall continue performance of the Contract to the extent not terminated.

(c) if the Supplier, in the judgment of the Purchaser has engaged in corrupt, fraudulent, collusive, coercive or

obstructive practices, as defined in GCC Clause 3, in competing for or in executing the Contract

34.2 Termination for Insolvency

The Purchaser may at any time terminate the Contract by giving Notice to the Supplier if the Supplier becomes bankrupt or otherwise insolvent. In such event, termination will be without compensation to the Supplier, provided that such termination will not prejudice or affect any right of action or remedy that has accrued or will accrue thereafter to the Purchaser.

34.3 Termination for Convenience

(a) The Purchaser, by written Notice sent to the Supplier, may terminate the Contract, in whole or in part, at any time for its convenience. The Notice of termination shall specify that termination is for the Purchaser's convenience, the extent to which performance of the Supplier under the Contract is terminated, and the date upon which such termination becomes effective.

(b) The Goods that are complete and ready for shipment within seven (7) days after the Supplier's receipt of the Notice of termination shall be accepted by the Purchaser at the Contract terms and prices. For the remaining Goods, the Purchaser may elect:

(i) To have any portion completed and delivered at the Contract terms and prices; and/or

(ii) To cancel the remainder and pay to the Supplier an agreed amount for partially completed Goods and Related Services and for materials and parts previously procured by the Supplier.

35. Assignment

35.1 Neither the Purchaser nor the Supplier shall assign, in whole or in part, their obligations under this Contract, except with prior written consent of the other party.

(Section VII)
Special Conditions of Contract

Section VII. Special Conditions of Contract

The following Special Conditions of Contract (SCC) shall supplement the General Conditions of Contract (GCC). Whenever there is a conflict, the provisions herein shall prevail over those in the GCC.

GCC 1.1(i)	The Purchaser's country is: **Nepal**
GCC 1.1(j)	The Purchaser is: **Nepal Electricity Authority, Generation Directorate, Large Generation Operation and Maintenance Department, Kaligandaki 'A' Hydropower Station, Beltari, Syangja.**
GCC 1.1 (p)	The Site is: **Kaligandaki 'A' Hydropower Station, Beltari, Syangja, Gandaki Province, Nepal.**
GCC 4.2 (b)	The version of Incoterms shall be: **Incoterms 2020**
GCC 5.1	The language shall be: **English**
GCC 7.1	For **notices**, the Purchaser's address shall be: Name of the Purchaser: **NEPAL ELECTRICITY AUTHORITY, Generation Directorate** (**Kaligandaki 'A' Hydropower Station**) City/Town: **Durbar Marg** District: **Kathmandu** Country: **Nepal** E-mail: kaligandaki@nea.org.np, generation@nea.org.np Tel: 977-1-4153070 Fax.: 977-1-4153071 Mobile No.: +977-9856003147
	For **notices**, the Suppliers's address shall be: **[*insert full name and address of Suppliers including telephone number, facsimile number and electronic mail address (if applicable)]*** Name and Address of the Supplier: Telephone number: Facsimile number: e-mail Address:
GCC 9.2	In case of arbitration, the arbitration shall be conducted in accordance with the arbitration procedures in accordance with law of Nepal at **Kathmandu**

GCC 10.1	The Scope of Supply shall be defined in: **Section V, Schedule of Requirements.**
GCC 11.1	Details of shipping and documents to be furnished by the Supplier shall be: **"For Goods supplied from abroad as per Incoterms CIP:** Upon shipment, the Supplier shall notify the Purchaser and the Insurance Company by telex or fax the full details of the shipment, including Contract number, description of Goods, quantity, the vessel, the bill of lading number and date, port of loading, date of shipment, port of discharge, etc. The Supplier shall send the following documents to the Purchaser, with a copy to the Insurance Company: **a)** **Four (4)** copies of the Supplier's invoice showing the description of the Goods, quantity, unit price, and total amount; **b)** original and **Four (4)** copies of the negotiable, clean, on-board bill of lading marked "freight prepaid" and **Four (4)** copies of non-negotiable bill of lading; **c)** **Four (4)** copies of the packing list identifying contents of each package; **d)** insurance certificate; **e)** Manufacturer's or Supplier's warranty certificate; **f)** inspection certificate, issued by the nominated inspection agency, and the Supplier's factory inspection report; and **g)** certificate of origin. The Purchaser shall receive the above documents at least one week before arrival of the Goods at the port or place of arrival and, if not received, the Supplier will be responsible for any consequent expenses. For Goods from within the Purchaser's country as per Incoterm EXW: Upon delivery of the Goods to the transporter, the Supplier shall notify the Purchaser and send the following documents to the Purchaser: a) Copies of the Supplier's invoice showing the description of the Goods, quantity, unit price, and total amount; b) Copy of packing list indentifying the contents of each package; c) Delivery note, railway receipt, or truck receipt; d) Manufacturer's or Supplier's warranty certificate; e) Certificate of origin; and f) Inspection certificate issued by the nominated inspection agency, and the Supplier's factory inspection report; The Purchaser shall receive the above documents before the arrival of the Goods and, if not received, the Supplier will be responsible for any

	consequent expenses. **[Note: The above requirements should be reviewed on a case-by-case basis, with amendments being made as necessary]**
GCC 14.2	The prices charged for the Goods delivered and the Related Services to be performed shall be fixed for the duration of the contract.[9] or The prices charged for the Goods delivered and Related Services to be performed shall be subject to adjustment during performance of the Contract to reflect changes in the cost of labor and material components in accordance with the formula: $$\Delta P = P_0\left(a + b\frac{L_1}{L_0} + c\frac{M_1}{M_0}\right) - P_0$$ in which: ΔP = adjustment amount payable to the Supplier. P0 = Contract Price (base price). a = fixed element representing profits and overheads included in the Contract Price and generally in the range of five (5) to fifteen (15) percent. b = estimated percentage of labor component in the Contract Price. c = estimated percentage of material component in the Contract Price. L0, L1 = labor indices applicable to the appropriate industry in the country of origin on the base date and date for adjustment, respectively. M0, M1 = material indices for the major raw material on the base date and date for adjustment, respectively, in the country of origin. The coefficients a, b, and c shall be specified by the Purchaser in the bidding document. The sum of the three coefficients should be one (1) in every application of the formula. The Bidder shall indicate in its Bid, the source of the indices and the base dates for such indices. Base date = thirty (30) days prior to the deadline for submission of the Bids. Date of adjustment = ……***[insert number of days or weeks]*** prior to date of shipment (representing the mid-point of the period of manufacture).

[9] If duration of contract is less than 12 months price adjustment shall not be applicable

	The maximum amount of price adjustment to be made pursuant to this clause shall not generally be more than twenty five (25) percent of the initial contract prices.
GCC 15.1	The terms of payment to be made to the Supplier under the contract shall be as follows: The payment shall be made: i) through an irrevocable letter of credit opened in favour of the Supplier for Price Schedule (B) ii) through accounts division/unit of the Purchaser for the Price Schedule (A) and (D). Payments shall be made in the following manner: For the payment, the Purchaser shall open letter of credit within 30 days from the date of signature of the contract in favour of the Supplier at the bank nominated in this bid for the Total Contract Price for the Goods and Services (Foreign Components). **Price Schedule (A): Goods Manufactured in Nepal** In respect of Goods manufactured and supplied from within the Employer 's country, the following payments shall be made in NRs. only. i. Advance Payment (10%): of the total EXW amount as an advance payment against receipt of invoice and an irrevocable advance payment security for the equivalent amount made out in favor of the Employer. Advance payment shall be made in two installments: 1st Five Percent (5%) of the total amount shall be paid after signing of the contract and the second installment of Five Percent (5%) of the total amount shall be paid after submission and approval of Work Implementation Plan and Quality Assurance Plan/Quality Test Specifcations. ii. Sixty percent (60%) of the the total or pro-rata EXW amount upon delivery of upon the delivery of all Goods to the site and issuance of delivery acceptance certificate by the Employer. iii. Twenty-Five percent (25%) of the total Goods of the total or pro-rata EXW amount shall be paid upon issuance of the Final Acceptance Certificate from the Purchaser (issued after installation confirmation). iv. Five percent (5%) of of the total EXW amount upon completion will be withheld as retention amount which will be paid after completion of warranty obligations and upon submission of tax clearance certificate and upon completion of defect liability within Fourty-Five (45) days after receipt of invoice.

	Price Schedule (B): Goods Manufactured Outside Nepal, to be Imported In respect of Goods Manufactured Outside Nepal, to be Imported, the following payments shall be made in **quoted currency** only. **(a) Ten percent (10%)** of the total CIP amount as an advance payment against receipt of invoice and an irrevocable advance payment security for the equivalent amount made out in favor of the Employer. Advance payment shall be made in two installments: 1st Five Percent (5%) of the total amount shall be paid within sixty (60) days after signing of the contract and the second installment of Five Percent (5%) of the total amount shall be paid after submission and approval of Quality Assuarance Plan (QAP) within Fourty-Five (45) days of claim. **(b) Sixty Percent (60%)** of the total or pro rata CIP amount upon Incoterm ―CIP, upon delivery to the Project Site and after obtaining Delivery Acceptance Certificate within Fourty-Five (45) days after receipt of following invoice and documents through irrevocable letter of credit opened in favor of Contractor ‘s bank: i) Four (4) copies of contractor ‘s invoice certified by the Employer showing contract no. goods description, quantity, unit price and total amount. ii) Payment Authorization as per the specified format duly signed by the authorized official(s), designated by the government of Nepal to operate the Line of Credit. iii) Original and Four (4) copies of negotiable, clean, on-board bill of lading marked freight prepaid and Four (4) copies of non-negotiable bill of lading. iv) Four (4) copies of Detailed Packing list identify contents of each package. v) Insurance Policy/Certificate. vi) Manufacturer ‘s warranty certificate. vii) Dispatch authorization issued by the employer with the factory inspection report. viii) Certificate of origin ix) Delivery Completion Certificate issued by Employer

	(c) Twenty-Five percent (25%) of the total or pro rata CIP or amount upon issueance of the Unit Acceptance Certificate of each Generator Unit, within Fourty-Five (45) days after receipt of invoice. **(d) Five percent (5%)** of the total or pro rata CIP or amount upon completion of defect liability period of each Generator Unit after completion of supply, delivery installation, testing and commissioning of that particular Generator as per the contract, within Fourty-Five (45) days after receipt of invoice. **Price Schedule (D): Price and Completion Schedule – Services** The Local Services payments shall be made in NRs. only through accounts division/unit of the Purchaser. **(a) Ten percent (10%)** of the total amount for Local Services as an advance payment against receipt of invoice and an irrevocable advance payment security for the equivalent amount made out in favor of the Employer. Advance payment shall be made in two installments: 1st Five Percent (5%) of the total amount shall be paid after signing of the contract and the second installment of Five Percent (5%) of the total amount shall be paid after submission and approval of Design, Drawings, QAP, Work Plan i.e., on issuance of Design Approval Certifcate. **(b) Seventy-Five Percent (75%)** of the total or pro rata amount for Local Services will be paid to the Contractor upon completion of the installation, testing and commissioning works of the total stator windings after the recommendation of the NEA Engineers and upon issueance of the Unit Acceptance Certificate of each Generator Unit, within Fourty-Five (45) days after receipt of invoice. **(c) Ten percent (10%)** of the total amount for Local Services will be paid to the Contractor upon completion of installation, testing and commissioning of all two (2) Units, within the Fourty-Five (45) days of successful operation of 2nd Unit and upon issuance of Final Acceptance Certificate for Project from the Purchaser. **(d) Five percent (5%)** of the total amount for Local Services upon completion of defect liability period after completion of supply, delivery installation, testing and commissioning of that particular Generator as per the contract, within Fourty-Five (45) days after receipt of invoice. **Notes: -** **(a) The Tax Deduction at Source (TDS)** shall be applicable on payments as per prevailing laws/rules/regulations in Nepal. **(b)** Applicable taxes on total invoice amount shall be deducted as per prevailing rules in Nepal.

GCC 15.3	The proportion of payments retained is: **5 (five) percent as mentioned in GCC 15.1**
GCC 15.5	**The currencies for payments shall be: as quoted currency of the contract**
GCC 15.6	The interest rate that shall be applied for payment delay is: ***0 %***

GCC 16	**1. In the country of Origin** The prices bid by the Supplier shall include all taxes, duties and other charges imposed outside the Purchaser's country on the production, manufacture, sale and transport of the Contractor's Equipment, Plant, Materials and supplies to be used on or furnished under the Contract, and on the services performed under the Contract. Whatsoever provisions made in the Contract document shall not relieve the Contractor, its suppliers and subcontractors from their responsibility to pay income tax that may be levied in the Purchaser's country on profits made by the Supplier, its suppliers and subcontractors in respect of the Contract. **2.In Nepal** General: (a) Unless otherwise specifically declared in the contract documents, the prices bid by the Supplier and its suppliers and subcontractors shall include business taxes, Value Added Tax (VAT), Customs Duty and other taxes that may be levied in accordance with the laws and regulations in force or in effect in Nepal as of 30 days prior to the closing date for submission of tenders in the Purchaser's country on the Equipment, Plant, Materials and Supplies (permanent, temporary and consumables) acquired for the purpose of the Contract and on the services performed under the Contract. Whatsoever provisions made in the Contract document shall not relieve the Supplier, its suppliers and subcontractors from their responsibility to pay income tax that may be levied in the Purchaser's country on profits made by the Supplier, its suppliers and subcontractors in respect of the Contract. <u>Staff Income Tax:</u> The Supplier's staff, personnel and labourers, and those of its subcontractors, will be liable to pay personal income taxes in the Purchaser's country, irrespective of whether they are local or foreign nationals on income earned including salaries and wages as applicable under the laws and regulations of Nepal. The Supplier shall perform such duties in regard to Tax Deduction at Source (TDS) thereof as may be applicable by such laws and regulations. <u>Import License:</u> The Supplier shall inform the Purchaser and the Project Manager in writing the details of the equipment and materials to be imported into Nepal for use on the Works at least 60 days prior to arrival of shipment at disembarkation port, and shall submit a formal written request for assistance from the Purchaser for importation processing. The Purchaser will assist the Supplier to obtain necessary permits for import of such equipment and materials into Nepal. Import license fees or any other charges shall be at the cost of the Supplier.

	The Supplier shall be responsible for transport from the Port of disembarkation to the Site or location of the Works. The Supplier shall be fully responsible to determine these rates and the amount payable at the time of preparing tender document and include such costs in its bids. In failing to do so, the Purchaser shall not be liable to pay such costs and the Supplier shall pay such charges as local or any customs authorities en-route may impose, which will not be an eligible item for refund from the Purchaser. • 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 Supplier, its sub-Suppliers and nominated sub- Suppliers. An advance income tax as per the prevailing income Tax Act and Finance Act shall be deducted from the monthly progress payment of the Supplier. • The Supplier shall pay all duties, taxes, fees and contributions levied in Nepal in Nepalese Rupees as directed by the relevant governmental department or office, or any other local statutory agency or body in accordance with the relevant rules and regulations. • The provisions of this clause shall apply equally to foreign subcontractors or nominated subcontractors of the Supplier employed for the Works. • The Supplier and any foreign subcontractors or nominated subcontractors employed on the Works, if not already registered in Nepal, shall be required to get registered with the Inland Revenue Department (IRD) for the purpose of the Contract, which shall be undertaken within 30 days after signing of the Contract Agreement. The Supplier, sub-contractor or the nominated subcontractor shall submit certified copies of the Registration Certificate(s) to the Project Manager within 15 days of registration. • Other local fees and charges (toll taxes) shall be applied in accordance with the prevailing laws and regulations of Nepal. • Locally available goods, construction materials including fuel, lubricating oil, cement, timber, iron and steel goods, etc. shall be procured locally. All taxes for such goods procured from the local market shall be included in the Contract Rates and Prices and no reimbursement or payment in that respect shall be made to the Supplier.

GCC 17.1	The Supplier shall provide a Performance Security as follows: I. If bid price of the bidder selected for acceptance is up to 15 (fifteen) percent less than the approved cost estimate, the performance security amount shall be 5 (five) percent of the bid price. II. For the bid price of the bidder selected for acceptance is more than 15 (fifteen) percent below of the cost estimate, the performance security amount shall be determined as follows: **Performance Security Amount = [(0.85 x Cost Estimate –Bid Price) x 0.5] + 5% of Bid Price.** The Bid Price and Cost Estimate shall be exclusive of Value Added Tax. The Performance Security shall be valid for the period of **contract execution and defect liability period plus thirty (30) days.** **Performance security amount of contract price shall be released after the execution of Supply, Delivery, Installation, Testing and Commissioning of Stator Windings for 56.5 MVA Synchronous Generator and after completion of warranty period after all Works completion.** The performance security shall be forfeited, in case the Supplier fails to complete the contractual obligation and rectify the defects within warranty period.
GCC 17.3	**The types of acceptable Performance Securities are:** A bank guarantee issued by Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law located in Nepal or commercial bank located abroad, acceptable to the Purchaser, in the format included in Section VIII, Contract Forms. Performance Security issued by foreign Bank must be counter – guaranteed by Commercial Bank or Financial Institution eligible to issue Bank Guarantee as per prevailing Law in Nepal.
GCC 17.4	The performance security shall be valid for period covering entire contract execution period and any extension thereof, including warranty period of last commissioned Unit plus one month.
GCC 18.1	The Supplier shall provide free of cost to the Purchaser all the engineering data, drawing and descriptive materials submitted with the bid, in at least two (2) copies to form a part of the Contract immediately after Notification of Award.

GCC 22.2	The packing, marking, and documentation within and outside the packages shall be***: as mentioned in other sections of this bid document.***
GCC 23.1	The insurance coverage shall be in accordance with: *The Supplier must insure the Goods in an amount equal to 110 percent of the CIP or EXW price of the Goods from "Warehouse" to "Warehouse" on "All Risks" basis, including War Risks, Arson and Strikes."*
GCC 24.1	Obligations for transportation of the Goods shall be in accordance with: "The supplier is required under the contract to transport the Goods to a specified place of final destination within the purchaser's country, defined as the project site, transport to such place of destination in the Purchaser's country including insurance and storage, as shall be specified in the contract, shall be arranged by the supplier, and related costs shall be included in the contract price.
GCC 25.2	**Tests and Inspections specified in Section V, Schedule of Requirements.** The days for inspetion and number of NEA's inspectors shall be as follows: - **1st Inspection:** Stage 1 Inspection before manufacturing of coils of all Units - 7 days, 2 NEA's representatives to be performed at Third party accredited laboratory **2nd Inspection:** Inspection/Pre-dispatch Factory Acceptance Test of coils for first Set: 7 days, 2 NEA's representatives, 1 representative from Third Party accredited agency/laboratory **3rd Inspection:** Inspection/Pre-dispatch Factory Acceptance Test of coils for second Set: 7 days, 2 NEA's representatives, 1 representative from Third Party accredited agency/laboratory **4th Inspection:** Inspection/Pre-dispatch Factory Acceptance Test of coils for third Set: 7 days, 2 NEA's representatives, 1 representative from Third Party accredited agency/laboratory **Note:** • The required arrangement all tests/inspections shall be made by the Contractor. The contractor shall bear all the costs and expenses in connection with arrangement of inspection and testing purpose. The Contractor shall also cover the cost of third party accredieted laboratory and costs of third-party inspector. • All tests will be conducted in accordance with relevant IEEE and IEC standards. • Detailed test procedures and acceptance criteria will be provided in the approved Quality Assurance Plan (QAP). • The manufacturer shall provide all necessary test equipment and personnel. All test reports and certificates shall be provided to the employer.

GCC 26.1	The applicable rate of liquidated damages shall be: ***0.05 percent of the Contract Price per day*** Apart from the liquidated damages, the contractor is liable of **Penalty for generation loss** due to delay in execution of works during approved shutdown period and it shall be: **USD 2,500/- (Two Thousand Five Hundred US Dollars) per day**. *This amount represents a reasonable estimate of the losses incurred by the Employer due to the Contractor's delay during these critical shutdown periods, ensuring timely completion and minimizing operational disruption.*
GCC 26.1	The maximum amount of liquidated damages shall be: ***ten (10) percent of the Contract Price.*** The maximum amount of Penalty shall be: ***ten (10) percent of the Contract Price.*** The contract shall be terminated, if liquidated damages exceed 10 percent of the Contract Price and blacklisting process shall be initiated for the Supplier's failure to complete the contractual obligations.
GCC 27.3	The period of validity of the Warranty shall be: **Five (5) Calender years from date of issuance of acceptance certificate of Stator Winding replacement work of each Generator Unit.** For the purposes of the Warranty, the place of final destination shall be: **Kaligandaki 'A' Hydropower Station, Beltari, Syangja, Gandaki Province, Nepal.**
GCC 27.5 & 27.6	The Supplier shall correct any defects covered by the Warranty within: **30 Days** of being notified by the Purchaser of the occurrence of such defects

(Section VIII)
Contract Forms

Section VIII. Contract Forms
Table of Forms

Letter of Intent

[on letterhead paper of the Purchaser]

. . . . . ***date***. . . . . .

Notes on Letter of Intent

The issuance of Letter of Intent is the information of the selection of the bid of the successful bidder by the Purchaser and for providing information to other unsuccessful bidders who participated in the bid as regards to the outcome of the procurement process. This standard form of Letter of Intent to Award should be filled in and sent to the successful Bidder only after evaluation and selection of substantially responsible lowest evaluated bid.

To: . . . . . ***name and address of the Supplier*** . . . . . .

Subject: ***Issuance of letter of intent to award the contract***

This is to notify you that, it is our intention to award the contract. for execution of the . . . . . ***.name of the contract and identification number, as given in the Contract Data/SCC*** to you as your bid price . . . . . ***.amount in figures and words in Nepalese Rupees*** ……. as corrected and modified in accordance with the Instructions to Bidders is hereby selected as substantially responsive lowest evaluated bid.

Authorized Signature: .....

Name: .....

Title: .....

CC:
[Insert name and address of all other Bidders, who submitted the bid]

Letter of Acceptance

[on letterhead paper of the Purchaser]

. . . . . ***date***. . . . . .

To: . . . . . ***name and address of the Supplier*** . . . . . .

Subject: .***Notification of Award***

This is to notify that your Bid dated . . . . ***date*** . . . . for execution of the . . . . . .***name of the contract and identification number, as given in the Contract Data/SCC*** . . . . . for the Contract price of Nepalese Rupees ***[insert amount in figures and words in Nepalese Rupees]***, as corrected in accordance with the Instructions to Bidders is hereby accepted in accordance with the Instruction to Bidders.

You are hereby instructed to contract this office to sign the formal contract agreement within 15 days. As per the Conditions of Contract, you are also required to submit Performance Security, as specified in SCC, consisting of a Bank Guarantee in the format included in Section VIII (Contract Forms) of the Bidding Document.

The amout of performance security shall be NRs……[Insert amount] and validity period of performance security shall be ……[insert validity period].

The Purchaser shall forfeit the bid security, in case you fail to furnish the Performance Security and to sign the contract within specified period.

Authorized Signature: .....

6.1 Name and Title of Signatory:

Agreement Form

THIS AGREEMENT made on the [***insert number***] day of [***insert month***], [***insert year***], between [***insert complete name of Purchaser***] of [***insert complete address of Purchaser***] (hereinafter "the Purchaser"), of the one part, and [***insert complete name of Supplier***] of [***insert complete address of Supplier***] (hereinafter "the Supplier"), of the other part:

WHEREAS the Purchaser invited Bids for certain Goods and Related Services, viz., [***insert brief description of the Goods and Related Services***] and has accepted a Bid by the Supplier for the supply of those Goods and Related Services in the sum of NRs ……..[***insert amount of contract price in words and figures including taxes***] (hereinafter "the Contract Price").

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract referred to.
2. The following documents shall be deemed to form and be read and construed as part of this Agreement, viz.:
   (a) the Purchaser's Notification to the Supplier of Award of Contract;
   (b) the Bid Submission Form and the Price Schedules submitted by the Supplier;
   (c) the Special Conditions of Contract;
   (d) the General Conditions of Contract;
   (e) the Schedule of Requirements; and
   (f) ***[indicate any other documents required as appropriate***]

   This Contract shall prevail over all other Contract documents. In the event of any discrepancy or inconsistency within the Contract documents, then the documents shall prevail in the order listed above.
3. In consideration of the payments to be made by the Purchaser to the Supplier as indicated in this Agreement, the Supplier hereby covenants with the Purchaser to provide the Goods and Related Services and to remedy defects therein in conformity in all respects with the provisions of the Contract.
4. The Purchaser hereby covenants to pay the Supplier in consideration of the provision of the Goods and Related Services and the remedying of defects therein, the Contract Price or such other sum as may become payable under the provisions of the Contract at the times and in the manner prescribed by the Contract.

IN WITNESS whereof the parties hereto have caused this Agreement to be executed in accordance with the laws of **"Nepal"** on the day, month, and year indicated above.

Signed by [***insert authorized signature for the Purchaser***] (for the Purchaser)

Signed by [***insert authorized signature for the Supplier***] (for the Supplier)

Performance Security

[insert complete name and number of Contract]

To: [***insert complete name of Purchaser***]

WHEREAS [***insert complete name of Supplier***] (hereinafter "the Supplier") has received the notification of award for the execution of **[*insert identification number and name of contract]*** (hereinafter "the Contract").

AND WHEREAS it has been stipulated by you in the aforementioned Contract that the Supplier shall furnish you with a security [***insert type of security***] issued by a reputable guarantor for the sum specified therein as security for compliance with the Supplier's performance obligations in accordance with the Contract.

AND WHEREAS the undersigned [***insert complete name of Guarantor***], legally domiciled in [***insert complete address of Guarantor***], (hereinafter the "Guarantor"), have agreed to give the Supplier a security:

THEREFORE WE hereby affirm that we are Guarantors and responsible to you, on behalf of the Supplier, up to a total of [***insert currency and amount of guarantee in words and figures***] and we undertake to pay you, upon your first written demand declaring the Supplier to be in default under the Contract, without cavil or argument, any sum or sums within the limits of [***insert currency and amount of guarantee in words and figures]*** as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

This security is valid until the ***[insert day, month, year***].

Name: [***insert complete name of person signing the Security***]

In the capacity of: [***insert legal capacity of person signing the Security***]

Signed: [***insert signature of person whose name and capacity are shown above***]

Duly authorized to sign the security for and on behalf of: **[*insert seal and complete name of Guarantor]***

Date: [***insert date of signing]***

Advance Payment Security

[insert complete name and number of Contract]

To: ***[insert complete name of Purchaser]***

In accordance with the payment provision included in the Contract, in relation to advance payments, ***[insert complete name of Supplier***] (hereinafter called "the Supplier") shall deposit with the Purchaser a security consisting of ***[indicate type of security***], to guarantee its proper and faithful performance of the obligations imposed by said Clause of the Contract, in the amount of [***insert currency and amount of guarantee in words and figures***].

We, the undersigned [***insert complete name of Guarantor***], legally domiciled in ***[insert full address of Guarantor]*** (hereinafter "the Guarantor"), as instructed by the Supplier, agree unconditionally and irrevocably to guarantee as primary obligator and not as surety merely, the payment to the Purchaser on its first demand without whatsoever right of objection on our part and without its first claim to the Supplier, in the amount not exceeding [***insert currency and amount of guarantee in words and figures]***.

This security shall remain valid and in full effect from the date of the advance payment being received by the Supplier under the Contract until ***[(insert day, month, year) Contract completion date may be a basis for this date]***.

Name: ***[insert complete name of person signing the Security]***

In the capacity of: ***[insert legal capacity of person signing the Security]***

Signed: [***insert signature of person whose name and capacity are shown above]***

Duly authorized to sign the security for and on behalf of: **[*insert seal and complete name of Guarantor]***

Date: ***[insert date of signing]***

Appendix 1 - Insurance Requirements
(A) Insurances to be taken out by the Supplier

In accordance with the provisions of GCC Clause 34, the Supplier 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 Purchaser, such approval not to be unreasonably withheld.

(a) Cargo Insurance

Covering loss or damage occurring, while in transit from the supplier's or manufacturer's works or stores until arrival at the Site, to the Facilities (including spare parts therefore) and to the construction equipment to be provided by the Contractor or its Subcontractors.

Amount [in currency(ies)]	Deductible limits [in currency(ies)]	Parties insured [name]	From [place]	To [place]
110% of total price for Supplied Parts	(*)	Contractor	Manufacturer place/cargo warehouse	Site Delivery

(*) 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.

(b) 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 Supplier's liability in respect of any loss or damage occurring during the defect liability period while the Supplier is on the Site for the purpose of performing its obligations during the defect liability period.

Amount [in currency(ies)]	Deductible limits [in currency(ies)]	Parties insured [name]	From [place]	To [place]
110% of total price for Supplied Parts	(*)	Contractor	Site Delivery	Final Acceptance

(*) 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.

(c) Third Party Liability Insurance

Covering bodily injury or death suffered by third parties (including the Purchaser's personnel) and loss of or damage to property (including the Purchaser's property and any parts of the Facilities that have been accepted by the Purchaser) occurring in connection with the supply and installation of the Facilities.

Amount [in currency(ies)]	Deductible limits [in currency(ies)]	Parties insured [name]	From [place]	To [place]
NRs. 1,000,000 or its equivalent as in (b) above		Contractor's Employee	Commencement of work	Final Acceptance
NRs. 1,000,000 or its equivalent		Third Party Personnel	Commencement of work	Final Acceptance

as in (b) above				
NRs. 1,000,000 or its equivalent as in (b) above		Employer's Property	Commencement of work	Final Acceptance

(d) Automobile Liability Insurance

Covering use of all vehicles used by the Supplier or its Subcontractors (whether or not owned by them) in connection with the supply and installation of the Facilities. Comprehensive insurance in accordance with statutory requirements.

(e) Workers' Compensation

In accordance with the statutory requirements applicable in any country where the Facilities or any part thereof is executed.

(f) Purchaser's Liability

In accordance with the statutory requirements applicable in any country where the Facilities or any part thereof is executed.

(g) Other Insurance

The Contractor is required to take out and maintain at its own cost the following types of insurance:

Details:

Amount [in currency(ies)]	**Deductible limits [in currency(ies)]**	**Parties insured [name]**	**From [place]**	**To [place]**

The Employer shall be named as co-insured under all insurance policies taken out by the Contractor\pursuant to GCC Subclause 34.1, except for the Third-Party Liability, Worker's Compensation, and Employer's Liability Insurance, and the Contractor's Subcontractors shall be named as co-insured under all insurance policies taken out by the Contractor pursuant to GCC Subclause 34.1, except for the Cargo, Worker's Compensation and Empoyer's Liability Insurance. All insurer's rights of subrogation against such co-insured for losses or claims arising out of the performance of the Contract shall be waived under such policies.