NEPAL ELECTRICITY AUTHORITY
Transmission Directorate
Grid Development Department
New Modi Lekhnath 132kV Transmission Line Project

Kharipati
Kathmandu, Nepal
Phone : 977-1-6614606

Letter Ref. No. 074/75-8

Date: 26th July,2017

To
All Prospective Bidders

Subject: Issuance of Clarification-1 and Addendum-1

Ref: Package ML1: Procurement of Plant Design, Supply, and Installation of New Modi Lekhnath 132 kV Transmission Line (IFB No: ML/TL/ /073/74- 1)

Dear Sirs/Madams,
In reference to the captioned Tender Published on 3 July,2017, we are hereby attaching the clarification-1 sought by the bidders during pre-bid meeting pursuant to clause 7.1 and addendum-1 pursuant to clause 8.1 of Volume-1 of the bidding Documents

It is hereby requested you all to acknowledge the receipt of the same.

With regards

Roshan Agrawal
Project Manager

NEPAL ELECTRICITY AUTHORITY
Transmission Directorate
Grid Development Department
New Modi-Lekhnath 132 kV Transmission Line Project

IFB No. ML/TL/073/74-1 : Procurement of Plant Design, Supply, and Installation of New Modi- Lekhnath 132 kV Transmission Line
Clarification : Response to the Pre-Bid Queries

S.No	Description/Clause of Reference for the required clarification	Bidder's Request	NEA Response
1	**Eligible Plant & Installation Services (Origin of Plant & Services) refer clause 5.1, ITB & BDS, Section – 1 & 2 and clause 4.2, ITB & BDS, Section – 1 & 2 of Bid Document.**	We kindly request you to please arrange to furnish us the copy of the Loan Agreement between Exim Bank, India and Government of Nepal / Nepal Electricity Authority for our further study the terms and conditions of respective entity applicable to this project. Please, arrange to provide.	Cannot be Provided
		1.1 We request you to kindly arrange to confirm that if Contractor deploy local Labour / local Subcontractor from within Nepal to carry-out various erection – installation activity at Site under direct supervision / guidance of Contractor, then will it be counted / considered as a Services from Outside India (with max. limit of 25%)? Please, confirm.	Confirmed
		1.2 We request you to kindly arrange to confirm that if Contractor procure civil materials like Cement, Rebar Steel…etc. locally from within Nepal, then will it be counted / considered as a Services from Outside India (with max. limit of 25%)? Please, confirm.	Confirmed
		1.3 We request you to kindly arrange to confirm that whether Contractor will be allowed to import Cement & Re-bar steel from India to meet the criteria for Indian Origin Plant & Services (minimum 75%) for this project. Please, confirm / clarify. If import of Cement / Rebar Steel allowed from India for this project, then kindly confirm whether applicable Custom / Import duty, VAT & other taxes in Nepal will be reimbursed by NEA or not (Like taxes & duties on Imported Plant under Schedule-1). Please, confirm / clarify.	Since the works under items numbers of Schedule-IV(Installation and Civil Works) are paid with VAT, and Items Like Cement and Re-Bar are used to perform the work under Schedule -IV ,Contractorwill be allowed to import Cement & Re-bar steel from India to meet the criteria for Indian Origin Plant & Services (minimum 75%) for this project but have to pay applicable Custom / Import duty, VAT & other taxes in Nepal and **will not be reimbursed by NEA**
2	**Bank Guarantees**		
		2.1 We understand that The Bid Security issued from reputed source in India (Not having branch in Nepal) is acceptable to NEA??	Refer to clause ITB. 19.1 of Section-2-Bid Data Sheet of Volume-I of Bid Documents
		2.2 As per Cl. No. 13.2, GCC, Section-7, we understand that Bank Guarantee issued from reputed source in India (Not having branch in Nepal) against Advance payment is acceptable to NEA. Please Confirm	Bank Gurantee against Advanc Payment must be Counter Guranteed by Class' A' Commercial Bank in Nepal
		2.3 The Performance Bank Guarantee issued from reputed source in India (Not having branch in Nepal) is acceptable to NEA?? Please Confirm	Performance Bank Gurantee must be Counter Guranteed by Class' A' Commercial Bank in Nepal
3	**Evaluation and Qualification Criteria**		

	ISO Certificate [Cl. No. 2.7, Section-3, Vol.-1]	**3.1** The criteria for ISO Certificate is mentioned as "including design in scope of registration". We request to please delete the words "including design in scope of registration" as the design scope is generally not required for Conductor, Insulators, Earth wire, Line Hardware etc. as the material will be supplied as per Employer Technical Specification.	Will be as per the criterion laid in the Bid Document
		3.2 We request you to kindly arrange to provide the names of approved / acceptable manufacturers / suppliers for major plants & equipments, which further enable us to suitably choose from and proposed in our offer.	Can Provide from any manufacturers complying to the requirements and specifications of bid
	Letter of Bid [Cl. No. 2.1.1 & 2.1.4, Section-3, Vol-1]	**3.3** For above mentioned clauses we need to submit the Letter of Bid with our Technical Bid. But in Section – 4 Bidding Forms format for Letter of Bid is not provided. Kindly provide the format for Letter of Bid	Letter of Technical Bid and Letter of Price Bid format is clearly provided in the bidding forms of Bidding Documents(Refer to page 4-3 and Page-1 before price schedule , Volume-I of the Bidding Documents
	VAT and Pan Registration in Nepal [Cl. No. 2.1.5, Section-3, Vol-1]	**3.4** As per above clause, we understand that we need to submit PAN and VAT Registration Certificate in Nepal at the time of Contract agreement. Please Confirm	PAN and VAT Registration Certificate in Nepal can be submitted after the Contract Agreement.
	Specific Construction Experience [Cl. No. 2.4.2 (a) & (b), Section-3, Vol-1]	**3.5** It is mentioned in Cl. No. 2.4.2 (b) (i), Section – 3, Vol-1 as "Transmission Line having route length of at least 42 Km in mountainous undulating hilly terrain". In the provided Form EXP – 2 (a) & (b) of Bidding Forms, Section – 4, Vol-1 Transmission Line route length is mentioned 35 Km. Hence, kindly request you to confirm required Transmission Line Rout length for Specific Construction Experience.	Corrected as in Addendum-1
	Personnel [Cl. No. 2.5, Section-3, Vol-1]	**3.6** In the personal requirement for the position of Civil Engineer as per above refer clause the Academic Qualification requirement is given as Bachelors in Electrical Engineering instead of Civil Engineering in provided table of Personnel requirement. So you are kindly requested to amend suitably.	Corrected as in Addendum-1
	Type Test Requirements [clause No. 2.7, Section – 3, Volume-1]	**3.7** Bidders are required to submit the Type Test Certificate along with their Bid. In line with above, we would like to bring to your notice that different power utilities in different countries, follows the different standards / requirements for same rating of systems. Accordingly, type test certificates of identical plants may not available with major reputed manufacturers in India. We understand that Type Test certificates of similar or higher size equipments shall be acceptable at Bidding stage particularly for equipments relevant to Transmission Line works (i.e. for Conductor / OPGW / Insulators / Line Hardware). Kindly, confirm. However, bidder shall carry-out the fresh Type Test after award of contract & prior to dispatch of materials to the satisfaction of Employer as per bidding document requirements.	Will have to submit the type test for the offered or higher size is acceptable at bidding stage but have to declare to conduct the type test of the offered size during the Contract execution at its own cost without anty additional cost to the employer, if the test report for the offered size is not available
4	**Bidding Forms**	As per Form FIN-4 : Current Contract Commitments, we need to provide the Value of outstanding works and Average Monthly Invoicing in NRS, whereas in other various forms in this section required in USD.	Corrected as in Addendum-1

<table>
<tr><td></td><td></td><td>Kindly request to confirm the details are required in Form FIN-4 in NRS or USD</td><td></td></tr>
<tr><td rowspan="5">5</td><td rowspan="5">Standard Technical Particulars (STP) values</td><td></td><td rowspan="5">Project requirement is laid in the corresponding specifications complying to which bidders have to fill up the Technical Particulars</td></tr>
<tr><td>a. Composite Long Rod Insulator & Accessories</td></tr>
<tr><td>b. OPGW and OPGW Accessories</td></tr>
<tr><td>c. Hardwar for Conductor</td></tr>
<tr><td>Kindly, provide the STP Values for the above items.</td></tr>
<tr><td rowspan="2">6</td><td rowspan="2">Line Conductor</td><td>There is a discrepancy in STP values for ACSR Conductor in Cl. 1.2.3, Chapter-5, Vol-2 & GTP, Chapter-7, Vol-2 as mentioned below.</td><td rowspan="2">Corrected as in Addendum-1</td></tr>
<tr><td>
<table>
<tr><th>Description</th><th>Unit</th><th>Requirement Provided in STP
Cl. 1.2.3, Chapter-5</th><th>Requirement Provided in GTP
Chapter-8</th></tr>
<tr><td>Aluminium Wires</td><td>No. / mm</td><td>30 / 3.35</td><td>54 / 3.38</td></tr>
<tr><td>Steel Wires</td><td>No. / mm</td><td>7/3.35</td><td>7/3.38</td></tr>
<tr><td>Overall Dia. Of Conductor</td><td>mm</td><td>23.45</td><td>30.42</td></tr>
<tr><td>Max. DC Resistance of Conductor at 20 degree Centi.</td><td>Ohms / km</td><td>0.1093</td><td>0.05979</td></tr>
<tr><td>UTS Of Conductor</td><td>kg</td><td>11340</td><td>15381</td></tr>
<tr><td>Weight of Conductor with grease</td><td>kg / km</td><td>1214</td><td>1833</td></tr>
</table>
</td></tr>
<tr><td>7</td><td>Transmission Line Tower GTP</td><td>We understand that Transmission Line Tower Design is not in the scope of work for this tender as per Cl. No. 1.1.2 (ii), Chapter-1, Vol-2 of Bidding Document. Hence we don’t require to submit filled Tower GTP provided in Chapter-8, Vol-2. Kindly Confirm.</td><td>Confirmed and correted in Addendum-1</td></tr>
<tr><td>8</td><td>Insulator String</td><td>8.1 Minimum arcing distance and Maximum string length is not provided in the Technical Specification. Kindly arrange to provide the same.</td><td>Will be finalized during detailed engineering</td></tr>
<tr><td></td><td></td><td>8.2 Counter Weight details are not provided in Price Schedule and Technical Specification. We understand that Counter Weight is not required for subjected tender. Please Confirm.</td><td>Counter weights are not envisaged at this stage and later if required during the detail design stage, the Contractor shall have to furnish as required per the design and no additional cost for it shall be paid.</td></tr>
<tr><td rowspan="2">9</td><td rowspan="2">Drawings, Survey Report and Co-ordinates for Transmission Line</td><td>9.1 We have not received Bid Drawings for following items.</td><td rowspan="10">Specification for all the Items are provided corresponding to which the Bidder has to devlop these drawings from the Manufacturer</td></tr>
<tr><td rowspan="9">a. Tower & Tower Accessories,
b. Foundation
c. Conductor & Conductor Accessories
d. OPGW & OPGW Accessories
e. Insulator
f. Insulator String
g. Hardware Fittings
h. Earthing
i. Bolt and Nut
Kindly arrange to provide the same.</td></tr>
<tr><td></td><td></td></tr>
<tr><td></td><td></td><td>9.2 Also you are kindly requested to provide Survey Report and Co-ordinates for the subjected Transmission Line.</td><td>Survey Reports will be provided to the successful bidder during the Contract execution stage and Coordinates are provided as attached in Annexure</td></tr>
</table>

10	**Basic Insulation Level [Insulator and Accessories]**	There is a discrepancy in BIL Value as per below.	Corrected as in Addendum-1
		As per Table 7.1 & 7.2, Chapter-7, Volume - 2 of bidding documents BIL value is 750 / 325 & (Impulse withstand Voltage / Power frequency withstand Voltage) & 950 / 395 (Impulse withstand Voltage / Power frequency withstand Voltage) respectively and in Sr. 3.3, Price Schedule 1 & 2, Section IV, Vol-1 the BIL value is mentioned 650.	
		So you are kindly requested to clarify which BIL value we have to consider for subjected tender.	
11	**Altitude**	You are kindly requested to provide the altitude for subjected Transmission Line.	1735MSAL(Max.)
12	**Quantity Variation Clause**	We understand the followings:	
	As per **(i)** Clause No. 2.6, Chapter-1, Volume - 2 **(ii)** Clause no. GC 11, PC, Section-VII, Volume - 3 **(iii)** Clause no. 39.4 (a), PC, Section-VII, Volume – 3	a) Final BOQ (Bill of Quantity) for Supply & Erection items will be freeze based on outcome of Details Survey / Profiling / Tower Spotting….etc. and accordingly Total Contract price will be Revised. Kindly, Confirm.	Confirmed
		b) The Quantity of an individual item can very upto any extend subject to maximum variation in contract price upto 15 %. Kindly, Confirm.	Corrected as in Addendum-1
		c) However, during execution it may be required to change the route / tower locations / types of towers….etc. due to various executional constraint like Right of Way problems….etc. which cannot be taken-care off during Survey Work.	Confirmed
		Due to above changes on route / site requirements, required Bill of Quantity will also need to be revised considering site conditions.	
		We understand that NEA / Employer will also suitably revise the Freezed Bill of Quantity (based on Survey) considering actual Site requirements subsequently and Total Contract price will also get revised & payment will be made to contractor accordingly. Kindly, Confirm.	
13	**ROW Scope**		
	As per clause 3.6, Chapter-3, Section - 4, Volume-2 and other various clauses of bidding documents	we understand the followings:	
		13.1 Necessary Right of Way / Way Leave and permanent Access required for transmission line route will be arranged by Employer (NEA) at their cost in accordance with the work schedule (Including all kind of compensation like Land, Crop, Permanent Structures…etc.). Kindly, Confirm.	Confirmed
		While, Contractor is responsible for making all necessary arrangement for temperary Access Road at his cost, including construction & maintenance of the Access Road. Kindly, confirm, whether our above understanding is in line with bidding documents requirements or not.	

		13.2 Employer will be responsible for the clearances of trees along the right of way in Forest. While, Contractor will be responsible for clearances of all kind of obstacles along the right of way and Access road. Kindly, confirm, whether our above understanding is in line with bidding documents requirements or not.	Confirmed
14	**Conductor & OPGW Supply Payment under Price Schedule-I**		
	As per Clause No. 1.6, Chapter-1, Section-4, Volume-2 and Clause no. GC 11, PC, Section-VII, Volume-3	we understand that during freezing of Bill of Quantity for Supply of Plant / materials after detailed survey / profiling / Tower Spotting, following factors will also be considered:	
		14.1 **Conductor Supply**: Quantity will be worked-out (Acceptable to NEA) by considering necessary extra provision for Sag, Jumpering…etc. as per actual requirement and accordingly payment will be made. Kindly, Confirm.	Confirmed
		14.2 **OPGW Supply**: Quantity will be worked-out (Acceptable to NEA) as per drum schedule considering necessary extra provision for Sag, extra length required for Jointing / Termination at Joint Box…etc. as per actual requirements and accordingly payment will be made. Kindly, Confirm.	Confirmed
15	**Terms of Payment**		
	From Appendix-1, Terms & Procedure of Payment,	we understand the followings:	
		15.1 80% of the total CIP amount of plant supplied from abroad (Price Schedule – 1) will be made through Letter of Credit opened by Employer's Bank (i.e. by EXIM bank) in favor of Contractor's Bank. Kindly, Confirm.	Confirmed
		15.2 While, all kind of Advance Payment / Payment against Installation & Testing / Retention payment will be made by EXIM bank directly through Account Transfer only. Kindly, Confirm.	Confirmed
16	**Price Schedules**		
	Price Schedule No.-1 – Plant and Equipment including Mandatory Spares to be supplied from abroad including type test charges	For items under 1.1, the basic tower body along with leg extensions quantities are given. We understand that bidders are required to quote prices for basic tower with given description of "basic tower body" in the schedule and for all the leg extensions, bidders are required to quote the price of those leg extensions only, i.e. excluding price of basic tower. Kindly Confirm.	Confirmed
17	**Price Bid Evaluation**	We understand that, price bid will be evaluated excluding taxes & Duties for the quoted prices in the Price Schedules.	Yes, your Understanding is correct
18	**Type Test Charges**	As per foot Note No. 2) in the Price Schedule No. 1 & Price Schedule No. 2 of Volume-3 of bidding document, bidders are required to quote prices inclusive of type test charges except for Towers and Insulator String. In this regard, we request you to please confirm that type test will be required to do for all the equipment/item except Towers and Insulator String, despite of submission of type test report in line with Qualifying Requirements for Subcontractors in Cl. No. 2.7 of Section-3, Evaluation and Qualification Criteria, Volume-1 and requirements mentioned in Volume-2 of bidding document??	If required, the contractor have to perform the Type test
		If yes, then NEA will pay for Type Test charges at actual?? Kindly confirm.	No separate type test charges will be paid

19	**Price Variation [Appendix-2, Section-9, Volume-3]**	As per Clause No. 14.6 of BDS, Volume-1 , the contract will be firm price contract for successful bidder. We would like to bring to your kind notice that the commodity prices and raw material prices are fluctuating on regular basis. Also, looking to the contract completion period of 540 days, it is very much difficult to anticipate the future escalation at this stage. Hence, to overcome such problem and enable the bidders to quote competitive price, we kindly request you to please make provision for price variation for major materials / plants.	The Contract price shall not be adjustable
20	**1. Tower Design & Drawing**		
	Clause No. 1.1.2.3 (Chapter-1), Volume-2,	**20.1** As per Clause No. 1.1.2.3 (Chapter-1), Volume-2, the Bidder shall submit their Bid with consideration that the tower designs/drawings shall be developed/ provided by Employer, but foundation design and drawing shall be developed by the bidder themselves and design rights will be strictly reserved with Employer. As per above clause we understand that the foundation designs are in our scope. However, in specification foundation loads and soil properties are not furnished. Please provide the same.	Provided in the addendum-1
	Price schedule Volume 1	**20.2** As per price schedule Volume 1 tower weights are given but for ±0m extension weights are not given and for some extensions weights have negative values. Please clarify the same.	The basic tower body is taken from ±0m extension and tower leg or body extension from the above basic tower body.Hence the negative weight is given for negative extension.
		20.3 As per price schedule Volume 1 for tower type DC, DD and DDM weights for strengthened required to quote but tower design and tower loadings are not furnished to work out the same. Please clarify these weights are not required to quote at tender stage. Unit rate shall be considered for these at execution stage.	Refer to Addendum-1
	Clause No. 1.2.1 (Chapter-4) Volume 2	**20.4** As per Clause No. 1.2.1 (Chapter-4) Volume 2, IS Steel Sections of tested quality of conformity with IS 2062:2006, Grade E250 (Designated Yield Strength 250 MPa) and/ or Grade 350 (Designated Yield Strength 350 MPa) are to be used in towers, extensions, stubs and stub setting templates. The Contractor can use other equivalent grade of structural steel angle sections and plates conforming to latest International Standards. Please clarify the Grade of steel – E250A & E350A, E250B & E350B or E250C & E350C.	Applicable as per the Bidding Documents
	Taxes & Duties		
		21.1 We kindly request you to please confirm us the applicable rate of business tax and income tax in Nepal.	Will be applicable as per Government of Nepal law
		21.2 We kindly request you to please confirm us the applicable VAT rate on installation service.	Will be applicable as per Government of Nepal law

21	Clause No. 14 of GC & PC of Volume-3	**21.3** We understand that for imported plants and equipment, the Custom Duty, VAT and other taxes applicable in Nepal are exempted or will be reimbursed. Please Confirm our understanding.	Custom Duty for the Items under the Schedule-1
		21.4 We understand that Custom Duty @1% of special rate need to be paid by contractor for imported materials, which will be reimbursed to the contractor on providing document evidence. Please Confirm.	Yes, your Understanding is correct
		21.5 We understand that VAT and other local taxes applicable in Nepal on installation services (Price Schedule No. 4) are exempted or will be reimbursed for this project. Please confirm our understanding.	VAT applicable for installation services will be reimbursed
22	**Tower Weights**	The tower weights are not provided in schedule 1. Please provide ammended BOQ	Tower weights provided in Schedule-IV can be considered in Schedule -I
23	**Conditions of Service**	Does the Line Route comes in Snow zone?	Line Route does not comes in Snow Zone
24	**In the NEA tenders generally it is mentioned that "the Employer shall forward the report to the Forest Office and shall initiate the process of getting approval for felling of trees . Upon approval on the report from the District Forest Office, contractor shall initiate the process of marking (which is termed as "TANCHA") of the trees in co-ordination with the concerned District Forest Office, the contractor shall immediately mobilize the work force and cut the marked Tress"**	Please Clarify whose scope is to get the clearances from Forest Department	The Contractor after providing the detail report of the required trees to be fell along the RoW, The employer will get approval from the concerned Forest office and the Contractor shall initiate the process of Marking of the trees in coordination of the Concerned District Forest Office and the employer will get the Forest cleared
25	**Soft copy of Techno-commerical bid**	Do we need to submit the soft copy of techno commerical bid in flash/pendrive	It is not required
26	**Detail survey and soil investigation**	Detail survey and soil investigation report is not provided. Please provide the same.	Refer to clarification 9.2
27	**Price Schedule 4, Installation Services**	S.No d) DC + 0M body exension is missing in 4.3 Tension Tower DC	Refer to Addendum-1
28	***Volume – 1 of Tender, ITB 19.3 & BDS 19.1***	The bid security issued by any foreign Bank outside Nepal must be counter guaranteed by a "A" class commercial Bank in Nepal with a minimum of USD 2, 25,000 or equivalent INR or Nrs.We understand that bank guarantees from scheduled bank in India will not be acceptable. Please confirm if our understanding is correct.	Refer to clause ITB. 19.1 of Section-2-Bid Data Sheet of Volume-I of Bid Documents

29	**Volume – 1 of Tender, ITB & BDS 4.5**	Foreign bidder shall be eligible only if the bidder submits 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.Tax Clearance Certificate or Proof of submission of income return for 2016/17 Resident foreign bidder shall submit PAN/VAT certificate and tax clearance certificate or proof of submission of Income Return for 2016/17.Please confirm that that if tax clearance certificate or proof of submission of Income Return for 2016/2017 is technically not feasible for resident bidders then previous year 2015/2016 shall be applicable. And same has to be submitted by successful bidder at contract signing stage.	Confirmed
30	**Volume – 1 of Tender, ITB & BDS 14**	As per the LOC agreement, goods and services covered under the LOC and proposed to be financed under the LOC, shall be exempt from all kinds of taxes and duties of any nature whatsoever levied in Nepal including all corporate /personal/value added taxes, import/custom duties, special levies and social security contributions for temporary employees deputed by the Indian Contractor/supplier in relation to the execution of the Contract. Further, if any such duty is levied, it will be fully reimbursed by the employer. We understand subject tender is under LOC agreement & all the good & services i.e. all the items under schedule 1, schedule 2, schedule 3 & schedule 4 shall be free from all kind of taxes & duties of any nature. And if any tax or duty is levied on contractor, same shall be borne by employer. Kindly confirm if ou□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□	For Items under Schedule-IV ,VAT is paid separately to the Contractor and duty and Tax levied on the Contractor will not be borne by the employer. The bidder have to consider it while quoting the price under Schedule-IV
31	**Volume – 1 of Tender, ITB & BDS 35**	Contractor's proposed subcontracting: Maximum percentage of subcontracting permitted is: 25% of the total Contract amount. From above we understand that, Maximum percentage of subcontracting permitted is: 25% of the total Contract amount is applicable for single contractor. For example if contract price is 100 unit, then it can be subcontracted to 4 subcontractors with 25 units each at maximum. Kindly confirm if our understanding is correct	Will be as per BDS 35.1, Section-II, Volume-I of the Bidding Documents
32	**Volume – 1 of Tender, Section 3Clause 2.7**	The Bidder shall propose the type tested materials except tower and Insulator string. The Bidder shall also submit thetype test certificates for each of the above-mentioned items. The type tests conducted earlier should have either beenconducted in accredited laboratory (accredited based on IEC Guide 25 / 17025 or EN 45001 by the nationalaccreditation body of the country where laboratory is located). The type test reports shall not be earlier than 5 years.From above we understand that except tower & insulator string, all other items to be supplied under the contracts need not to be type tested if bidder submits the type test certificates as per contract requirement. Please vonfirm if our understanding is correct.	Confirmed
33	**Volume – 1 of Tender, Section 3Clause 2.7**	We understand that above credential need to be submitted only if main bidder proposes subcontracting of above activities. And if bidder himself does not propose subcontracting of these activities then credentials need not to be submitted at bidding stage. Please confirm if our understanding is correct.	Confirmed

34	**Volume – 1 of Tender, Section 4 Schedule 1**	In price schedule unit rates has been as "CIP- Nepal Border (Excluding Taxes and Duties)" We understand that unit prices shall be till Site location. Kindly confirm if our understanding is correct.	Confirmed
35	**Volume – 2 of Tender, Chapter 1 Clause 1& 1.1.2.1**	Design, engineering, drawing and construction of works shall satisfy the general technical requirements specified in the Specification *or* implied as per relevant IEC/IEEE/ IS/ASTM/British standard codes (B S Codes)/ equivalent International Standards.Employer shall provide structural drawings, shop drawings (if required) & Bill ofMaterials of all type of transmission line towers and its extensions, river crossingtowers/special towers as required to the Successful Contractor after placement of award,in sequence, suiting the project requirement. However, design drawings for all type offoundations for the towers shall be designed by the Contractor and submit to Employerfor approval.We understand that tower design is not in the scope of contractor. However all type offoundations for the towers shall be designed by the Contractor and submit to Employerfor approval. Kindly confirm if our understanding is correct. Also please provide foundation forces for all type of towers in order to design foundations & towers weights of each type of tower including its extensions.	Please also refer to clause 1.1 of Chapter-IV of Volume -II of the bidding Documents and refer to addendum-1 for parameters for Foundation design
36	**Volume – 2 of Tender, Chapter 6 Clause 1**	Bidders shall offer the OPGW and their accessories from reputed manufacturer. TheContractor shall ensure complete supervision by competent technical personnel(s) of theOPGW manufacturer during installation, testing and commissioning of the whole OPGWsystem in totality under the project. **The supervision shall also include the on-site training to the Employer's Representative(s).Kindly provide scope of training, No. of days, Number of personnel to be trained. Also please include same in price schedule.**	The training is to be provide on site to few employers representative and no additional cost for the same shall be provided.
37	**Volume – 2 of Tender, Chapter 7 Clause 1.20:**	The electrical type tests shall be performed only once on insulators satisfying the electricallydefined criteria for one type and shall be performed with arcing devices, if they are inintegral part of the insulator type. The electrical type tests shall be repeated only when one or more of the above characteristicsare changed. (a) Dry lightning impulse withstand voltage test IEC : 61109 & IEC : 60383 (b) Wet Power – frequency test IEC : 60383 (c) Mechanical load-time test IEC : 60383 (d) Corona and RIV test under dry condition IEC : 60437 & IEC : 60383 (e) Vibration Test Annexure-A (f) Silicone content test Annexure-A i) Flammability test IEC : 61109 & IEC : 60383 ii) Recovery of Hydrophobicity test We understand that, these type test reports are mandatorily to be conducted during execution stage, irrespective of submission of all of these type test reports as per mentioned IEC specification with last 5 years. Pease confirm if out understanding is correct.	Confirmed

38	**Volume – 2 of Tender, Chapter 1 Cl. 1.1.2.1**	Employer shall provide structural drawing, shop drawings & BOM for all towers and extensions shall be provided by employer to successful contractor however design drawing of all types of foundation shall be designed by contractor.	Refer to above clarification No-35
		In view above, Kindly furnish us Ultimate Foundation loads from tower design, stub section, base width at +-0m level & slope of tower for all types of towers namely DA, DB,DC,DD & DDM, to estimate foundation quantities.	Refer to Addendum-1
39	**Volume – 2 of Tender, Chapter 2 Cl. 2.4.1**	Soil properties to develop foundation are not furnished in the specification. Kindly furnish the same.	Refer to Addendum-1
40	**Volume – 2 of Tender, Chapter 1** Cl. 1.1.2.1	All BOM shall be furnished by employer hence request to furnish us %age of MS/HT sectional content on overall basis for costing purpose.	Weight of Tower is already provided. Details will be provided to sucessful bidder during contract stage
41	**Volume – 2 of Tender, Chapter 1**	Factor of safety for foundation design is not mentioned in the specification. Please furnish the same.	Refer to Addendum-1
42	**Volume – 2 of Tender, Chapter 2 Cl. 2.1.1**	Outline drawings of towers are not furnished in the specification. Kindly furnish.	Refer to Addendum-1
43	**Volume – 2 of Tender, Chapter Cl.2.**	Maximum conductor temperature is mentioned as 80 deg. C, however as per technical Data schedule, it is mentioned as 85 deg. C. Kindly clarify.	Maximum Conductor temperature shall be 85 deg. C
44	**Volume – 1 of Tender, Section 4, Clause 1.7.1 Item No. 5(IV**	IS Steel Sections of tested quality of conformity with IS 062:2006, gradeE250 (Designated Yield Strength 250 MPa) and/ or grade 350 (Designated Yield Strength 350 MPa) are to be used in towers, extensions, stubs and stub setting templates. The Contractor can use other equivalent grade of structural steel angle sections and plates conforming to latest International Standards. However, use of steel grade having designated yield strength more than that of EN 10025 grade S355 JR/JO (designated yield strength 355 MPa) is not permitted, unless otherwise indicated in this specification.	Confirmed
		We understand steel grade having designated yield strength more than that of EN 10025 grade S355 JR/JO (designated yield strength 355 MPa) is not permitted, please confirm.	
45	GCC 28.4/Appendix 8- Functional Gurantees	The payment of Liquidated Damages under GC Sub-Clause 28.3, upto limitation of Liability, We understand that this Functional Gurantee shall not be applicable, Please Confirm	Applicable if the functional Gurantee specified, if any is not met

NEPAL ELECTRICITY AUTHORITY

Transmission Directorate

Grid Development Department

New Modi-Lekhnath 132 kV Transmission Line Project

IFB No. ML/TL/073/74-1 : Procurement of Plant Design, Supply, and Installation of New Modi- Lekhnath 132 KV Transmission Line

ADDENDUM-1

In accordance with the **ITB 8.1** of the Bidding Document for the " **Procurement of Plant Design, Supply and Installation of New Modi Lekhnath 132kV Transmission Line (Single Stage Two Envelope Bidding) (IFB No: ML/TL/073-74-1)",** following amendments have been made in the bidding Document**.**

S.No	Description/Clause of Reference for the required clarification	As in the Bidding Documents	To Be Replaced as
1	Form EXP – 2 (a): Specific Construction Experience	he Bidder as a Prime Contractor must have successfully or substantially completed transmission lines on turnkey basis of at least 2(Two) numbers of 110kV or higher voltage with a length of at least 35 Kms each within last 10(Ten) years, out of which at least one line should be in successful operation for at least one years as on the date of bid opening.	Replace by: Participation as Contractor, management Contractor, or subcontractor, in at least Two (2) Contracts within the last 10 years, each with a value of at least USD6.5 Million that have been successfully or are substantiallycompleted and that are similar to the proposed works. The similarity shall be based on the physical size, complexity, methods, technology or other characteristics as described in Section 5, Works Requirements.
2	Form EXP – 2 (b): Specific Construction Experience in Key Activities	The Bidder as prime contractor should have implemented: i) At least one Transmission line of Voltage level 110 kV or higher having route length of at least 35 Km in a mountainous undulating hilly terrain. ((ii)Should have done successful testing for Transmission line of Voltage level 110 kV or higher in at least one of its completed and/or ongoing project iii) Should have completed /substantially completed one transmission line of Voltage level 110 kV or higher outside the bidders home country.	Replace by: The Bidder as prime contractor should have implemented:(i) At least one Transmission line of Voltage level 110 kV or higher having route length of at least 42 Km in a mountainous undulating hilly terrain.ii) Should have completed /substantially completed one transmission line of Voltage level 110 kV or higher outside the bidders home country

3	Personnel [Cl. No. 2.5, Section-3, Vol-1]	In the personal requirement for the position of Civil Engineer ,Academic Qualification requirement is given as Bachelors in Electrical Engineering	Replace Electrical Engineer by Civil Engineer
4	**Bidding Forms**	Form FIN-4 : Current Contract Commitments, Value of outstanding works and Average Monthly Invoicing in in-**NRS**	Replace **Nrs** by **USD**
5	**Volume-II,Chapter-8,Line Conductor GTP**	GTP for ACSR Conductor,Chapter-8, Vol-2	Replace the GTP Form For Conductor as attached in the annex
6	**Volume-II,Chapter-8,Transmission Line Tower GTP**	We understand that Transmission Line Tower Design is not in the scope of work for this tender as per Cl. No. 1.1.2 (ii), Chapter-1, Vol-2 of Bidding Document. Hence we don't require to submit filled Tower GTP provided in Chapter-8, Vol-2. Kindly Confirm.	Replace the Tower GTP as attached in annex
7	Price Schedule No.-1 – Plant and Equipment including Mandatory Spares to be supplied from abroad including type test charges	For items under 1.1, the basic tower body along with leg extensions quantities are given. We understand that bidders are required to quote prices for basic tower with given description of "basic tower body" in the schedule and for all the leg extensions, bidders are required to quote the price of those leg extensions only, i.e. excluding price of basic tower. Kindly Confirm.	Price schedule is revised as in the annex
8	Price schedule Volume 1	**20.2** As per price schedule Volume 1 tower weights are given but for ±0m extension weights are not given and for some extensions weights have negative values. Please clarify the same.	Price schedule is revised as in the annex
		20.3 As per price schedule Volume 1 for tower type DC, DD and DDM weights for strengthened required to quote but tower design and tower loadings are not furnished to work out the same. Please clarify these weights are not required to quote at tender stage. Unit rate shall be considered for these at execution stage.	Price schedule is revised as in the annex
9	**Detail survey and soil investigation**	Detail survey and soil investigation report is not provided. Please provide the same.	Survey report attached as in the annex
10	**Price Schedule 4, Installation Services**	S.No d) DC + 0M body exension is missing in 4.3 Tension Tower DC	Price schedule is revised as in the annex

NEPAL ELECTRICITY AUTHORITY
TRANSMISSION DIRECTORATE
New Modi Lekhnath 132kV Transmission Line Project

Procurement of Plant Design, Supply and Installation of New Modi Lekhnath 132kV Transmission Line (Single Stage Two Envelope Bidding) (ICB No: ML/ICB/TL/073-74-1)

Addendum No. 1

In accordance with the **ITB 8.1** of the Bidding Document for the " **Procurement of Plant Design, Supply and Installation of New Modi Lekhnath 132kV Transmission Line (Single Stage Two Envelope Bidding) (ICB No: ML/ICB/TL/073-74-1)",** following amendments have been made in the bidding Document**.**

(i) Volume-II, Part I-Transmission Line, CHAPTER 4, Add the following:

APPENDIX-III:

Tower Reaction forces for foundation and Soil Parameter as follows:

Table: **Tower Reaction forces for foundation**

DA type Tower	**Normal Tower (Normal Condition)**	**Normal Tower (Broken Wire Condition)**	**+3m Tower (Normal Condition)**	**+3m Tower (Broken Wire Condition**	**+6m Tower (Normal Condition**	**+6m Tower (Broken Wire Condition**	**+9m Tower (Normal Condition**	**+9m Tower (Broken Wire Condition**
Type of Force	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)
Compression	19084	29279	20091	30454	21043	31556	21958	32599
Uplift	15704	25921	16482	26867	17222	27727	17903	28516
Longitudinal Shear	632	1174	631	1029	671	1032	696	1033
Transverse Shear	172	816	26	621	12	562	22	523
DB type Tower	**Normal Tower (Normal Condition)**	**Normal Tower (Broken Wire Condition)**	**+3m Tower (Normal Condition)**	**+3m Tower (Broken Wire Condition**	**+6m Tower (Normal Condition**	**+6m Tower (Broken Wire Condition**	**+9m Tower (Normal Condition**	**+9m Tower (Broken Wire Condition**
Type of Force	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)
Compression	23580	34991	24306	35767	24960	36497	25647	37198
Uplift	19179	30942	19585	31638	19936	31694	20248	32041
Longitudinal Shear	589	1633	639	1533	657	1475	708	1454
Transverse Shear	65	1545	38	1323	38	1166	54	1063
DC type Tower	**Normal Tower (Normal Condition)**	**Normal Tower (Broken Wire Condition)**	**+3m Tower (Normal Condition)**	**+3m Tower (Broken Wire Condition**	**+6m Tower (Normal Condition**	**+6m Tower (Broken Wire Condition**	**+9m Tower (Normal Condition**	**+9m Tower (Broken Wire Condition**
Type of Force	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)
Compression	31722	40292	32610	41201	33311	41950	34148	42833
Uplift	26955	35649	27406	36135	27855	36576	28202	36915
Longitudinal Shear	825	1904	835	1711	834	1631	888	1623

Transverse Shear	228	1659	47	1323	43	1164	58	1052
DD/DDE type Tower	**Normal Tower (Normal Condition)**	**Normal Tower (Broken Wire Condition)**	**+3m Tower (Normal Condition)**	**+3m Tower (Broken Wire Condition**	**+6m Tower (Normal Condition**	**+6m Tower (Broken Wire Condition**	**+9m Tower (Normal Condition**	**+9m Tower (Broken Wire Condition**
Type of Force	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)
Compression	46628	60685	47873	62112	48779	63160	49701	64209
Uplift	43633	54595	44141	55346	44708	56101	45115	56656
Longitudinal Shear	1282	2273	1305	2121	1221	1935	1194	1860
Transverse Shear	412	1803	131	1359	42	1201	48	1075
DDM type Tower	**Normal Tower (Normal Condition)**	**Normal Tower (Broken Wire Condition)**	**+3m Tower (Normal Condition)**	**+3m Tower (Broken Wire Condition**	**+6m Tower (Normal Condition**	**+6m Tower (Broken Wire Condition**	**+9m Tower (Normal Condition**	**+9m Tower (Broken Wire Condition**
Type of Force	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)	Unit (kgs)
Compression	64500	75196	65657	76395	66480	77253	67352	78172
Uplift	59109	66254	59415	66694	59848	67233	60125	67581
Longitudinal Shear	1109	2096	1178	2023	1109	1848	1093	1790
Transverse Shear	454	1883	144	1402	42	1246	49	1117

NOTE: 1) ALL THE ABOVE FORCES ARE IN KGS WITHOUT F.O.S.

2) COMPRESSION AND UPLIFT ARE ALONG THE TOWER SLOPE.

Table: **Soil Parameters (General)**

Soil Type	Angle of Earth Frustum	Unit weight of soil	Limit Bearing Capacity
		kg/m^3	kg/m^2
Normal Dry Soil	30	1440	25000
Wet Soil due to presence of sub soil Water/ Surface Water	15	940	12500
Fissured Rock/Soft rock (with undercut)			
a) In Dry Condition	20	1700	62500
b) In Wet Condition	10	940	62500
Hard Rock	-	-	125000
Sandy Soil	10	1440	25000

(ii) Volume-II, Part-1: Transmission Line, Chapter-7-Insulators and Accessories

Read the entire clause 1.2 Composite Long Rod Insulator, as follows:

The composite long rod type insulators shall be fully type tested and has been in production for at least five years.

The insulators shall be of puncture-proof type. These insulators shall be made of a core with fiberglass reinforced resin and sheds of HT Silicon Rubber. They shall be of light weight and high tensile strength. They must withstand safely all operating stresses even in the presence of Ozone and UV radiation. The composite material shall be of inherent stability.

To cope with lightning over-voltages, the insulator sets have to be designed with respect to insulation coordination according to IEC 60071-1, which determine the gap between the grounded fittings and the live parts.

The insulators shall be matched with the accessories to be used. The insulator shall confirm to IEC 61109 "Composite insulators for A.C. overhead lines with a nominal voltage greater than 1000V".

Bidder shall quote such composite insulators which have proven use under foggy/humid operational conditions. The Bidder shall furnish evidence in the form of certification from the power utilities that the similar type of product supplied to them had been performing satisfactory. The Bidder shall also submit certified test report for an accelerated ageing test of 5000 hours such as that described in Annexure-C of IEC-61109 and other type test reports.

The parameters characterizing the insulators profile shall be as follows:

Table 7.1: 132kV Transmission Line

Sl. No.	Type of string	Basic Insulation Level		Creepage Factor (C.F.) *	No. of individual units per string (Nos)	Mechanical strength (kN) **
		Impulse Withstand Voltage (kV peak)	Power frequency withstand voltage (kV rms)			
1	Single "I" suspension	650	275	3.5	1	70
2	Single 'I' Tension				1	120
3	Double "I" suspension				2	2 x 70
4	Double "I" Tension				2	2 x 120

"*"C. F. = Creepage Factor for pollution level II, as described in Appendix – D of IEC 60815. Creepage distance (mm) = C.F X Arcing Distance of insulator.

"**"Mechanical strength of insulator string along with hardware fittings (kN).

For other technical parameters of insulators, please refer to the technical specification of given subsequent Chapter. Bidder shall submit GA drawing showing core diameter, the overall string length and other details of the insulator with the Bid.

Note:

The above parameters are applicable for installations upto an altitude of 1000m above mean sea level. For altitude exceeding 1000m above MSL, necessary altitude correction factor shall be applicable as per IEC or part thereof. Bidders shall furnish the suitable value after taking the altitude correction factors in Chapter 8: Technical Data Sheet (Guaranteed Technical Particulars) separately for each items as applicable.

(iii) Delete the entire Table of Annexure 1-B Basic Insulation Levels of Insulators, Chapter-7-Insulator and Accessories, Volume-II

(Bidder's Name)

1.0 TOWERS

S. No.	Description	Unit	DA	DB	DC	DD/DDE	DDM
	Manufacturer's Name						
	Country of origin						
	Applicable Standard						
	Years of Manufacturing Experience Years		Minimum 5				
	ISO Certificate attached yes/no						
	Manufacturer's test records attached yes/no						
1	Overall length of suspension insulator string from point of suspension to the centre of phase conductor clamp	mm					
2	Vertical clearance between the centre of supporting cross arm and point of attachment of live metal is connected	mm					
3	Overall length of tension insulator string assembled from point of attachment to cross arm to the point where jumper loop attaches to conductor	mm					
4	Minimum clearance of live metal to the structure steelwork at the point of the tension insulator in still air						
4.1	Jumper loop in still air mm						
4.2	Downward clearance of jumper loop in still air mm						
5	Maximum design stresses in tension members:						
5.1	Mild steel	Kg/mm^2					
5.2	High tensile steel	Kg/mm^2					
6	Maximum ratio of unsupported length of steel compression members to their least radius of gyration						
6.1	Main members						
6.2	Redundant						
6.3	Bracing members in tension only						
7	Steel to ASTM A36 / IS 2062 or other approved standard						
7.1	Elastic limit stress in tension members	kg/mm^2					
7.2	Ultimate stress in compression members (expressed as a function of L/R)	kg/mm^2					
8	Steel to ASTM A572 / IS 8500 or other approved standard						
8.1	Elastic limit stress in tension members	kg/mm^2					
8.2	Ultimate stress in compression members (expressed as a function of L/R)	kg/mm^2					
9	Bolts						
9.1	Property Class						
9.1	Ultimate tensile stress of bolts (H.T. steel)	kg/mm^2					
9.2	Ultimate shear capacity of bolts (H.T. steel)	kg/mm^2					
9.3	Ultimate bearing stress on bolts (H.T. steel)	kg/mm^2					
10	Basic span length m						
11	Minimum ground clearance of phase conductor at a temperature of 85 °C	m					
12	Final sag of phase conductor in still air at 85 °C and basic span	m					
13	Distance of phase conductor below the centre of cross arm, allowing for the length of insulator string	m					

S. No.	Description	Unit	DA	DB	DC	DD/DDE	DDM
14	Minimum vertical spacing between adjacent phase conductors	m					
15	Final conductor sag at everyday temperature in still air for basic span						
15.1	Phase conductor m						
15.2	OPGW	m					

Signature . . . .

As Partner of . . . .

Address . . . .

Date . . . .

Note: [illegible]

2.0 ACSR Conductor

S. No.	DESCRIPTION	UNIT	REQD.	OFFERED DATA
1			BEAR	
2		30/3.35		
2.1				
2.2				
2.3				
2.4				
3				
3.1		7/3.35		
3.2				
3.3				
4	m	23.45		
5	^{O}C		0.1093	
6	^{O}C			
7	kg	11340		
8		kg		
9	kg			
10		kg/m^{2}		
11	kg/m	1214		
12	$^{-6}$	^{O}C		
13	m	2000		
14	kg			
15				
15.1				
15.2	kg			
15.3				
	m			
	m			
16				
16.1				
16.2		kg/m^{3}		
16.3		kg		
17				
17.1	kg			

S. No.	DESCRIPTION	UNIT	REQD.	OFFERED DATA
17.2	T[illegible]	kg/m^2		
17.3	Cr[illegible]	m^2		
18	[illegible]			
18.1	[illegible]	kg/m^2		
18.2	[illegible] % [illegible]	kg/m^2		
18.3	E[illegible] 200 [illegible] %			
18.4	[illegible] %			
19	C[illegible]			
20	J[illegible]:			
20.1	T[illegible]			
20.2	Dist[illegible]			
20.3	Li[illegible]			
21	T[illegible] Yes/No	Yes		
21.1	Li[illegible]			
22	D[illegible] C[illegible] Yes/No	Yes		
23	D[illegible] D[illegible] Yes/No	Yes		

S[illegible] ....

As[illegible] ....

A[illegible] ....

D[illegible] ....

PRICE SCHEDULE

Nepal Electricity Authority

Transmission Directorate

New Modi-Lekhnath 132 kV Transmission Line Project

Price Schedule 1: Supply and Delivery of Plant and Equipment Foreign Origin

S.N.	Description	Country of Origin	Estimated Bill of Quantity			CIP-Nepal Border (Excluding Taxes and Duties)		Total Amount (Excludiing Taxes and Duties)
						F/C(USD)		F/C(USD)
			Unit	Quantity		Unit Rate	Amount	
1	2		3	4	5	6	7 = 4x6	
1.0	**TOWER AND LINE MATERIALS**							
1.1	**Fabrication & supply of following types of towers & tower extension parts complete with stubs setting template, step bolts, hangers, D-shackles, bolts & nuts etc but excluding tower accessories such as danger plates, number plates, phase plates, anti-climbing devices**							
1.1.1	**Suspension Tower DA**				WKG			
a)	[illegible]		[illegible]	9	220.44			
b)	Basic Weight +/-0mm Body Extension		No	9	3464.61			
c)	DA - 3M Extension		No	0	-556.59			
d)	DA + 3M Extension		No	0	556.59			
e)	DA +6M Extension		No	0	1265.64			
f)	DA +9M Extension		No	0	1800			
g)	DA -1.5m Leg Ext		No	3	-54			
h)	DA +1.5m Leg Ext		No	3	54			
i)	DA +3m Leg Ext		No	1	97			
j)	DA +4.5m Leg ext		No	3	142			
k)	DA +6 m Leg Ext		No	0	245			
l)	DA +7.5m Leg Ext		No	0	357			
m)	DA +9m Leg Ext		No	0	503			
1.1.2	**Tension Tower DB**				WKG			
a)	[illegible]		[illegible]	32	269.72			
b)	Basic Weight +/-0mm Body Extension		No	32	4767.68			
c)	DB -3M Extension		No	0	-769.85			
d)	DB +3M Extension		No	10	769.85			
e)	DB +6M Extension		No	0	1508.43			
f)	DB +9M Extension		No	2	2102.32			
g)	DB -1.5m Leg Ext		No	3	-79			
h)	DB +1.5m Leg Ext		No	2	79			
i)	DB +3m Leg Ext		No	5	167.62			
j)	DB +4.5m Leg ext		No	3	216.72			
k)	DB +6 m Leg Ext		No	1	289.41			
l)	DB +7.5m Leg Ext		No	2	378			
m)	DB +9m Leg Ext		No	2	557			
1.1.3	**Tension Tower DC**				WKG			
a)	[illegible]		[illegible]	18	299.64			
b)	Basic Weight +/-0mm Body Extension		No	18	5256.04			
c)	DC -3M Extension		No	0	-937.49			
d)	DC +3M Extension		No	0	937.49			
e)	DC +6M Extension		No	2	1774.04			
f)	DC +9M Extension		No	6	2670.55			
g)	DC+ 0 M stub steel		No	4	1404.78			
h)	DC+ 3 M stub steel		No	2	2325.5			
i)	DC+ 6 M stub steel		No	0	3169.25			
j)	DC+ 9 M stub steel		No	2	4227.97			
k)	DC -1.5m Leg Ext		No	3	-95			
l)	DC +1.5m Leg Ext		No	2	95			
m)	DC +3m Leg Ext		No	5	199			
n)	DC +4.5m Leg ext		No	3	267			

Price Schedule 1: Supply and Delivery of Plant and Equipment Foreign Origin

S.N.	Description	Country of Origin	Estimated Bill of Quantity			CIP-Nepal Border (Excluding Taxes and Duties)		Total Amount (Excludiing Taxes and Duties)
						F/C(USD)		F/C(USD)
			Unit	Quantity		Unit Rate	Amount	
1	2		3	4	5	6	7 = 4x6	
1.0	**TOWER AND LINE MATERIALS**							
a)	DC +6 mLeg Ext		No	1	357			
b)	DC +7.5mLeg Ext		No	2	443			
c)	DC +9mLeg Ext		No	2	593			
1.1.4	**Tension Tower DD**				WKG			
a)	Set		Set	52	423.72			
b)	Basic Tower +/-0m Body Ext		No	52	6668			
c)	DD -3M Body		No	0	-1390			
d)	DD +3M Body		No	6	1389			
e)	DD +6M Body		No	11	2171			
f)	DD +9M Body		No	2	3247			
g)	DD+ 0 M Stub		No	4	1841.8			
h)	DD+ 3 M Stub		No	2	3074.6			
i)	DD+ 6 M Stub		No	2	3984.6			
j)	DD+ 9 M Stub		No	2	5166.86			
k)	DD -1.5mLeg Ext		No	3	-152			
l)	DD +1.5mLeg Ext		No	2	152			
m)	DD +3mLeg Ext		No	5	283.78			
n)	DD +4.5mLeg Ext		No	3	356.2			
o)	DD +6 mLeg Ext		No	1	471.15			
p)	DD +7.5mLeg Ext		No	2	592			
q)	DD +9mLeg Ext		No	2	750			
1.1.5	**Tension Tower DDM**				WKG			
a)	Set		Set	10	577.2302			
b)	Basic Tower +/-0m Body		No	10	9083.76			
c)	DDM-3M Body		No	0	-1161.1			
d)	DDM+3M Body		No	1	1660.34			
e)	DDM+6M Body		No	0	2481.79			
f)	DDM+9M Body		No	4	3836.24			
g)	DDM+0 M Stub		No	0	2220.86			
h)	DDM+3 M Stub		No	0	3398.78			
i)	DDM+6 M Stub		No	1	4506.7			
j)	DDM+9 M Stub		No	0	6010.28			
k)	DDM-1.5mLeg Ext		No	1	-166			
l)	DDM+1.5mLeg Ext		No	3	166			
m)	DDM+3mLeg Ext		No	2	315.44			
n)	DDM+4.5mLeg Ext		No	3	404.55			
o)	DDM+6 mLeg Ext		No	1	547.21			
p)	DDM+7.5mLeg Ext		No	2	689			
q)	DDM+9mLeg Ext		No	0	901			
	Total of 1							
2.0	**TOWER ACCESSORIES AND EARTHING**							
2.1	**Tower Accessories**							
i)	Danger Plate		No	121				
ii)	Number Plate		No	121				
iii)	Anti Climbing Device		Set	121				
iv)	Bird Guard (set of 3)		Set	242				
v)	Circular Disc (set of 3)		Set	242				
vi)	Anti Theft Bolt		Set	50				
vii)	Bird Guard		Set	50				
	Total of Sub - Total 2.1							
2.2	**Tower Earthing Material**							

Price Schedule 1: Supply and Delivery of Plant and Equipment Foreign Origin

S.N.	Description	Country of Origin	Estimated Bill of Quantity			CIP-Nepal Border (Excluding Taxes and Duties)		Total Amount (Excludiing Taxes and Duties)
						F/C(USD)		F/C(USD)
			Unit	Quantity		Unit Rate	Amount	
1	2		3	4	5	6	7 = 4x6	
1.0	**TOWER AND LINE MATERIALS**							
i)	[illegible]		[illegible]	65				
ii)	[illegible]							
a	[illegible] - 25 m		[illegible]	35				
b	[illegible] - 50 m		[illegible]	20				
c	[illegible] - 100M		[illegible]	15				
	Total of Sub - Total 2.2							
	Total of 2							
3.0	**LINE MATERIALS**							
3.1	**Conductor and Accessories**							
i)	ACSR [illegible] "BEAR [illegible]		km	280				
ii)	[illegible] BEAR [illegible]		[illegible]	2844				
iii)	[illegible] ACSR "BEAR [illegible]		No.	160				
iv)	[illegible] ACSR "BEAR [illegible]		No.	160				
	Sub - Total of 3.1							
3.2	**Optical Fiber ground wire (OPGW) and accessories**							
a	[illegible]		km	48.00				
b	[illegible]		No.	244.00				
	Sub - Total of 3.2							
3.3	**Insulator strings with insulators, attachment assemblies and arcing horns all complete for ACSR "BEAR" conductor and attachment assemblies all complete for OPGW**							
i)	[illegible] "BEAR [illegible] (650kV BIL [illegible])		[illegible]	72				
ii)	[illegible] "BEAR [illegible] (650kV BIL [illegible])		[illegible]	600				
iii)	[illegible] "BEAR [illegible] (650kV BIL [illegible])		[illegible]	744				
iv)	[illegible] "BEAR [illegible] (650kV BIL [illegible])		[illegible]	186				
v)	[illegible]		[illegible]	9				
vi)	[illegible]		[illegible]	121				
	Sub - Total of 3.3							
3.4	**Optical Fiber and accessories**							
i)	[illegible]		km	2				
ii)	[illegible]		[illegible]	4				
	Sub - Total of 3.4							
	Total of 3							

Price Schedule 1: Supply and Delivery of Plant and Equipment Foreign Origin

S.N.	Description	Country of Origin	Estimated Bill of Quantity			CIP-Nepal Border (Excluding Taxes and Duties)		Total Amount (Excludiing Taxes and Duties)
						F/C(USD)		F/C(USD)
			Unit	Quantity		Unit Rate	Amount	
1	2		3	4	5	6	7 = 4x6	
1.0	**TOWER AND LINE MATERIALS**							
4.0	**SUPPLY OF SPARES**							
4.1	**Supply of Basic Tower with extension + 9m including Stub**							
i)	[illegible]		No	1				
i)	[illegible]		No	1				
i)	[illegible]		No	1				
i)	[illegible]		No	1				
	Sub - Total of 4.1							
4.2	**Conductor and OPGW accessories**							
i)	[illegible]		No	10				
i)	[illegible]		No	10				
i)	[illegible]		No	5				
i)	[illegible]		No	5				
i)	[illegible]		No	24				
i)	[illegible]		No	12				
i)	[illegible]		Km	0.50				
	Sub-Total of 4.2							
	Total of 4 (Spares)							
5.0	**TOOLS AND TACKELS**							
5.1	[illegible]		Set	1				
5.2	[illegible]		Set	1				
5.3	[illegible]		Set	1				
5.4	[illegible]		m	1,000				
5.5	[illegible]		No	3				
5.6	[illegible]		Set	3				
5.7	[illegible]		Set	1				
5.8	[illegible]		Set	5				
5.9	[illegible]		Pair	5				
5.10	[illegible]		Set	1				
5.11	[illegible]		Set	10				
5.12	[illegible]		No	1				
5.13	[illegible]		No	1				
5.14	[illegible]		No	1				
5.15	[illegible]		Set	1				
5.16	[illegible]		Set	1				
5.17	[illegible]		Set	4				
5.18	[illegible]		Set	4				
	Totol of 5							
						GRAND TOTAL		

Note: Provision of Leg extension is based on assumption to reduce the benching at hilly site, it shall be required to be verified the requirement at each location of towers

Nepal Electricity Authority

Transmission Directorate

New Modi-Lekhnath 132 kV Transmission Line Project

Price Schedule 2: Supply and Delivery of Plant and Equipment within Employer's Country

S.N.	Description	Unit	Quantity		Unit Price (USD)	Total Price (USD)	Remarks
1	2	3	4		5	6 = 4x5	
1.0	**TOWER AND LINE MATERIALS**						
1.1	**Fabrication & supply of following types of towers & tower extension parts complete with stubs setting template, step bolts, hangers, D-shackles, bolts & nuts etc but excluding tower accessories such as danger plates, number plates, phase plates, anti-climbing devices**						
1.1.1	**Suspension Tower DA**			WKG			
a)	[illegible]	Set	9	220.44			
b)	Basic Tower +/-0m Body Extension	No	9	3464.61			
c)	DA - 3M Extension	No	0	-556.59			
d)	DA + 3M Extension	No	4	556.59			
e)	DA +6M Extension	No	2	1265.64			
f)	DA +9M Extension	No	0	1800			
g)	DA -1.5m Leg Ext	No	3	-54			
h)	DA +1.5m Leg Ext	No	3	54			
i)	DA +3m Leg Ext	No	1	97			
j)	DA +4.5m Leg Ext	No	3	142			
k)	DA +6 m Leg Ext	No	0	245			
l)	DA +7.5m Leg Ext	No	0	357			
m)	DA +9m Leg Ext	No	0	503			
1.1.2	**Tension Tower DB**			WKG			
a)	[illegible]	Set	32	269.72			
b)	Basic Tower +/-0m Body Extension	No	32	4767.68			
c)	DB -3M Extension	No	0	-769.85			
d)	DB +3M Extension	No	10	769.85			
e)	DB +6M Extension	No	0	1508.43			
f)	DB +9M Extension	No	2	2102.32			
g)	DB -1.5m Leg Ext	No	3	-79			
h)	DB +1.5m Leg Ext	No	2	79			
i)	DB +3m Leg Ext	No	5	167.62			
j)	DB +4.5m Leg Ext	No	3	216.72			
k)	DB +6 m Leg Ext	No	1	289.41			
l)	DB +7.5m Leg Ext	No	2	378			
m)	DB +9m Leg Ext	No	2	557			
1.1.3	**Tension Tower DC**			WKG			
a)	[illegible]	Set	18	299.64			
b)	Basic Tower +/-0m Body Extension	No	18	5256.04			
c)	DC -3M Extension	No	0	-937.49			
d)	DC +3M Extension	No	0	937.49			
e)	DC +6M Extension	No	2	1774.04			
f)	DC +9M Extension	No	6	2670.55			
g)	DC+ 0 M strengthened	No	4	1404.78			
h)	DC+ 3 M strengthened	No	2	2325.5			
i)	DC+ 6 M strengthened	No	0	3169.25			
j)	DC+ 9 M strengthened	No	2	4227.97			
k)	DC -1.5m Leg Ext	No	3	-95			
l)	DC +1.5m Leg Ext	No	2	95			
m)	DC +3m Leg Ext	No	5	199			

Price Schedule 2: Supply and Delivery of Plant and Equipment within Employer's Country

S.N.	Description	Unit	Quantity		Unit Price (USD)	Total Price (USD)	Remarks
1	2	3	4		5	6 = 4x5	
i)	DC +4.5m Leg Ext.	No.	3	267			
ii)	DC +6 m Leg Ext.	No.	1	357			
iii)	DC +7.5m Leg Ext.	No.	2	443			
iv)	DC +9m Leg Ext.	No.	2	593			
1.1.4	**Tension Tower DD**			WKG			
a)	Base	Set	52	423.72			
b)	Basic Tower Body +/-0m Body Extension	No.	52	6668			
c)	DD -3M Body Extension	No.	0	-1390			
d)	DD +3M Body Extension	No.	6	1389			
e)	DD +6M Body Extension	No.	11	2171			
f)	DD +9M Body Extension	No.	2	3247			
g)	DD+ 0 M strengthened	No.	4	1841.8			
h)	DD+ 3 M strengthened	No.	2	3074.6			
i)	DD+ 6 M strengthened	No.	2	3984.6			
j)	DD+ 9 M strengthened	No.	2	5166.86			
k)	DD -1.5m Leg Ext.	No.	3	-152			
l)	DD +1.5m Leg Ext.	No.	2	152			
m)	DD +3m Leg Ext.	No.	5	283.78			
n)	DD +4.5m Leg Ext.	No.	3	356.2			
o)	DD +6 m Leg Ext.	No.	1	471.15			
p)	DD +7.5m Leg Ext.	No.	2	592			
q)	DD +9m Leg Ext.	No.	2	750			
1.1.5	**Tension Tower DDM**			WKG			
a)	Base	Set	10	577.2302			
b)	Basic Tower Body +/-0m Body Extension	No.	10	9083.76			
c)	DDM -3M Body Extension	No.	0	-1161.1			
d)	DDM +3M Body Extension	No.	1	1660.34			
e)	DDM +6M Body Extension	No.	0	2481.79			
f)	DDM +9M Body Extension	No.	4	3836.24			
g)	DDM 0 M strengthened	No.	0	2220.86			
h)	DDM 3 M strengthened	No.	0	3398.78			
i)	DDM 6 M strengthened	No.	1	4506.7			
j)	DDM 9 M strengthened	No.	0	6010.28			
k)	DDM 1.5m Leg Ext.	No.	1	-166			
l)	DDM +1.5m Leg Ext.	No.	3	166			
m)	DDM +3m Leg Ext.	No.	2	315.44			
n)	DDM +4.5m Leg Ext.	No.	3	404.55			
o)	DDM +6 m Leg Ext.	No.	1	547.21			
p)	DDM +7.5m Leg Ext.	No.	2	689			
q)	DDM +9m Leg Ext.	No.	0	901			
	Total of 1						
2.0	**TOWER ACCESSORIES AND EARTHING**						
2.1	**Tower Accessories**						
i)	Danger Plate	No.	121				
ii)	Number Plate	No.	121				
iii)	Anti Climbing Device	Set	121				
iv)	Phase Plate (set of 3)	Set	242				
v)	Circuit plate (set of 3)	Set	242				
vi)	Anti theft bolt	Set	50				
vii)	Bird Guard	Set	50				

Price Schedule 2: Supply and Delivery of Plant and Equipment within Employer's Country

S.N.	Description	Unit	Quantity		Unit Price (USD)	Total Price (USD)	Remarks
1	2	3	4		5	6 = 4x5	
	Total of Sub - Total 2.1						
2.2	**Tower Earthing Material**						
i)	[illegible]	Set	65				
ii)	[illegible]						
a	[illegible] - 25 m	Set	35				
b	[illegible] - 50 m	Set	20				
c	[illegible] - 100M	Set	15				
	Total of Sub - Total 2.2						
	Total of 2						
3.0	**LINE MATERIALS**						
3.1	**Conductor and Accessories**						
i)	ACSR [illegible] "BEAR [illegible]	km	280				
ii)	[illegible] "BEAR [illegible]	Set	2844				
iii)	[illegible] ACSR "BEAR [illegible]	No	160				
iv	[illegible] ACSR "BEAR [illegible]	No	160				
	Sub - Total of 3.1						
3.2	**Optical Fiber ground wire (OPGW) and accessories**						
a	[illegible]	km	48.00				
b	[illegible]	No	244.00				
	Sub - Total of 3.2						
3.3	**Insulator strings with insulators, attachment assemblies and arcing horns all complete for ACSR "BEAR" conductor and attachment assemblies all complete for OPGW**						
i)	[illegible] "BEAR [illegible]	Set	72				
ii)	[illegible] "BEAR [illegible]	Set	600				
iii)	[illegible] "BEAR [illegible]	Set	744				
iv)	[illegible] "BEAR [illegible]	Set	186				
v	[illegible]	Set	9				
vi	[illegible]	Set	121				
	Sub - Total of 3.3						
3.4	**Optical Fiber and accessories**						
i)	[illegible]	km	2				
ii)	[illegible]	Set	4				
	Sub - Total of 3.4						

Price Schedule 2: Supply and Delivery of Plant and Equipment within Employer's Country

S.N.	Description	Unit	Quantity		Unit Price (USD)	Total Price (USD)	Remarks
1	2	3	4		5	6 = 4x5	
	Total of 3						
4.0	**SUPPLY OF SPARES**						
4.1	**Supply of Basic Tower with extension + 9m including Stub**						
i)	[illegible] DA+9M [illegible]	No	1				
ii)	[illegible] DB+9M [illegible]	No	1				
iii)	[illegible] DC+9M [illegible]	No	1				
iv)	[illegible] DD+9M [illegible]	No	1				
	Sub - Total of 4.1						
4.2	**Conductor and OPGW accessories**						
i)	[illegible] 6ACSR'BEAR [illegible]	No	10				
ii)	[illegible] 6ACSR'BEAR [illegible]	No	10				
iii)	[illegible] 70K650NBIL [illegible]	No	5				
iv)	[illegible] 120N [illegible] 650NBIL [illegible]	No	5				
v)	[illegible] 6ACSR'BEAR	No	24				
vi)	[illegible] OPGW	No	12				
vii)	[illegible]	Km	0.50				
	Sub-Total of 4.2						
	Total of 4 (Spares)						
5.0	**TOOLS AND TACKELS**						
5.1	[illegible]	Set	1				
5.2	[illegible]	Set	1				
5.3	[illegible]	Set	1				
5.4	[illegible] 35 sq.m	m	1,000				
5.5	[illegible] (35 sq.m) [illegible]	No	3				
5.6	[illegible] 2,3 t	Set	3				
5.7	[illegible]	Set	1				
5.8	[illegible]	Set	5				
5.9	[illegible]	Pair	5				
5.10	[illegible] 2 set [illegible] 6 "BEAR [illegible] OPGW	Set	1				
5.11	[illegible]	Set	10				
5.12	[illegible] (10000 V) [illegible]	No	1				
5.13	[illegible]	No	1				
5.14	[illegible]	No	1				
5.15	[illegible] 5 M [illegible]	Set	1				
5.16	[illegible] 0 M [illegible]	Set	1				
5.17	[illegible] 6ACSR'BEAR [illegible]	Set	4				
5.18	[illegible] 6"OPGW [illegible]	Set	4				
	Totol of 5						
5.15	[illegible] 5 M [illegible]	Set	1				
5.16	[illegible] 0 M [illegible]	Set	1				
5.17	[illegible] 6ACSR'BEAR [illegible]	Set	4				
5.18	[illegible] 6"OPGW [illegible]	Set	4				
	Totol of 5						
					GRAND TOTAL		

Price Schedule 2: Supply and Delivery of Plant and Equipment within Employer's Country

S.N.	Description	Unit	Quantity		Unit Price (USD)	Total Price (USD)	Remarks
1	2	3	4		5	6 = 4x5	
Note: Provision of Leg extension is based on assumption to reduce the benching at hilly site, it shall be required to be verified the requirement at each location of towers							

Nepal Electricity Authority
Transmission Directorate
New Modi-Lekhnath 132 kV Transmission Line Project

Price Schedule 3. Design Services

S.N.	Description of Works	Unit	Quantity	Unit Price (USD)	Total Price (USD)
1	2	3	4	5	6 = 4x5
	Not Applicable				

Bidders Authorized Representative Signature: Bidders Stamp:

Nepal Electricity Authority

Transmission Directorate

New Modi-Lekhnath 132 kV Transmission Line Project

Price Schedule 4. Installation Services

Part - A: Local Transportation, Insurance and other Incidental services (including port clearance etc.)

S.N.	Description	Unit	Quantity	Weight in Kgs	Unit Price (USD)	Total Price (USD)
1	2	3	4		5	6 = 4x5
1.0	**TOWER AND LINE MATERIALS**					
1.1	**Fabrication & supply of following types of towers & tower extension parts complete with stubs setting template, step bolts, hangers, D-shackles, bolts & nuts etc but excluding tower accessories such as danger plates, number plates, phase plates, anti-climbing devices**					
1.1.1	**Suspension Tower DA**			WKG		
a)	[illegible]	[illegible]	9	220.44		
b)	Ba[illegible]+/-0m Bo[illegible]	No	9	3464.61		
c)	DA - 3M[illegible]	No	0	-556.59		
d)	DA + 3M[illegible]	No	2	556.59		
e)	DA +6M[illegible]	No	0	1265.64		
f)	DA +9M[illegible]	No	0	1800		
g)	DA -1.5m Le[illegible]	No	3	-54		
h)	DA +1.5m Le[illegible]	No	3	54		
i)	DA +3m Le[illegible]	No	1	97		
j)	DA +4.5m Le[illegible]	No	3	142		
k)	DA +6 m Le[illegible]	No	0	245		
l)	DA +7.5m Le[illegible]	No	0	357		
m)	DA +9m Le[illegible]	No	0	503		
1.1.2	**Tension Tower DB**			WKG		
a)	[illegible]	[illegible]	32	269.72		
b)	Ba[illegible]+/-0m Bo[illegible]	No	32	4767.68		
c)	DB -3M[illegible]	No	0	-769.85		
d)	DB +3M[illegible]	No	10	769.85		
e)	DB +6M[illegible]	No	0	1508.43		
f)	DB +9M[illegible]	No	2	2102.32		
g)	DB -1.5m Le[illegible]	No	3	-79		
h)	DB +1.5m Le[illegible]	No	2	79		
i)	DB +3m Le[illegible]	No	5	167.62		
j)	DB +4.5m Le[illegible]	No	3	216.72		
k)	DB +6 m Le[illegible]	No	1	289.41		
l)	DB +7.5m Le[illegible]	No	2	378		
m)	DB +9m Le[illegible]	No	2	557		
1.1.3	**Tension Tower DC**			WKG		
a)	[illegible]	[illegible]	18	299.64		
b)	Ba[illegible]+/-0m Bo[illegible]	No	18	5256.04		
c)	DC -3M[illegible]	No	0	-937.49		
d)	DC +3M[illegible]	No	0	937.49		
e)	DC +6M[illegible]	No	2	1774.04		
f)	DC +9M[illegible]	No	6	2670.55		
g)	DC+0M strengthened	No	4	1404.78		
h)	DC+3M strengthened	No	2	2325.5		
i)	DC+6M strengthened	No	0	3169.25		
j)	DC+9M strengthened	No	2	4227.97		

Price Schedule 4. Installation Services

Part - A: Local Transportation, Insurance and other Incidental services (including port clearance etc.)

S.N.	Description	Unit	Quantity	Weight in Kgs	Unit Price (USD)	Total Price (USD)
1	2	3	4		5	6 = 4x5
k	DC -1.5m Ex	No	3	-95		
l	DC +1.5m Ex	No	2	95		
m	DC +3m Ex	No	5	199		
n	DC +4.5m Ex	No	3	267		
o	DC +6 m Ex	No	1	357		
p	DC +7.5m Ex	No	2	443		
q	DC +9m Ex	No	2	593		
1.1.4	**Tension Tower DD**			WKG		
a		Set	52	423.72		
b	Base with +/-0m Body Ex	No	52	6668		
c	DD -3m	No	0	-1390		
d	DD +3m	No	6	1389		
e	DD +6m	No	11	2171		
f	DD +9m	No	2	3247		
g	DD+0M strengthened	No	4	1841.8		
h	DD+3M strengthened	No	2	3074.6		
i	DD+6M strengthened	No	2	3984.6		
j	DD+9M strengthened	No	2	5166.86		
k	DD -1.5m Ex	No	3	-152		
l	DD +1.5m Ex	No	2	152		
m	DD +3m Ex	No	5	283.78		
n	DD +4.5m Ex	No	3	356.2		
o	DD +6 m Ex	No	1	471.15		
p	DD +7.5m Ex	No	2	592		
q	DD +9m Ex	No	2	750		
1.1.5	**Tension Tower DDM**			WKG		
a		Set	10	577.2302		
b	Base with +/-0m body	No	10	9083.76		
c	DDM-3M	No	0	-1161.1		
d	DDM+3M	No	1	1660.34		
e	DDM+6M	No	0	2481.79		
f	DDM+9M	No	4	3836.24		
g	DDM+0M strengthened	No	0	2220.86		
h	DDM+3M strengthened	No	0	3398.78		
i	DDM+6M strengthened	No	1	4506.7		
j	DDM+9M strengthened	No	0	6010.28		
k	DDM-1.5m Ex	No	1	-166		
l	DDM+1.5m Ex	No	3	166		
m	DDM+3m Ex	No	2	315.44		
n	DDM+4.5m Ex	No	3	404.55		
o	DDM+6 m Ex	No	1	547.21		
p	DDM+7.5m Ex	No	2	689		
q	DDM+9m Ex	No	0	901		
	Total of 1					
2.0	**TOWER ACCESSORIES AND EARTHING**					
2.1	**Tower Accessories**					
i	Danger Plate	No	121			
i	Number Plate	No	121			

Price Schedule 4. Installation Services

Part - A: Local Transportation, Insurance and other Incidental services (including port clearance etc.)

S.N.	Description	Unit	Quantity	Weight in Kgs	Unit Price (USD)	Total Price (USD)
1	2	3	4		5	6 = 4x5
i)			121			
ii)			242			
v)			242			
v)			50			
v)			40			
	Total of Sub - Total 2.1					
2.2	**Tower Earthing Material**					
i)			65			
ii)						
a	- 25 m		35			
b	- 50 m		20			
c	- 100M		15			
	Total of Sub - Total 2.2					
	Total of 2					
3.0	**LINE MATERIALS**					
3.1	**Conductor and Accessories**					
i)	ACSR "BEAR"		280.000			
ii)	BEAR		2,844			
iii)	ACSR "BEAR"		160			
iv)	ACSR "BEAR"		160			
	Sub - Total of 3.1					
3.2	**Optical Fiber ground wire (OPGW) and accessories**					
a			48.000			
b			244			
	Sub - Total of 3.2					
3.3	**Insulator strings with insulators, attachment assemblies and arcing horns all complete for ACSR "BEAR" conductor and attachment assemblies all complete for OPGW**					
i)	"BEAR (650kN BIL		54			
ii)	"BEAR (650kN BIL		600			
iii)	"BEAR (650kN BIL		744			
iv)	"BEAR (650kN BIL		186			
v)			9			

Price Schedule 4. Installation Services

Part - A: Local Transportation, Insurance and other Incidental services (including port clearance etc.)

S.N.	Description	Unit	Quantity	Weight in Kgs	Unit Price (USD)	Total Price (USD)
1	2	3	4		5	6 = 4x5
i)		LS	121			
	Sub - Total of 3.3					
3.4	**Optical Fiber and accessories**					
i)		km	2			
i)		LS	4			
	Sub - Total of 3.4					
	Total of 3					
4.0	**SUPPLY OF SPARES**					
4.1	**Supply of Basic Tower with extension + 9m including Stub**					
i)		No	1	5,265		
i)		No	1	6,870		
i)		No	1	7,927		
i)		No	1	9,915		
	Sub - Total of 4.1					
4.2	**Conductor and OPGW accessories**					
i)		No	10			
i)		No	10			
i)		No	5			
i)		No	5			
i)		No	24			
i)		No	12			
i)		Km	0.50			
	Sub-Total of 4.2					
	Total of 4 (Spares)					
5.0	**TOOLS AND TACKELS**					
5.1		LS	1			
5.2		LS	1			
5.3		LS	1			
5.4		m	1,000			
5.5		No	3			
5.6		LS	3			
5.7		LS	1			
5.8		LS	5			
5.9		Pc	5			
5.10		LS	1			
5.11		LS	10			
5.12		No	1			
5.13		No	1			
5.14		No	1			
5.15		LS	1			

Price Schedule 4. Installation Services

Part - A: Local Transportation, Insurance and other Incidental services (including port clearance etc.)

S.N.	Description	Unit	Quantity	Weight in Kgs	Unit Price (USD)	Total Price (USD)
1	2	3	4		5	6 = 4x5
5.16	[illegible]	[illegible]	1			
5.17	[illegible]	[illegible]	4			
5.18	[illegible]	[illegible]	4			
	Totol of 5					
					GRAND TOTAL	

Note: Provision of Leg extension is based on assumption to reduce the benching at hilly site, it shall be required to be verified the requirement at each location of towers

Nepal Electricity Authority

Transmission Directorate

New Modi-Lekhnath 132 kV Transmission Line Project

Price Schedule 4. Installation Services

Part - B: Installation Charges and Civil Works

S No.	Description	Unit	Qty.	Weight In Kgs	Unit Charge In USD	Total Amount In USD
1	Survey					
a		KM	42.20			
b			1.00			
c			1.00			
	Total of 1					
2	Soil investigation					
a			20			
b			32			
3	Measurements of soil resistivity/ground resistance		120			
4	Erection of towers with its body and leg extensions (complete) including bolt & nuts, tack welding and supply and application of enamel & zinc rich paint					
4.1	Tower type DA			WKG		
a			9	220.44		
b			9	3464.61		
c	DA - 3		0	-556.59		
d	DA + 3		0	556.59		
e	DA +6		0	1265.64		
f	DA +9		0	1800		
g	DA -1.5m Leg Ex		3	-54		
h	DA +1.5m Leg Ex		3	54		
i	DA +3m Leg Ex		1	97		
j	DA +4.5m Leg Ex		3	142		
k	DA +6 m Leg Ex		0	245		
l	DA +7.5m Leg Ex		0	357		
m	DA +9m Leg Ex		0	503		
4.2	Tension Tower DB			WKG		
a			32	269.72		
b			32	4767.68		
c	DB -3		0	-769.85		
d	DB +3		10	769.85		
e	DB +6		0	1508.43		
f	DB +9		2	2102.32		
g	DB -1.5m Leg Ex		3	-79		
h	DB +1.5m Leg Ex		2	79		

Price Schedule 4. Installation Services

Part - B: Installation Charges and Civil Works

S No.	Description	Unit	Qty.	Weight In	Unit Charge In USD	Total Amount In USD
				Kgs		
i)	DB +3m Leg Ext	Nos	5	167.62		
j)	DB +4.5m Leg Ext	Nos	3	216.72		
k)	DB +6 m Leg Ext	Nos	1	289.41		
l)	DB +7.5m Leg Ext	Nos	2	378		
m)	DB +9m Leg Ext	Nos	2	557		
4.3	**Tension Tower DC**			**Wt. KG**		
a)	Stub	Sets	18	299.64		
b)	Basic Tower +/-0m [illegible]	Nos	18	5256.04		
c)	DC -3M [illegible]	Nos	0	-937.49		
d)	DC +3M [illegible]	Nos	1	937.49		
e)	DC +6M [illegible]	Nos	0	1774.04		
f)	DC +9M [illegible]	Nos	2	2670.55		
g)	DC+0M [illegible] Nos 6	1404.78				
h)	DC+3M [illegible] Nos 4	2325.5				
i)	DC+6M [illegible] Nos 2	3169.25				
j)	DC+9M [illegible] Nos 0	4227.97				
k)	DC -1.5m Leg Ext	Nos	2	-95		
l)	DC +1.5m Leg Ext	Nos	3	95		
m)	DC +3m Leg Ext	Nos	2	199		
n)	DC +4.5m Leg Ext	Nos	5	267		
o)	DC +6 m Leg Ext	Nos	3	357		
p)	DC +7.5m Leg Ext	Nos	1	443		
q)	DC +9m Leg Ext	Nos	2	593		
4.4	**Tension Tower DD/DDE**			**Wt. KG**		
a)	Stub	Sets	52	423.72		
b)	Basic Tower +/-0m [illegible]	Nos	52	6668		
c)	DD -3M [illegible]	Nos	0	-1390		
e)	DD +3M [illegible]	Nos	6	1389		
f)	DD +6M [illegible]	Nos	11	2171		
g)	DD +9M [illegible]	Nos	2	3247		
h)	DD+0M [illegible] Nos 4	1841.8				
i)	DD+3M [illegible] Nos 2	3074.6				
j)	DD+6M [illegible] Nos 2	3984.6				
k)	DD+9M [illegible] Nos 2	5166.86				
l)	DD -1.5m Leg Ext	Nos	3	-152		
m)	DD +1.5m Leg Ext	Nos	2	152		
n)	DD +3m Leg Ext	Nos	5	283.78		
o)	DD +4.5m Leg Ext	Nos	3	356.2		
p)	DD +6 m Leg Ext	Nos	1	471.15		
q)	DD +7.5m Leg Ext	Nos	2	592		
r)	DD +9m Leg Ext	Nos	2	750		
4.5	**Tension Tower DDM**			**Wt. KG**		
a)	Stub	Sets	10	577.230172		
b)	Basic Tower +/-0m [illegible]	Nos	10	9083.76		
c)	DDM-3M [illegible]	Nos	0	-1161.1		
e)	DDM+3M [illegible]	Nos	1	1660.34		
f)	DDM+6M [illegible]	Nos	0	2481.79		

Price Schedule 4. Installation Services

Part - B: Installation Charges and Civil Works

S No.	Description	Unit	Qty.	Weight In Kgs	Unit Charge In USD	Total Amount In USD
g	DDM-9 Nos	Nos	4	3836.24		
h	DDM-0 Nos	Nos	0	2220.86		
i	DDM-3 Nos	Nos	0	3398.78		
j	DDM-6 Nos	Nos	1	4506.7		
k	DDM-9 Nos	Nos	0	6010.28		
l	DDM-1.5m Leg Ext	Nos	1	-166		
m	DDM-1.5m Leg Ext	Nos	3	166		
n	DDM-3m Leg Ext	Nos	2	315.44		
o	DDM-4.5m Leg ext	Nos	3	404.55		
p	DDM-6 m Leg Ext	Nos	1	547.21		
q	DDM-7.5m Leg Ext	Nos	2	689		
r	DDM-9m Leg Ext	Nos	0	901		
	Total of 4					-
5	**Work associated with construction of tower foundations including stub setting**					
5.1	**Tower type DA (for all type of body and leg extensions**				9	
a	Dry Soil	Nos	2			
b	Wet Soil	Nos	1			
c	Fly Ash Soil	Nos	0			
d	Dry Fissured Rock	Nos	2			
e	Wet Fissured Rock	Nos	2			
f	Hard Fissured Rock	Nos	0			
g	Hard Rock	Nos	2			
h	Swamp	Nos	0			
5.2	**Tower type DB (for all type of body and leg extensions**				32	
a	Dry Soil	Nos	12			
b	Wet Soil	Nos	4			
c	Fly Ash Soil	Nos	3			
d	Dry Fissured Rock	Nos	5			
e	Wet Fissured Rock	Nos	2			
f	Hard Fissured Rock	Nos	0			
g	Hard Rock	Nos	5			
h	Swamp	Nos	1			
5.3	**Tower type DC (for all type of body and leg extensions**				18	
a	Dry Soil	Nos	7			
b	Wet Soil	Nos	0			
c	Fly Ash Soil	Nos	1			
d	Dry Fissured Rock	Nos	5			
e	Wet Fissured Rock	Nos	0			
f	Hard Fissured Rock	Nos	0			
g	Hard Rock	Nos	5			
h	Swamp	Nos	0			
5.4	**Tower type DD/DDE (for all type of body and leg extensions**				52	
a	Dry Soil	Nos	16			
b	Wet Soil	Nos		2		

Price Schedule 4. Installation Services

Part - B: Installation Charges and Civil Works

S No.	Description	Unit	Qty.	Weight In Kgs	Unit Charge In USD	Total Amount In USD
c	Fly[illegible]	No	2			
d	Dry Fi[illegible]	No	8			
e	Wet Fi[illegible]	No	2			
f	[illegible] Fi[illegible]	No	1			
g	Ha[illegible]	No	17			
h	[illegible]	No	4			
5.5	**Tower type DDM (for all type of body and leg extensions**				10	
a	Dry[illegible]	No	4			
b	We[illegible]	No	0			
c	Fly[illegible]	No	0			
d	Dry Fi[illegible]	No	3			
e	Wet Fi[illegible]	No	1			
f	[illegible] Fi[illegible]	No	1			
g	Ha[illegible]	No	1			
	Total of 5					
6	**Installation of tower accessories and earthing**					
6.1	**Tower accessories**					
a	Da[illegible]	No	121			
b	[illegible]	No	121			
c	An[illegible]	Set	121			
d	Bo[illegible] (set 3)	Set	242			
e	Cir[illegible] (set 3)	Set	242			
f	An[illegible]	Set	50			
g	Bir[illegible]	Set	40			
6.2	**Installation of tower earthing materials**					
a	[illegible]	Set	65			
b	Co[illegible]					
i	Co[illegible]- 25M	Set	35			
i	Co[illegible]- 50M	Set	20			
i	Co[illegible]- 100M	Set		15		
	Total of 6					
7	**Installation of line materials**					
7.1	**Stringing of conductor and ground wire**					
a	ACSR BEAR [illegible]	Ckt KM	280			
b	[illegible] (24 [illegible]	KM	48			
c	[illegible]	Set	4			
	Total of 7					
8	**Protection of tower footing**					

Price Schedule 4. Installation Services

Part - B: Installation Charges and Civil Works

S No.	Description	Unit	Qty.	Weight In Kgs	Unit Charge In USD	Total Amount In USD
a	PCC (1:4	Cum	2500			
b		Cum	3500			
c		Cum	2200			
c	:2:4	Cum	850			
d		Cum	200			
Total of 8						
Grand Total						

Nepal Electricity Authority
Transmission Directorate
New Modi-Lekhnath 132 kV Transmission Line Project

Price Schedule5: Grand Summary

S.N.	Description of Works	Foreign Price (Excluding Vat and Taxes)		Local Price (Excluding Vat and Taxes)	Remarks
1	2	Foreign Currency	Amount	USD	
1	**Price Shedule No. 1** Plant and Equipment (Including Mandatory Spares Parts) Supplied from Abroad	USD			
2	**Price Shedule No. 2** Plant and Equipment (Including Mandatory Spares Parts) Supplied within Employer's Country	USD			
3	**Price Schedule No. 3** Design Services	USD			
4.a	**Price Shedule No. 4: A** Local Transportation, Insurance and other Incidental services (including port clearance etc.)	USD			
4.b	**Price Shedule No. 4: B** Installation Charges and Civil Works	USD			
5	**GRAND TOTAL (Excluding VAT and Custom Duty (to Bid Form)**	**USD**			

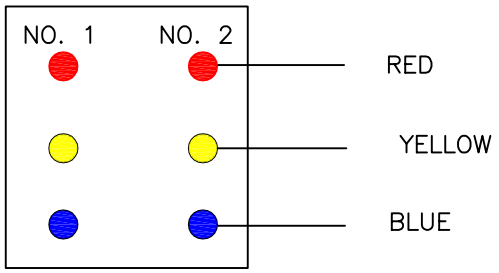
Bidders Authorized Representative Signature: Bidders Stamp:

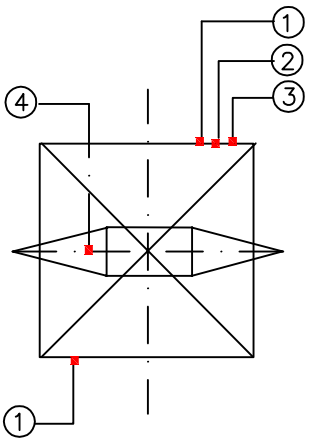
Bidders Authorized Representative Signature: Bidders Stamp:

TENDER
DRAWINGS

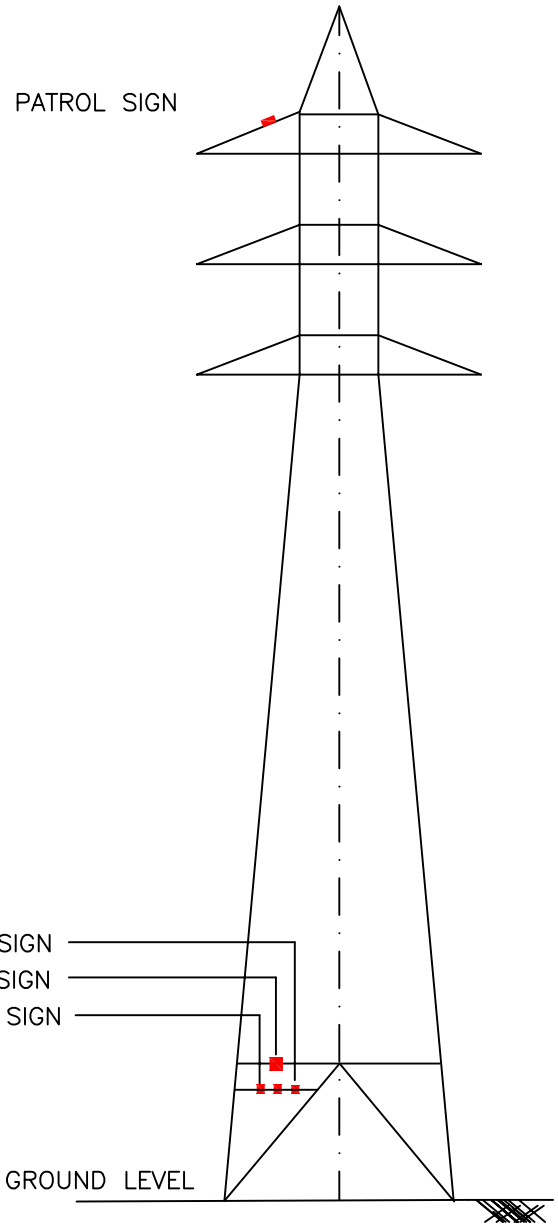
④ ARIAL PATROL SIGN

PHASING SIGN





① NUMBER SIGN
② DANGER SIGN
③ PHASING SIGN



FOR TENDER PURPOSE ONLY

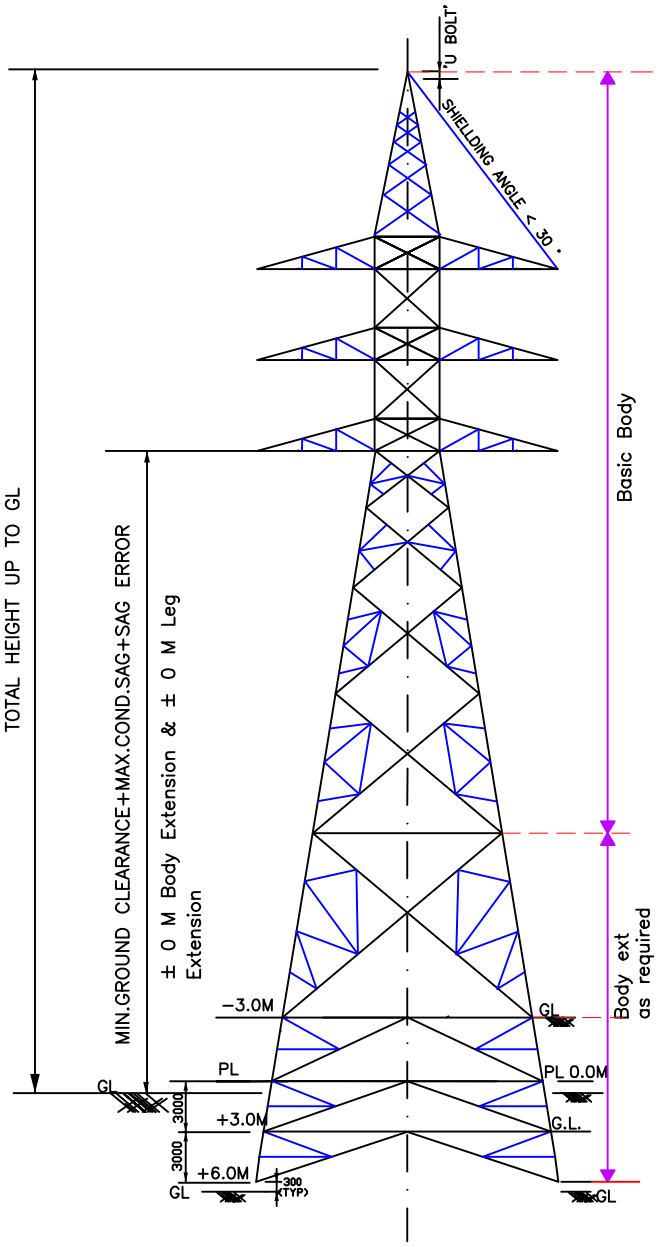
NEPAL ELECTRICITY AUTHORITY
(A Government Of Nepal Undertaking)

CONTRACT NO :			PROJECT :	NEW MODI LEKHNAH 132kV TRANSMISSION LINE PROJECT	
PREPARED	NAME	DATE			
			DRAWING TITLE :	TOWER AND LINE IDENTIFICATION PLATES	
SHEET SIZE	A4		DRAWING NO :	REV. 00	SHEET 1 OF 1
SCALE	N.T.S.				

REV.	DESCRIPTION	DATE	MECH.	CIVIL	ELEC.	C&I
00	PRELIMINARY					
–	–					

SCHEDULE A.5

TOWER OUTLINE CONFIGURATION

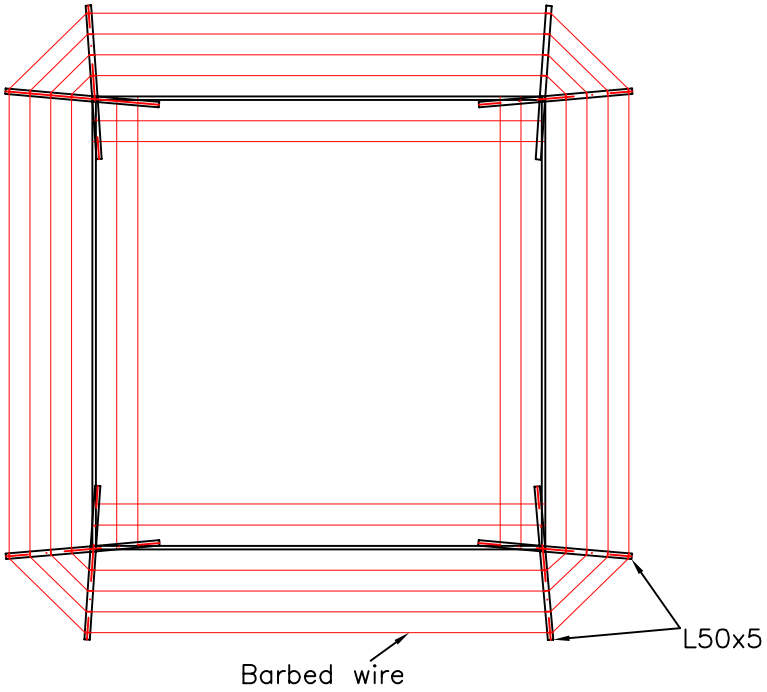


TENSION TOWER

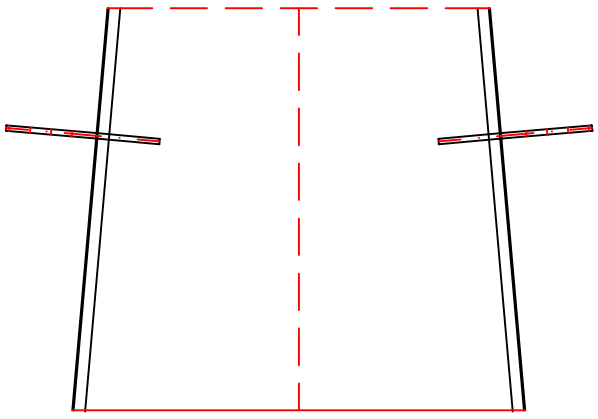
REV.	DESCRIPTION	DATE	MECH.	CIVIL	ELEC.	C&I
00	PRELIMINARY					
–	–					

NEPAL ELECTRICITY AUTHORITY
(A Government Of Nepal Undertaking)

CONTRACT NO :			PROJECT : NEW MODI LEKHNATH 132kV TRANSMISSION LINE PROJECT		
PREPARED	NAME	DATE			
			DRAWING TITLE : DEVICES FOR TOWER		
SHEET SIZE	A4		DRAWING NO :	REV.	SHEET
SCALE	N.T.S.			00	1 OF 1



PLAN



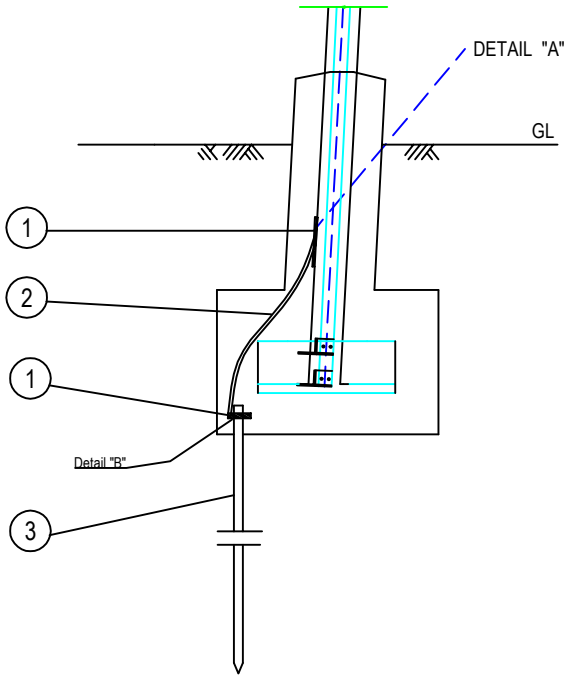
ELEVATION

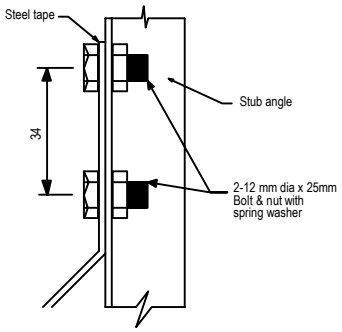
FOR TENDER PURPOSE ONLY

REV.	DESCRIPTION	DATE	MECH.	CIVIL	ELEC.	C&I
00	PRELIMINARY					
–	–					

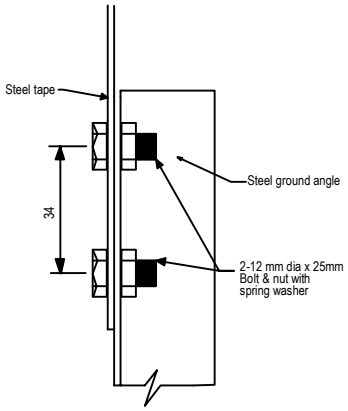
NEPAL ELECTRICITY AUTHORITY
(A Government Of Nepal Undertaking)

CONTRACT NO :	PROJECT :	NEW MODI LEKHNATH 132kV TRANSMISSION LINE PROJECT
PREPARED / NAME / DATE	DRAWING TITLE :	ANTI CLIMBING DEVICES FOR TOWER
SHEET SIZE : A4	DRAWING NO :	REV. 00 / SHEET 1 OF 1
SCALE : N.T.S.		

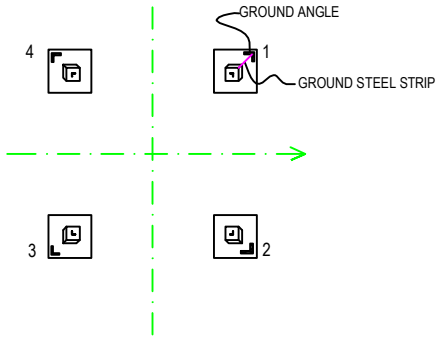




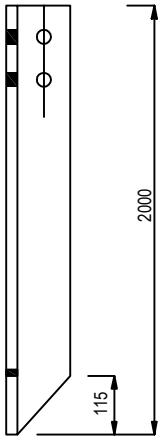
DETAIL "A"



DETAIL "B"



GROUND ANGLE CONNECTION



GROUND ANGLE

GROUNG ELECTRODE SET

Legend	Description	Ref. Dwg.
1	2-12 mm dia x 25 mm galv.steel bolt & nut	
	with spring washer.	
2	Galv. steel tape 25mm x 3 mm thickness.	
3	Galv. steel angle, 50x50x5 - 4	
	1,000 mm long.	

NOTE :

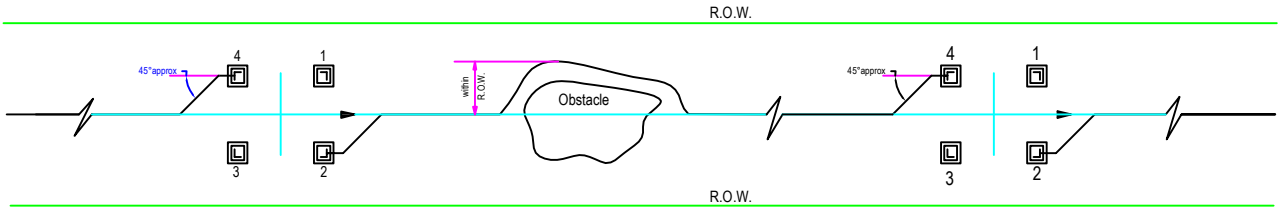
1. Dimensions are in millimeters except otherwise specified.
2. All grounding material shall have galvanizing weight of not less than specified in ASTM A 123+30%.

FOR TENDER PURPOSE ONLY

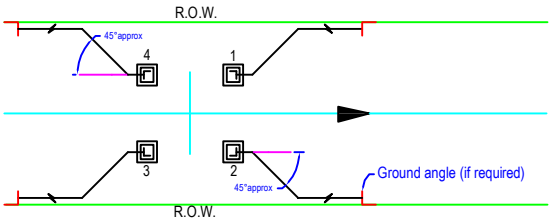
REV.	DESCRIPTION	DATE	MECH.	CIVIL	ELEC.	C&I
00	PRELIMINARY					
–	–					

NEPAL ELECTRICITY AUTHORITY
(A Government Of Nepal Undertaking)

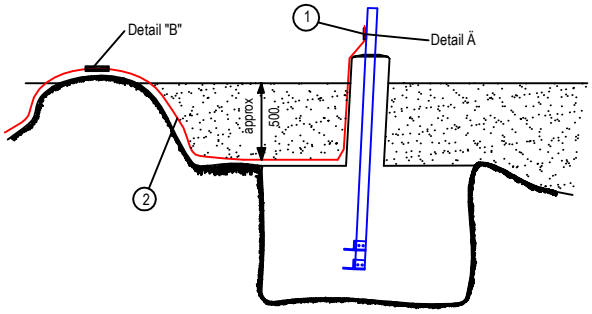
CONTRACT NO :			PROJECT : NEW MODI LEKHNATH 132kV TRANSMISSION LINE PROJECT		
PREPARED	NAME	DATE			
			DRAWING TITLE : TOWER GROUNDING		
SHEET SIZE	A4		DRAWING NO :	REV.	SHEET
SCALE	N.T.S.			00	1 OF 1



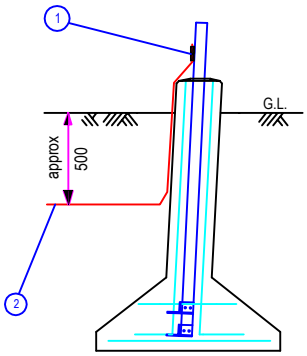
ONE WIRE CONTINUOUS COUNTERPOISE CONNECTION



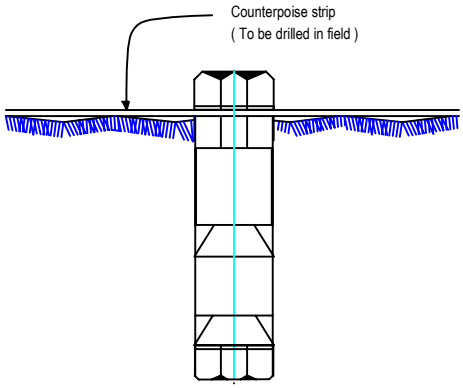
RADIAL COUNTERPOISE CONNECTION



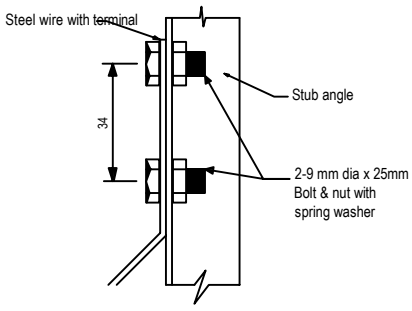
GROUND CONNECTION FOR PAD TYPE FOUNDATION



GROUND CONNECTION
FOR PAD TYPE FOUNDATION



DETAIL "B"
COUNTERPOISE ROCK
ANCHOR



DETAIL "A"

COUNTERPOISE SET

Legend	DESCRIPTION	Ref. Dwg.
1	2-12 mm dia x 25mm galv.steel bolt & nut with	
	spring washer.	
2	Galv. steel wire, 7 x 3.048 mm dia.	
	a. Radial counterpoise ; 50 meter long.	

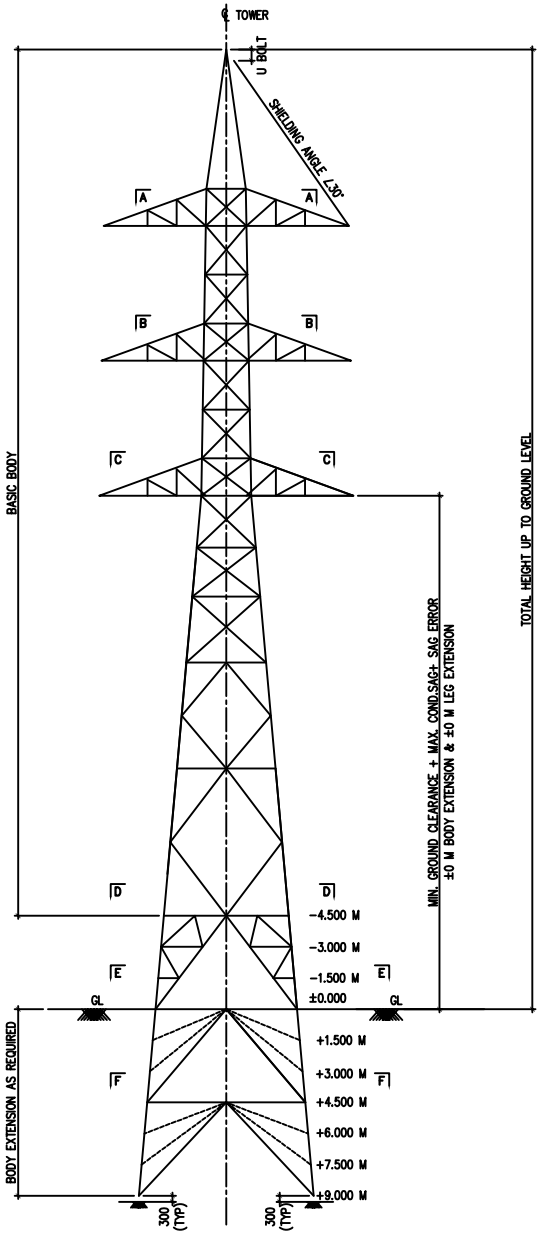
NOTE :
1. Dimensions are in millimeters except otherwise specified.
2. All grounding material shall have galvanizing weight of not less than specified in ASTM A 123+30%.

FOR TENDER PURPOSE ONLY

REV.	DESCRIPTION	DATE	MECH.	CIVIL	ELEC.	C&I
00	PRELIMINARY					
–	–					

NEPAL ELECTRICITY AUTHORITY
(A Government Of Nepal Undertaking)

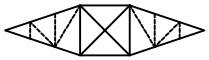
CONTRACT NO :			PROJECT :	NEW MODI LEKHNATH 132kV TRANSMISSION LINE PROJECT		
PREPARED	NAME	DATE				
			DRAWING TITLE :	TOWER COUNTERPOISE CONNECTION		
SHEET SIZE	A4		DRAWING NO :		REV.	SHEET
SCALE	N.T.S.				00	1 OF 1



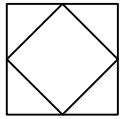
TOWER OUTLINE CONFIGURATION

VIEW–A

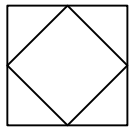
VIEW–B



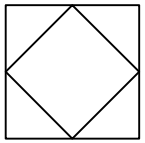
VIEW–C



VIEW–D



VIEW–E



VIEW–F

NOTES

1. ALL DIMENSIONS ARE IN MILLIMETRES & LEVELS ARE IN METRES UNLESS NOTED OTHERWISE.

LEGENDS

GL GROUND LEVEL

REFERENCE DRAWINGS

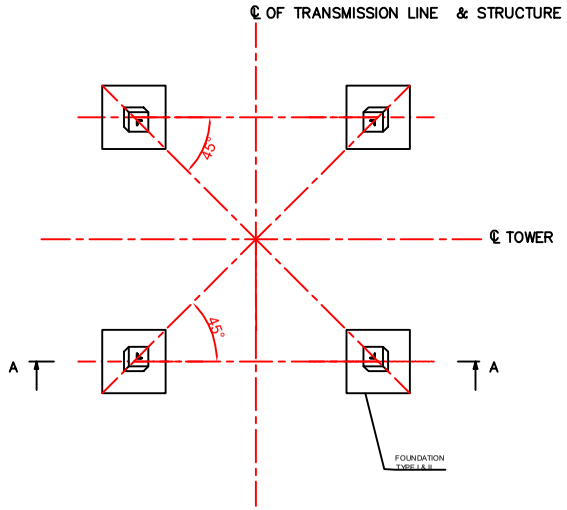
DRAWING TITLE	DRAWING NO.

FOR TENDER PURPOSE ONLY

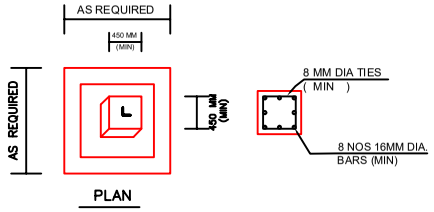
REV. No.	DATE	MECH.	CIVIL	ELEC.	C&I	DESCRIPTION
00						PRELIMINARY

NEPAL ELECTRICITY AUTHORITY
(A Government Of Nepal Undertaking)

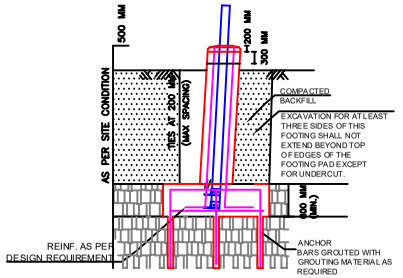
CONTRACT NO :			PROJECT : NEW MODI LEKHNATH 132kV TRANSMISSION LINE PROJECT
PREPARED	NAME	DATE	
			DRAWING TITLE : TOWER OUTLINE CONFIGURATION
SHEET SIZE	A1		DRAWING NO : REV. 00 SHEET 1 OF 1
SCALE	1 : 50		



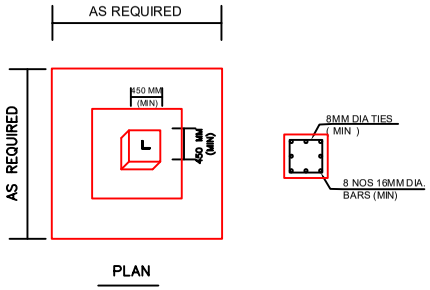
FOUNDATION ORIENTATION PLAN



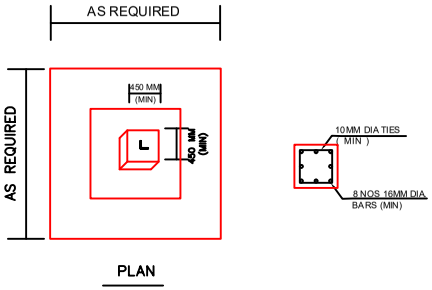
PLAN



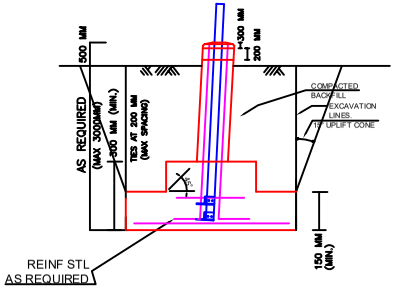
FOUNDATION TYPE (TYPICAL ONLY)



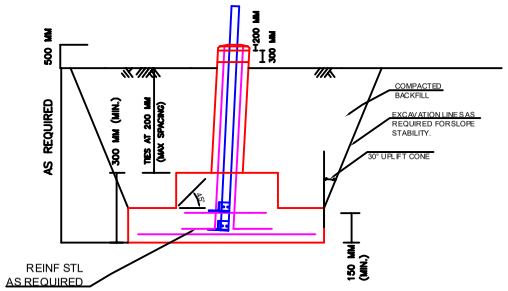
PLAN



PLAN



FOUNDATION TYPE to be decided later
SPREAD FOOTING WITH 20° UPLIFT CONE (TYPICAL)



FOUNDATION TYPE to be decided later
SPREAD FOOTING WITH 10° UPLIFT CONE (TYPICAL)

NOTES

GENERAL NOTES:

1. FOUNDATIONS OUTLINES AND DETAILES ILLUSTRATED ON THIS DRAWING ARE CONCEPTUAL ONLY AND ARE NOT RESTRICTED BEYOND THE GENERAL OUTLINE CONFIGURATION AND FOUNDATION DIMENSIONING.
2. FINAL FOUNDATION DESIGN SHALL BE BASED ON THE RESULT OF DETAIL SOIL TEST.
3. FINAL FOUNDATION SELECTION SHALL BE MADE AFTER COMPLETION OF EXCAVATION.
4. THE VALUES OF SOIL BEARING CAPACITY GIVEN IN THE FOUNDATION APPLICATION SCHEDULES ARE ONLY REFERENCE VALUES AND DETAIL DESIGN SHALL BE BASED ON THE RESULT OF DETAIL SOIL TEST CARRIED OUT BY THE CONTRACTOR.
5. FOR ADDITIONAL FOUNDATION REQUIREMENTS, SEE SPECIFICATION.

CONCRETE NOTES:

1. CONCRETE SHALL HAVE A 28 DAY MINIMUM COMPRESSIVE STRENGTH OF 210 KG/SQ CM.
2. ALL REINFORCING BARS SHALL BE TORSTEEL BAR CONFORMING TO Fe – 415 AS PER IS 1786.
3. REINFORCING STEEL SHALL BE DETAILED AND FABRICATED AS PER IS 456 & SP16 IN ACCORDANCE WITH – MANUAL OF STANDARD PRACTICE OF THE CONCRETE REINFORCING STEEL INSTITUTE.
4. MINIMUM COVER FOR REINFORCING STEEL SHALL BE
   a. CONCRETE CAST AGAINST EARTH 50 mm.
   b. ALL OTHER CONCRETE 50 mm.
5. CONCRETE FOUNDATIONS SHALL HAVE THE FOLLOWING MINIMUM STEEL.
   a. FOUNDATION PIERS – 0.005% GROSS AREA
   b. FOUNDATION FOOTINGS – 0.012% AVERAGE GROSS AREA
6. ALL EXPOSED CONCRETE SHALL HAVE TOOLED EDGES.

REFERENCE DRAWINGS

DRAWING TITLE	DRAWING NO.

FOR TENDER PURPOSE ONLY

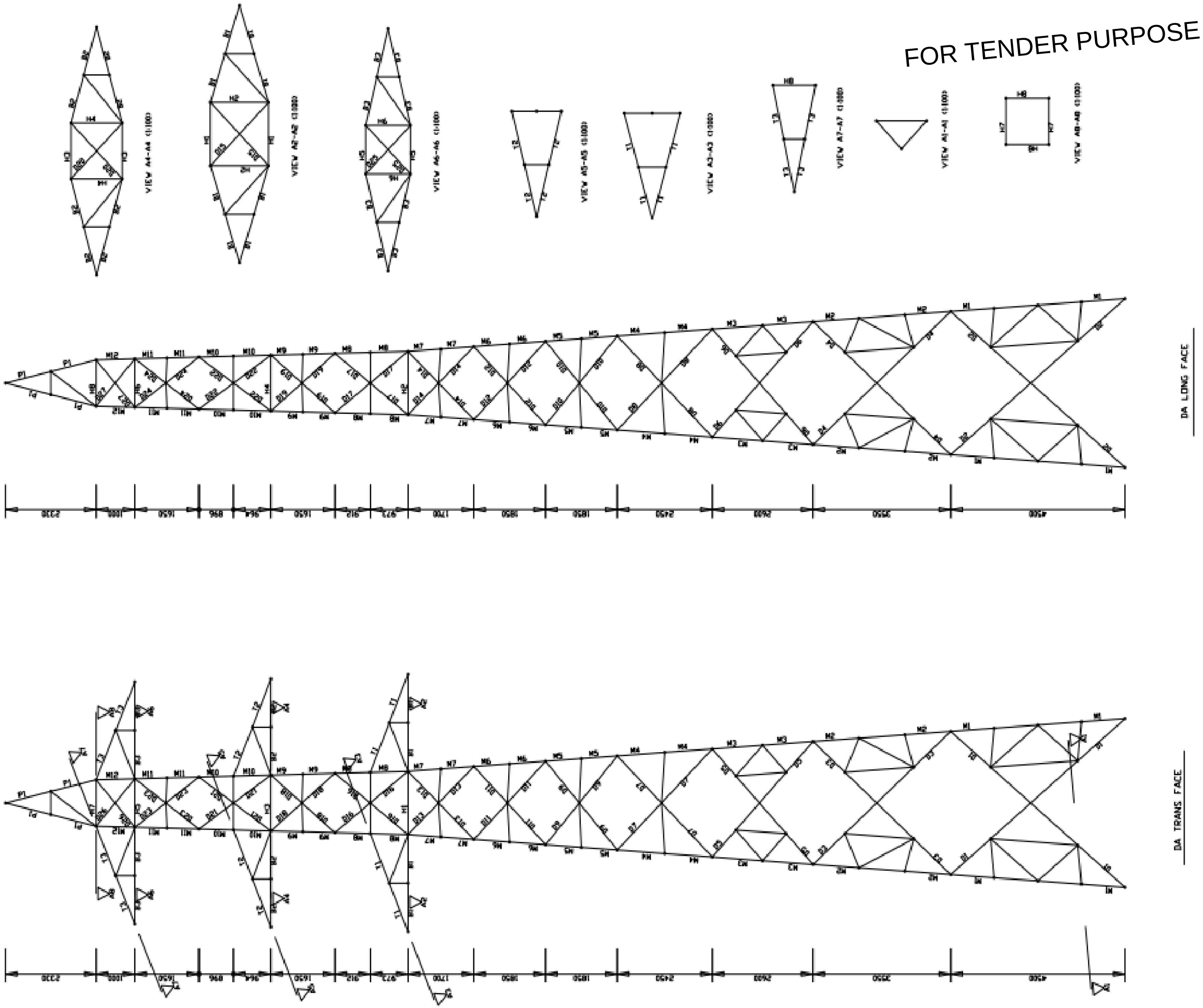
REV. No.	DATE	MECH.	CIVIL	ELEC.	C&I	DESCRIPTION
						PRELIMINARY

NEPAL ELECTRICITY AUTHORITY
(A Government Of Nepal Undertaking)

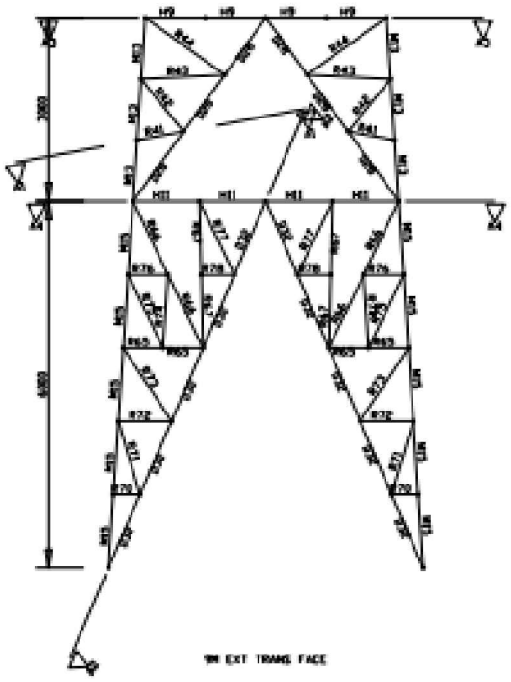
CONTRACT NO :		PROJECT :	NEW MODI LEKHNATH 132kV TRANSMISSION LINE PROJECT
PREPARED	NAME / DATE		
		DRAWING TITLE :	CONCEPTUAL FOUNDATION DRAWING
SHEET SIZE	A1	DRAWING NO :	REV. 00 / SHEET 1 OF 1
SCALE	1 : 50		

FOR TENDER PURPOSE ONLY

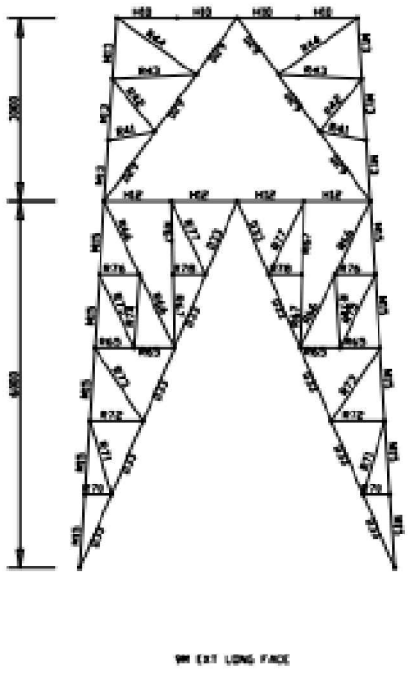
LINE DIAGRAM DA TYPE TOWER



LINE DIAGRAM DA TYPE TOWER



9M EXT TRANS FACE



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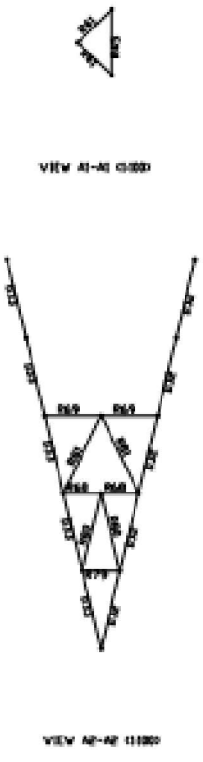
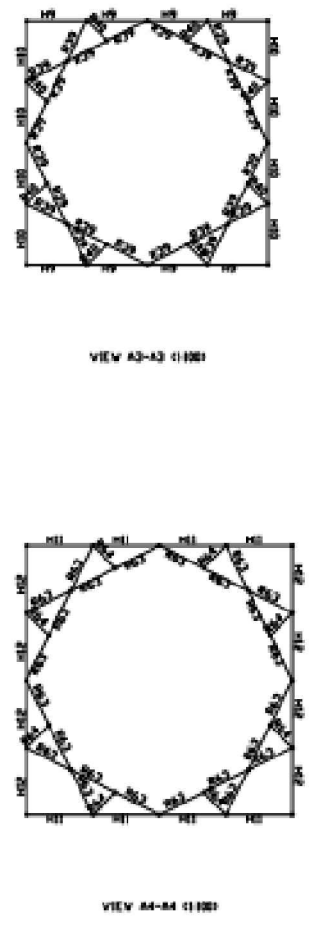


VIEW A2-A2 (1:100)



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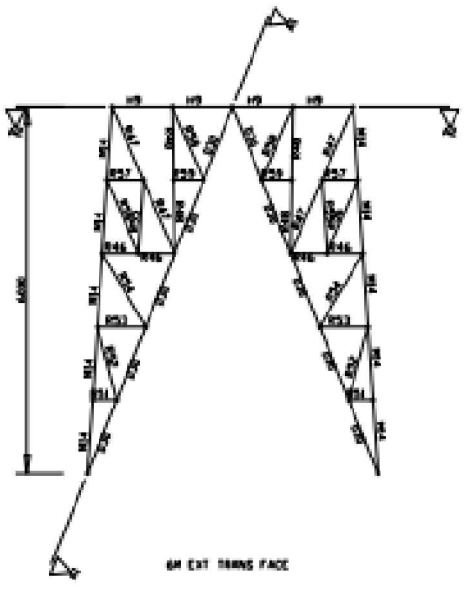

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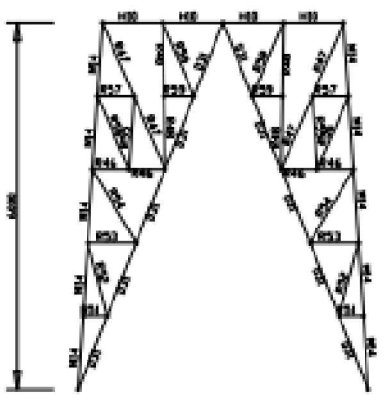

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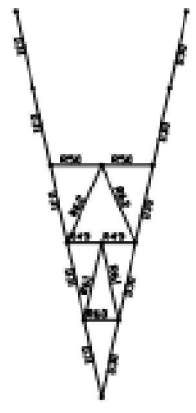
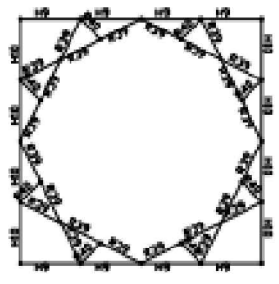


VIEW A1-A1 (1:100)



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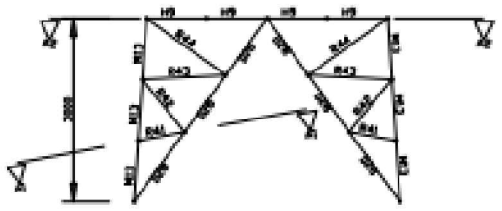

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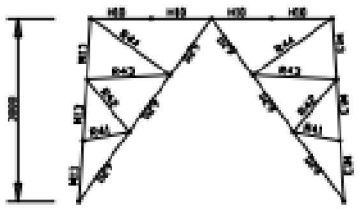

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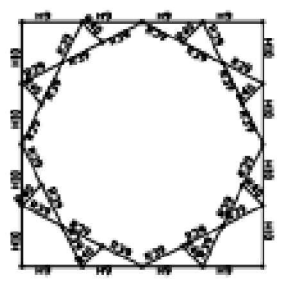
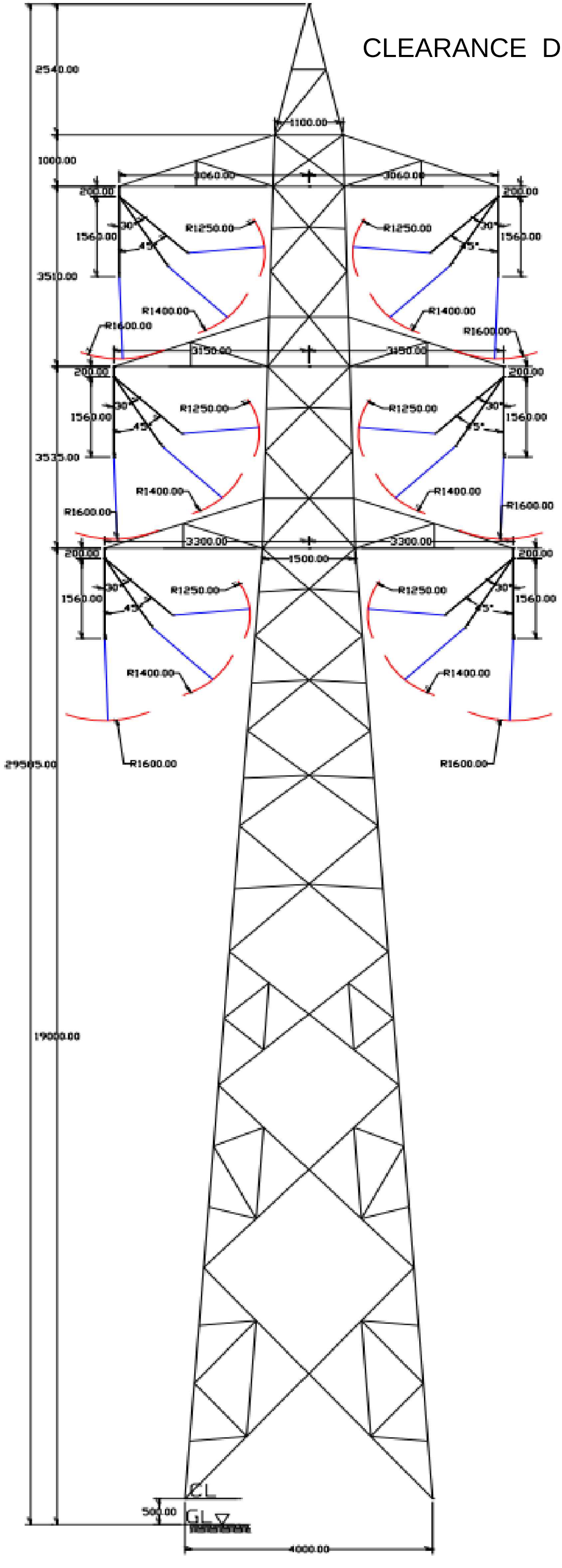


VIEW A2-A2 (1:100)

VIEW A1-A1 (1:100)

FOR TENDER PURPOSE ONLY

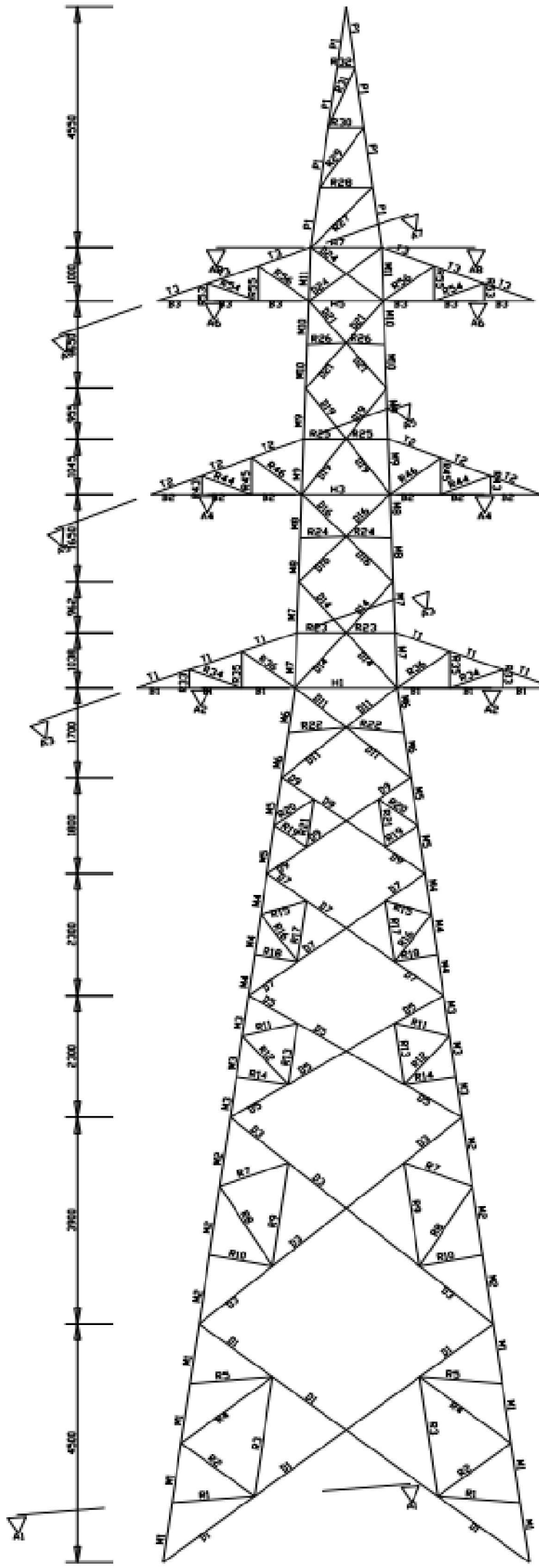
CLEARANCE DIAGRAM DA



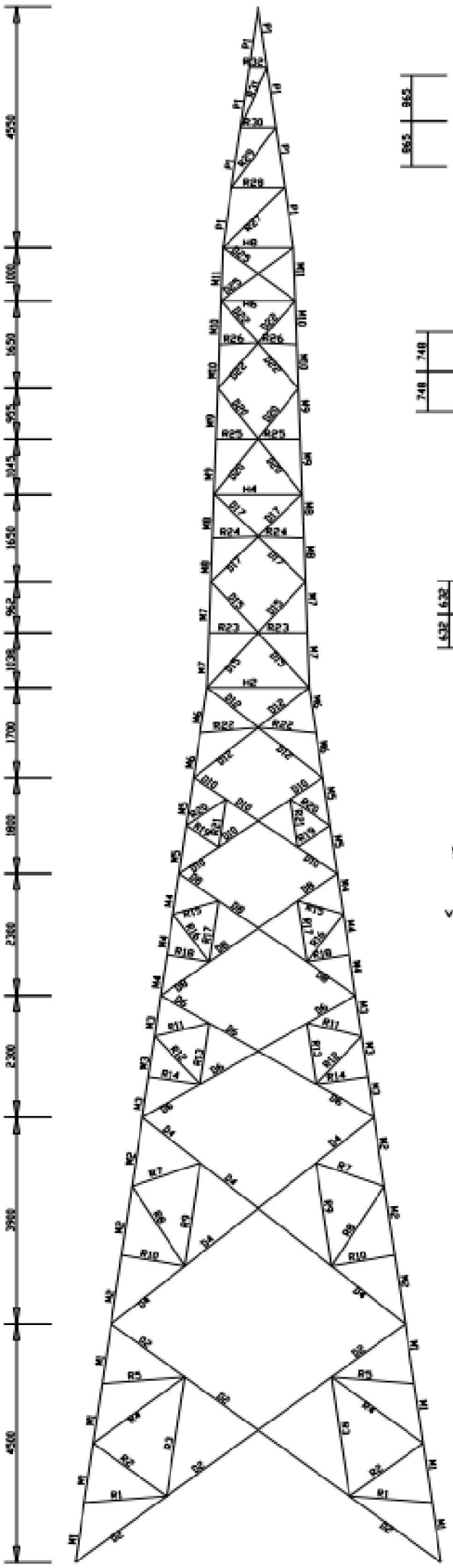
DA CLEARNCE DRAWING

FOR TENDER PURPOSE ONLY

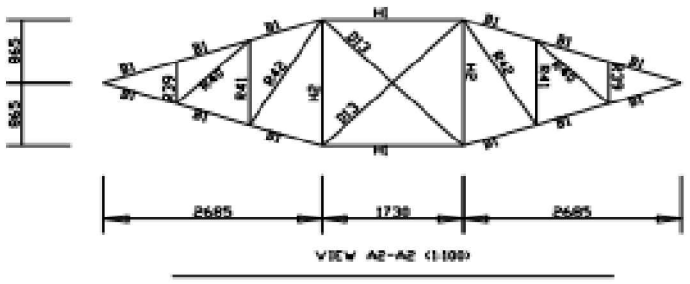
LINE DIAGRAM DB TYPE TOWER

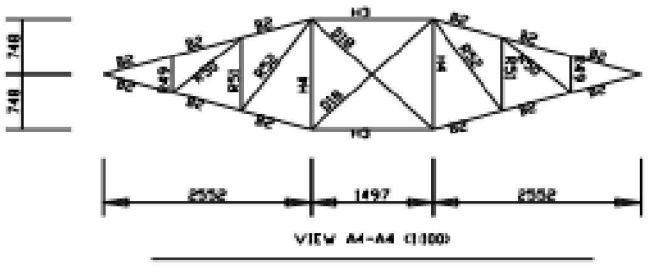


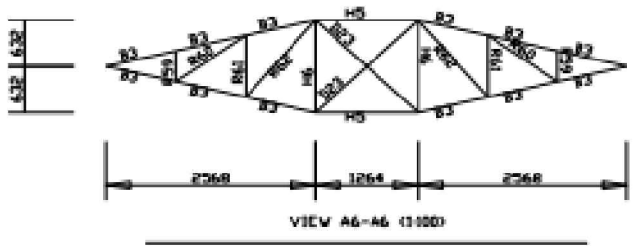
TRANS FACE DB

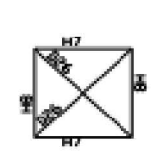


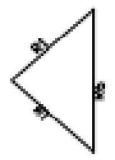
LONG FACE DB

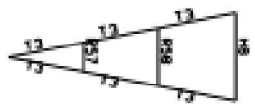


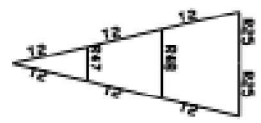


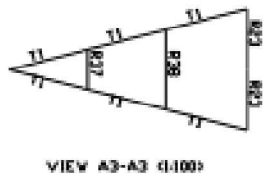






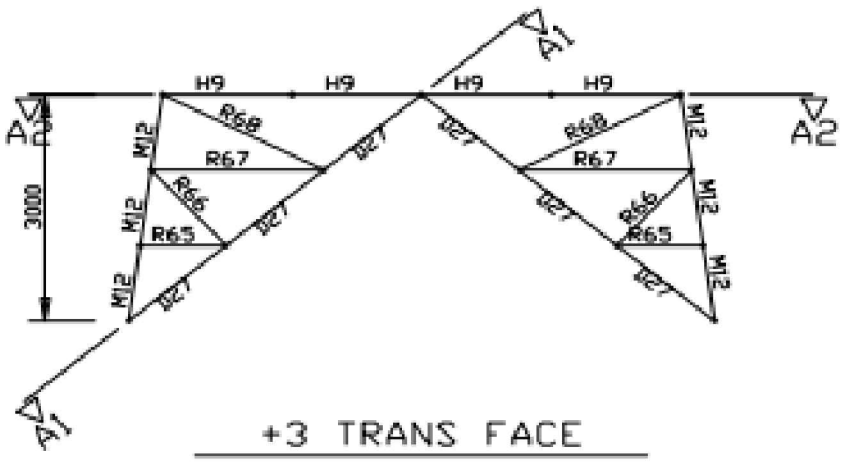






FOR TENDER PURPOSE ONLY

LINE DIAGRAM DB TYPE TOWER



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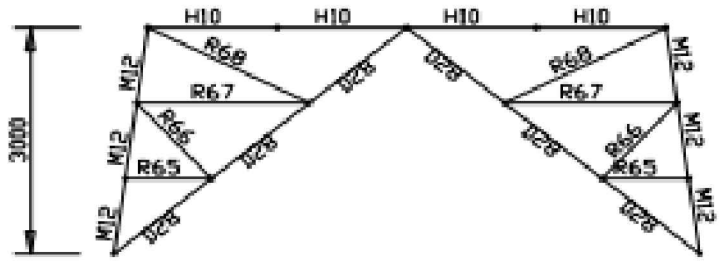
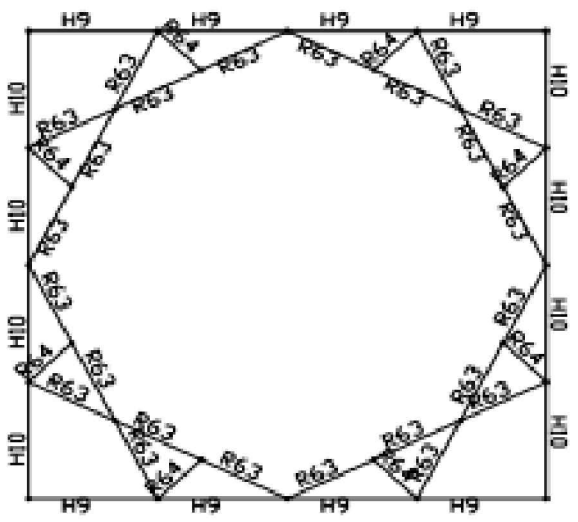
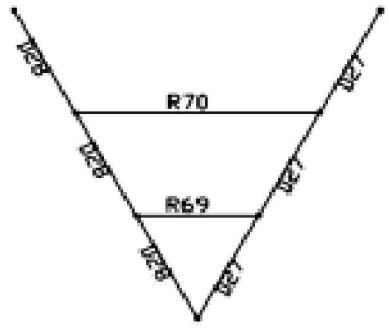


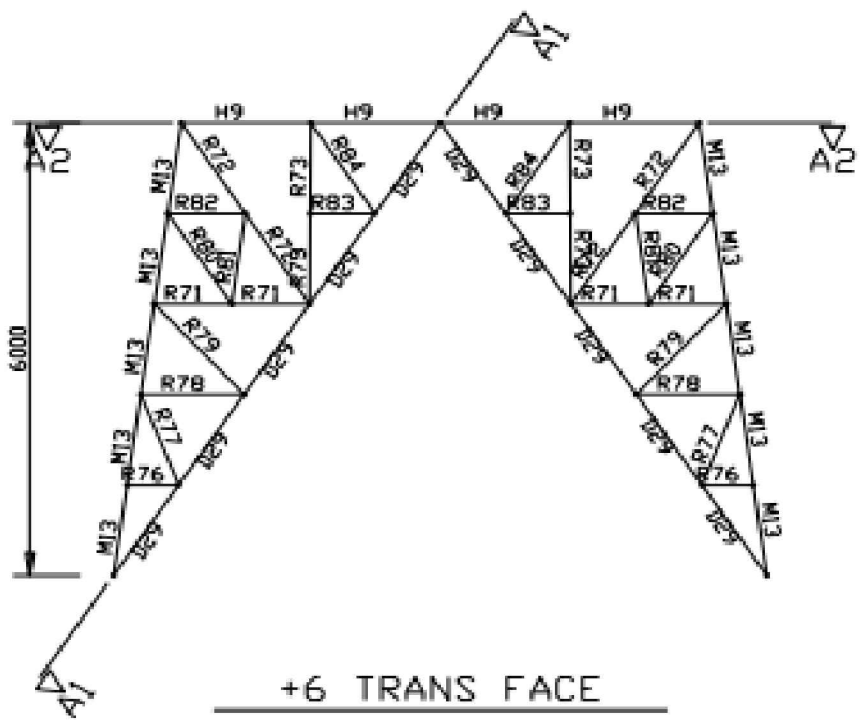
3 LONG FACE



VIEW A2-A2 (1:100)



VIEW A1-A1 (1:100)



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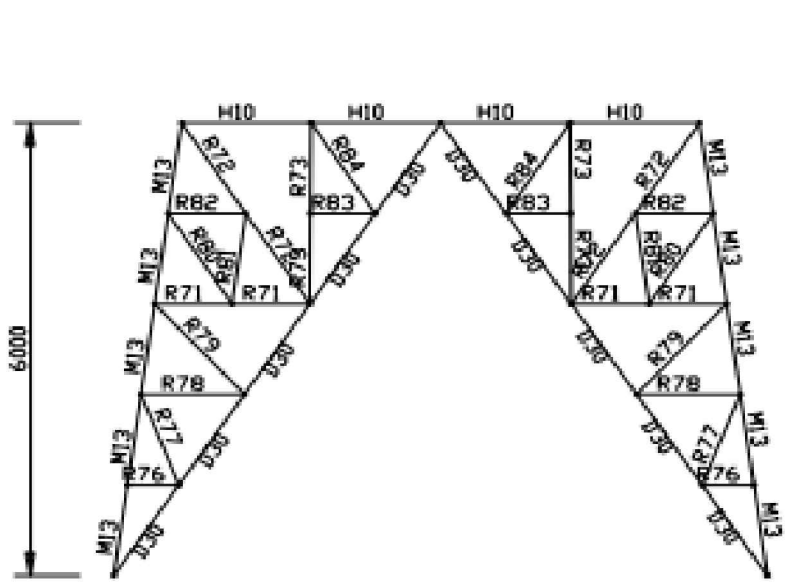

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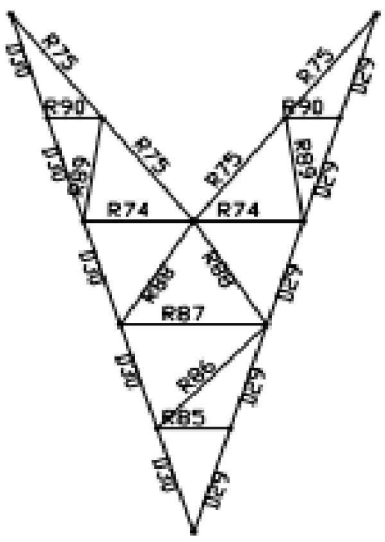
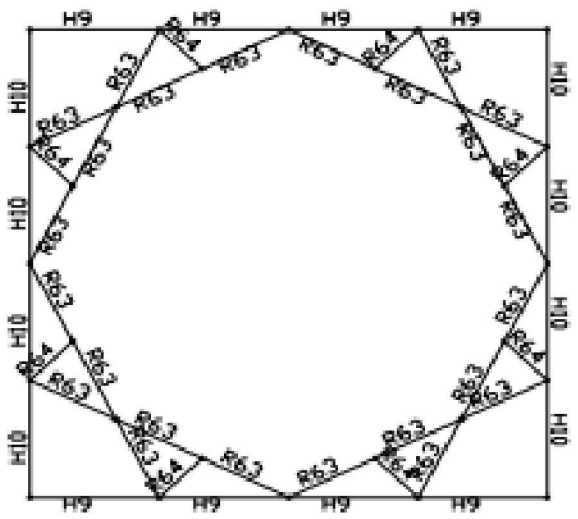


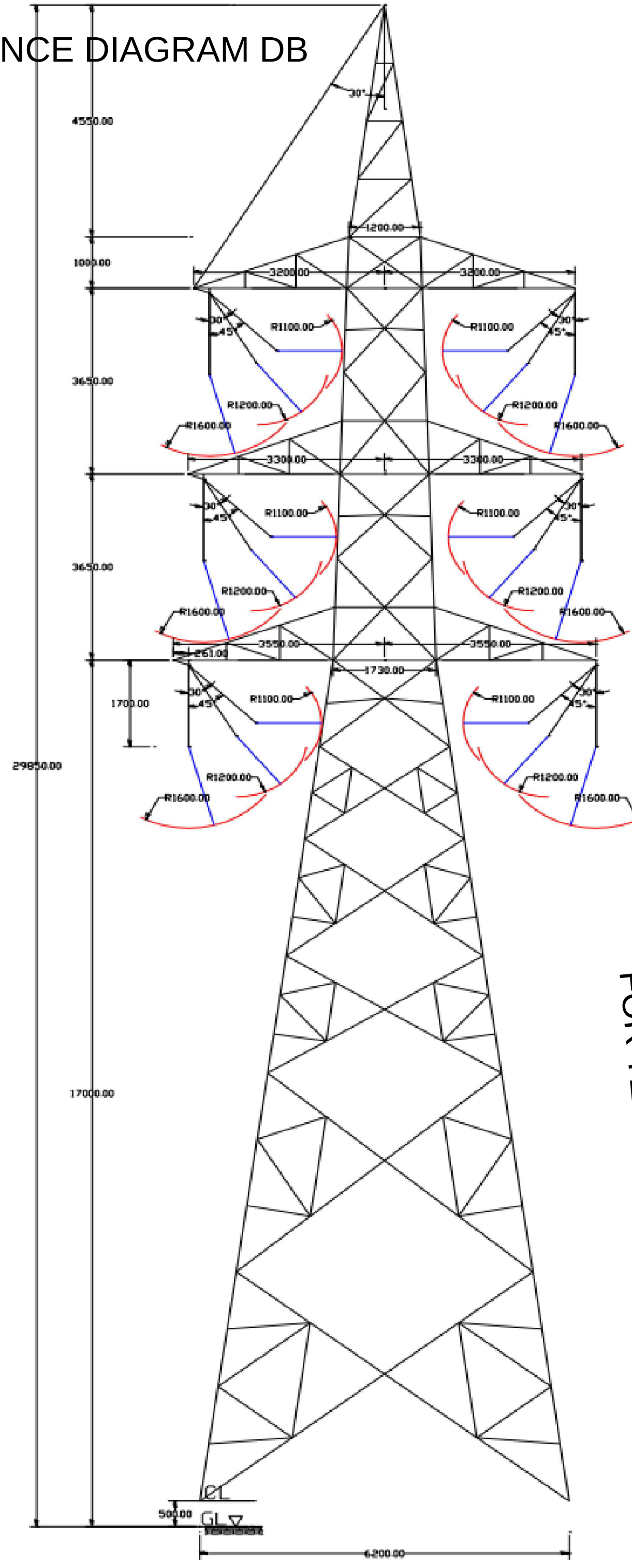
VIEW A1-A1 (1:100)



VIEW A2-A2 (1:100)

FOR TENDER PURPOSE ONLY

CLEARANCE DIAGRAM DB



FOR TENDER PURPOSE ONLY

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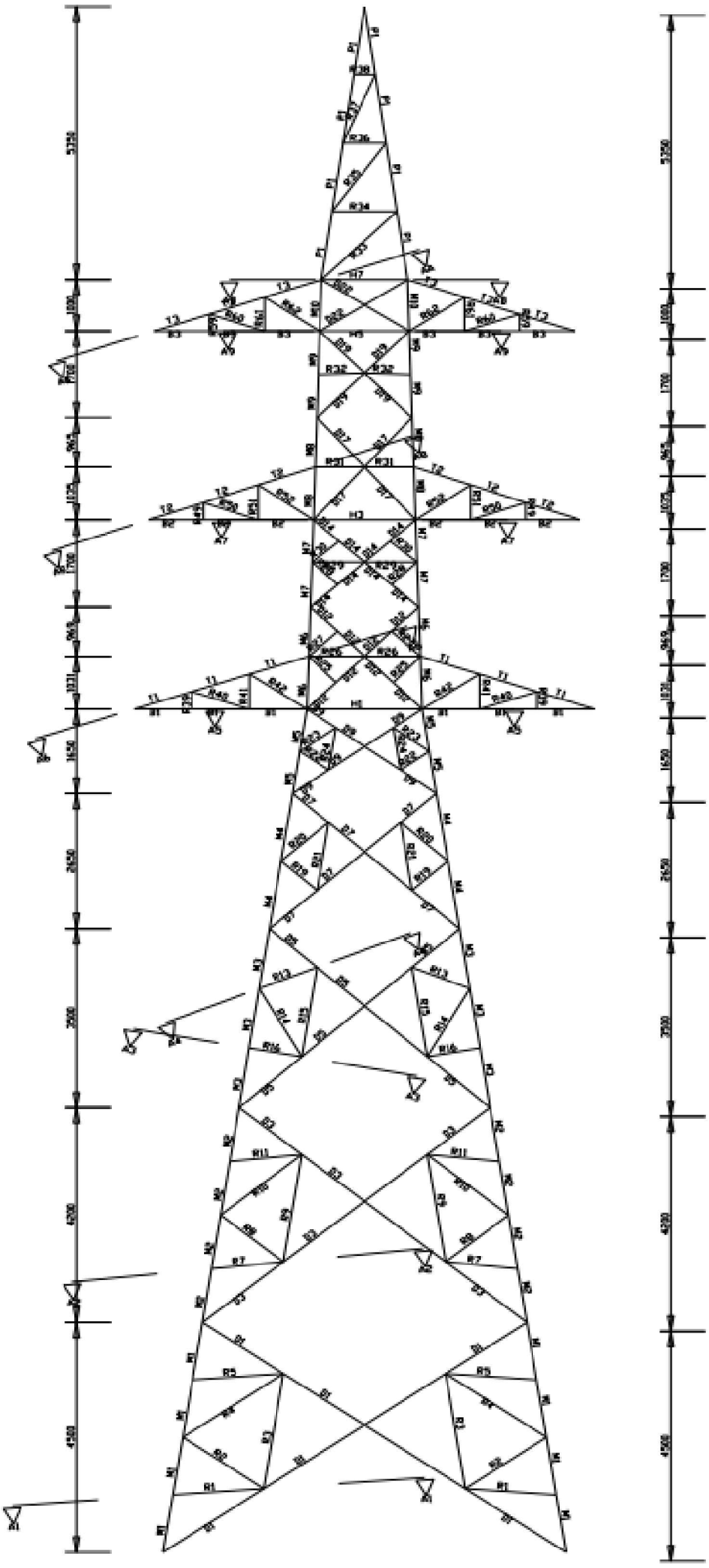
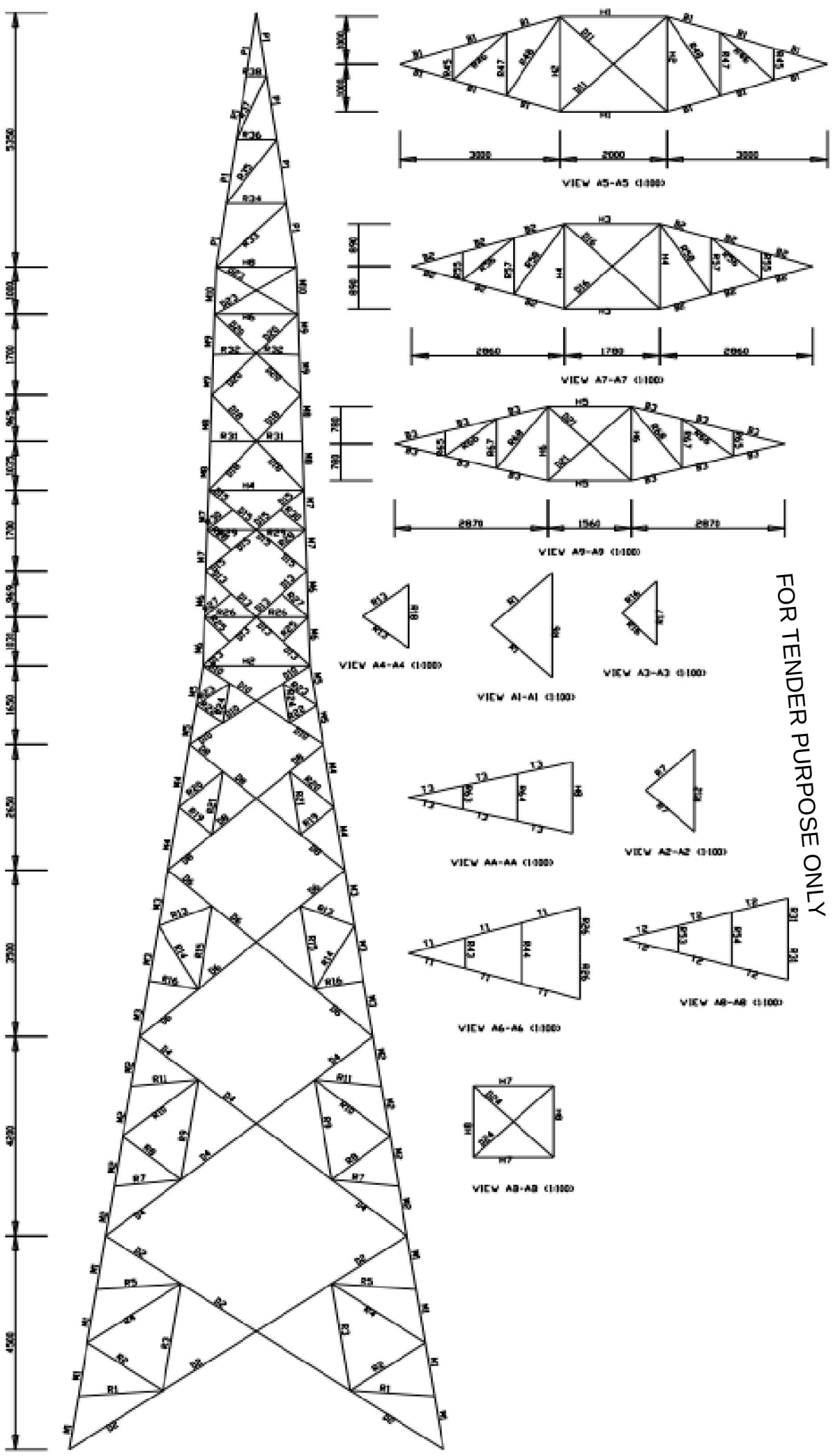


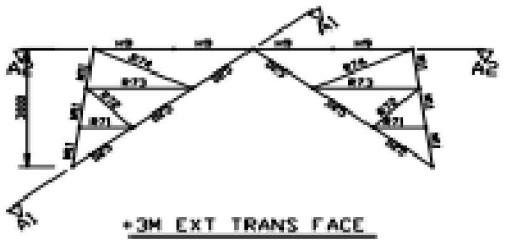
TRANS FACE DC



LONG FACE DC

FOR TENDER PURPOSE ONLY

LINE DIAGRAM DC TYPE TOWER



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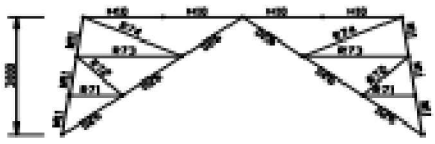

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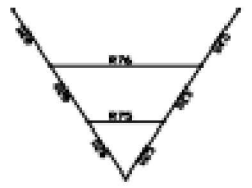
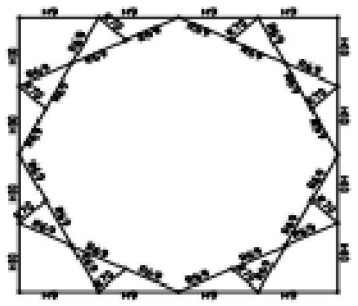


VIEW A1-A1 (1:100)



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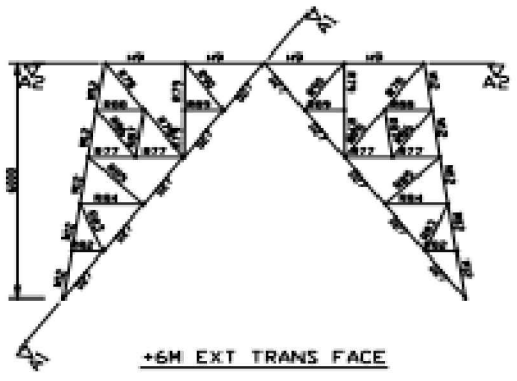

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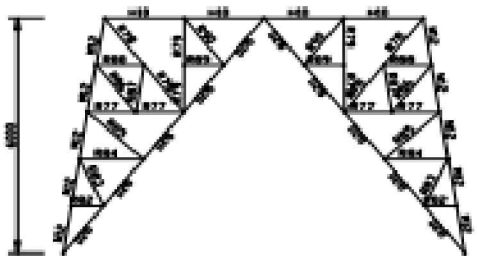

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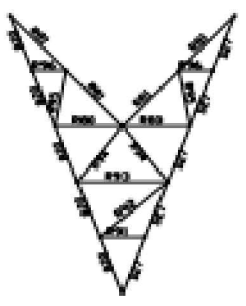
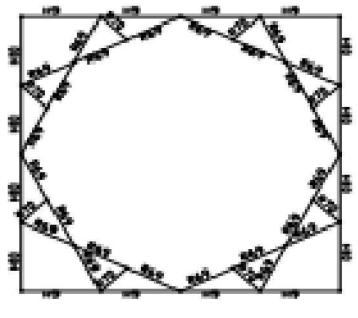


VIEW A1-A1 (1:100)



VIEW A2-A2 (1:100)

FOR TENDER PURPOSE ONLY

+9M EXTENSION TRANS FACE

+9M EXTENSION LONG FACE

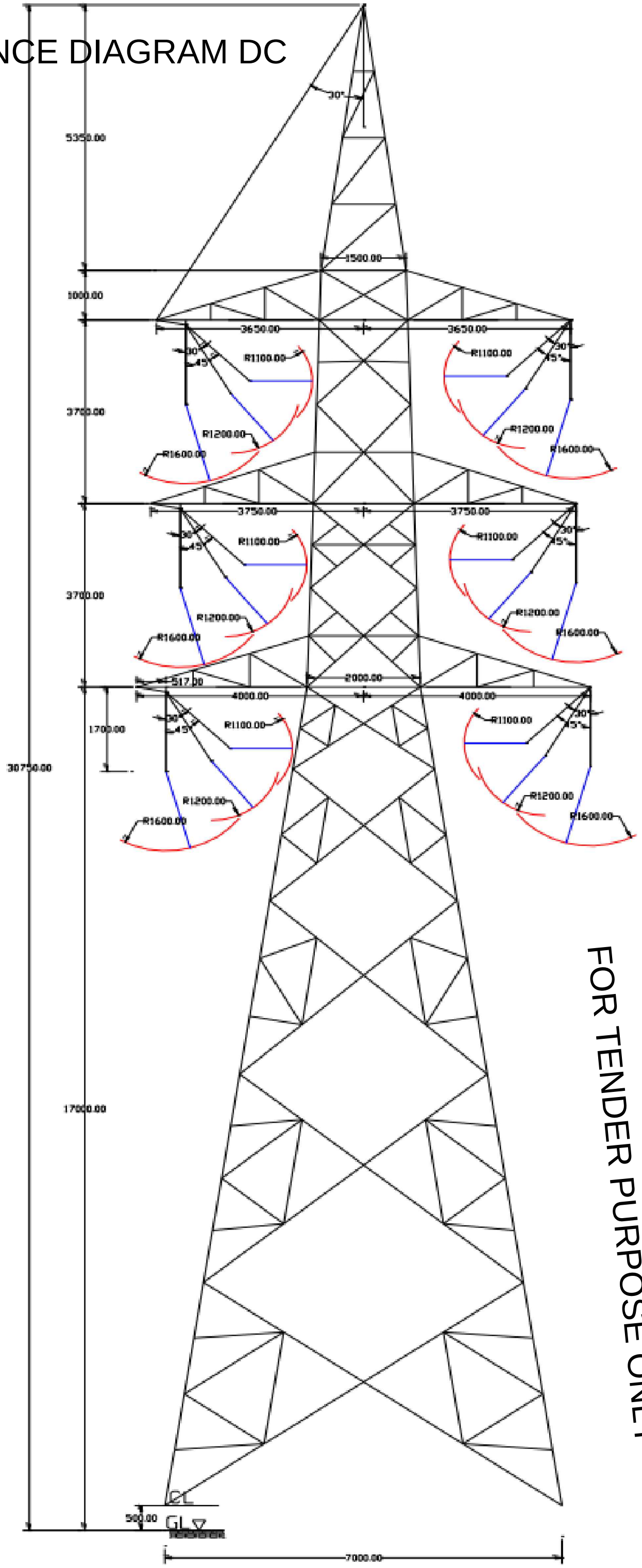
VIEW A4-A4 (1:100)

VIEW A2-A2 (1:100)

VIEW A3-A3 (1:100)

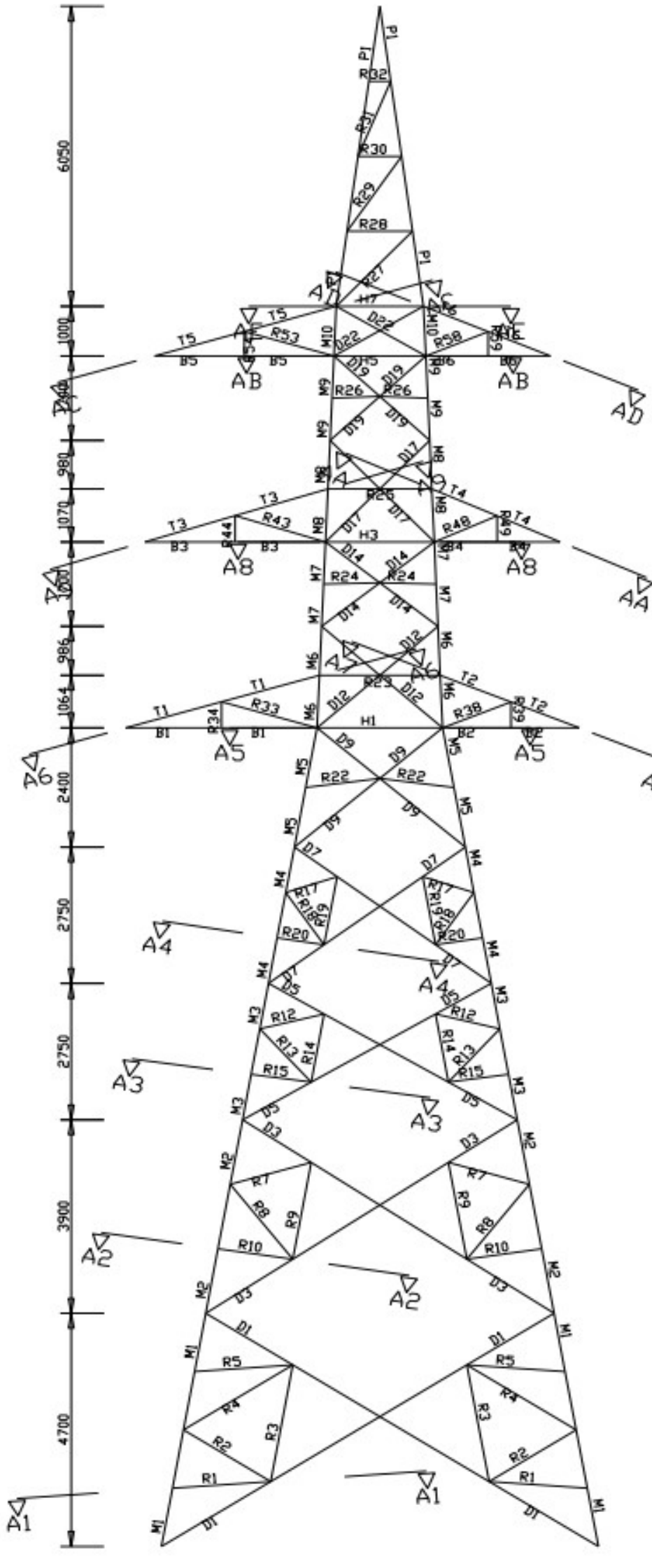
VIEW A1-A1 (1:100)

CLEARANCE DIAGRAM DC

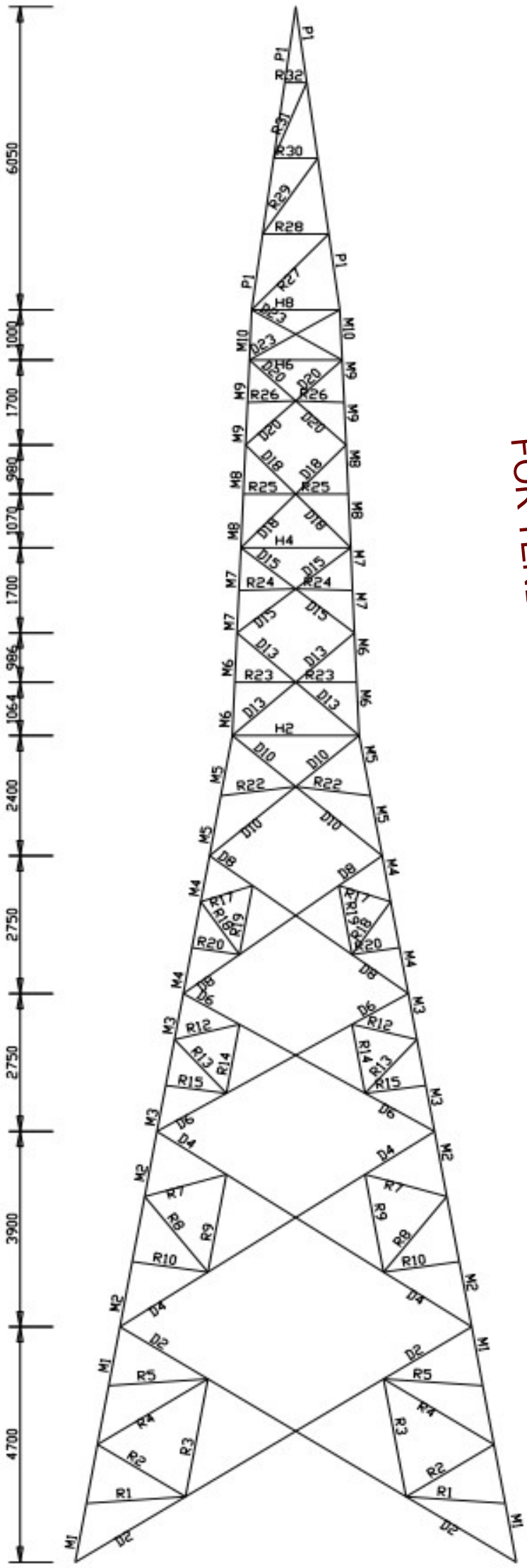


FOR TENDER PURPOSE ONLY

LINE DIAGRAM DD/DDE TYPE TOWER



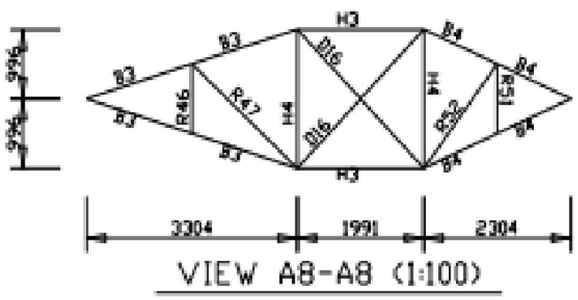
DD/ DDE TRANS FACE



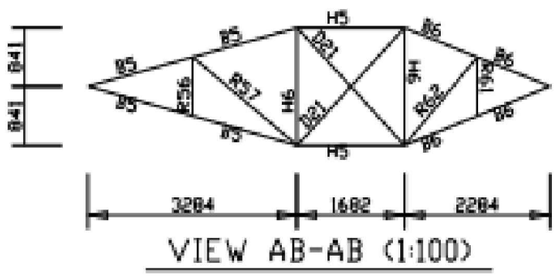
DD/ DDE LONG FACE

FOR TENDER PURPOSE ONLY

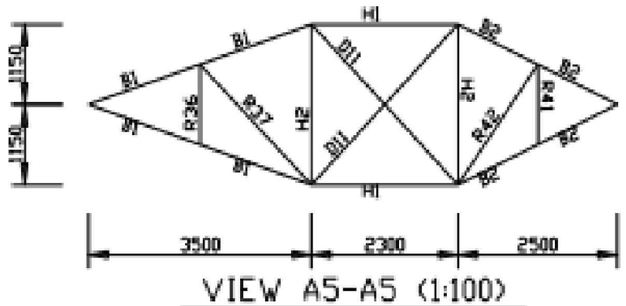
LINE DIAGRAM DD/DDE TYPE TOWER



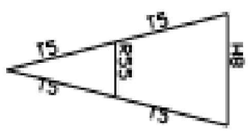
VIEW A8-A8 (1:100)



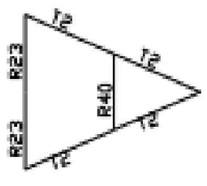
VIEW AB-AB (1:100)



VIEW A5-A5 (1:100)



VIEW AC-AC (1:100)



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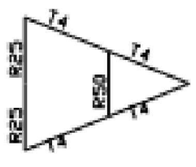
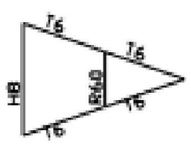
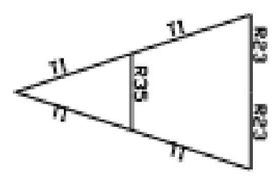


VIEW AA-AA (1:100)



VIEW AD-AD (1:100)



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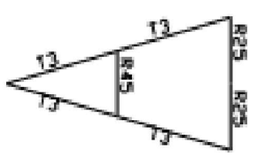

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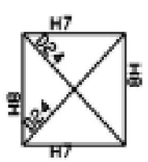


VIEW AE-AE (1:100)

VIEW A2-A2 (1:100)

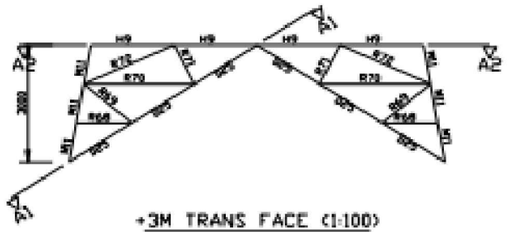
VIEW A1-A1 (1:100)

VIEW A3-A3 (1:100)

VIEW A4-A4 (1:100)

FOR TENDER PURPOSE ONLY

LINE DIAGRAM DD/DDE TYPE TOWER



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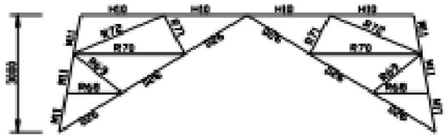
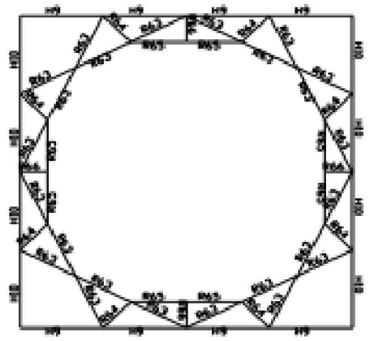


+3M LONG FACE (1:100)



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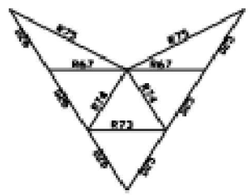
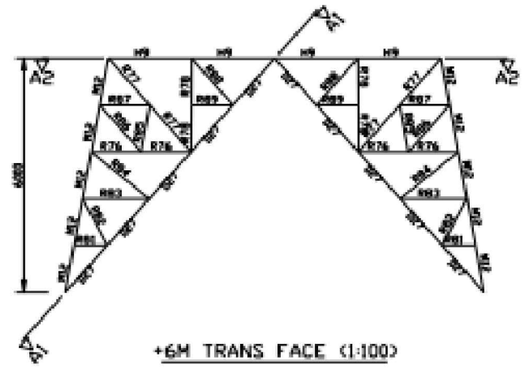


VIEW A1-A1 (1:100)



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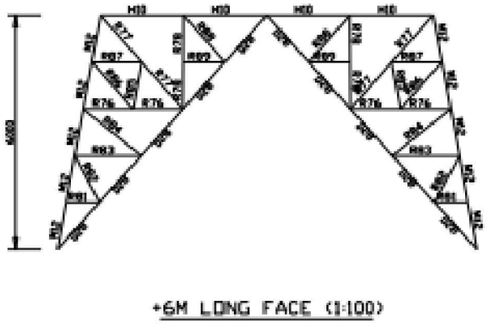

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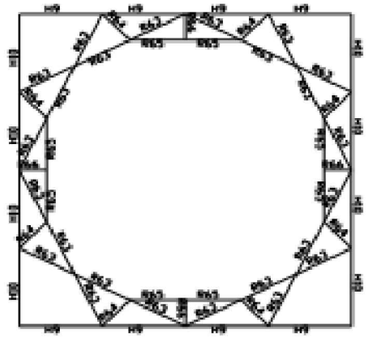
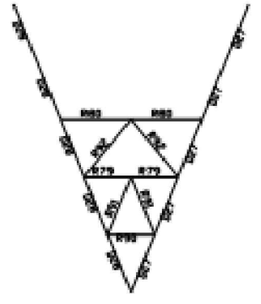
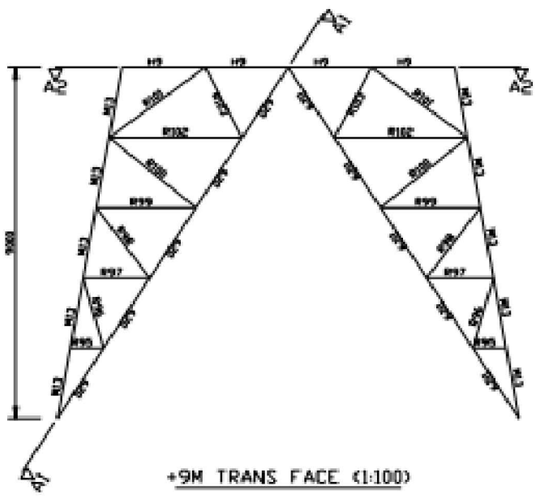


VIEW A2-A2 (1:100)



VIEW A1-A1 (1:100)



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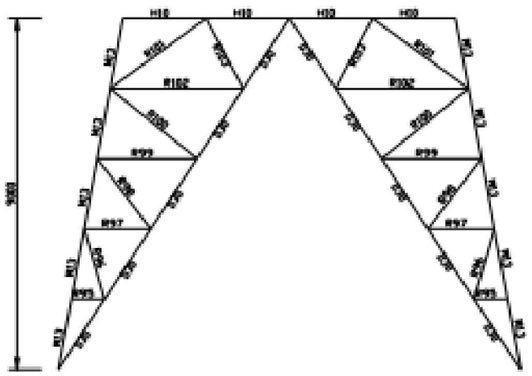

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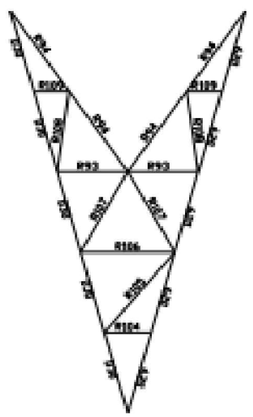
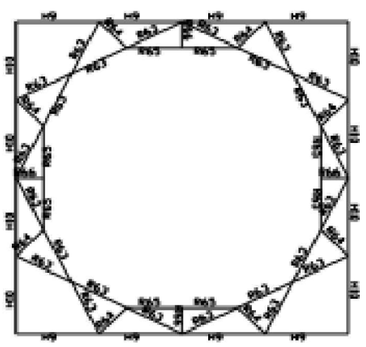


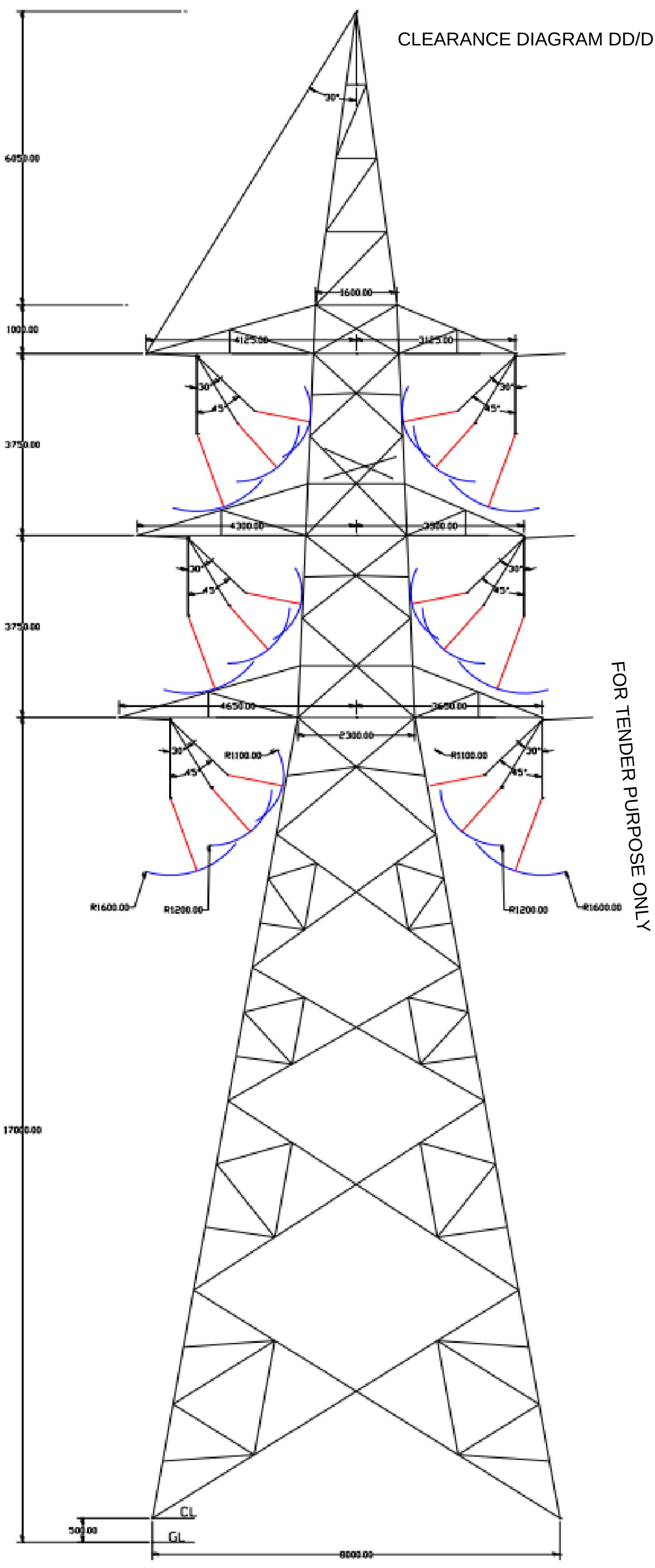
VIEW A1-A1 (1:100)



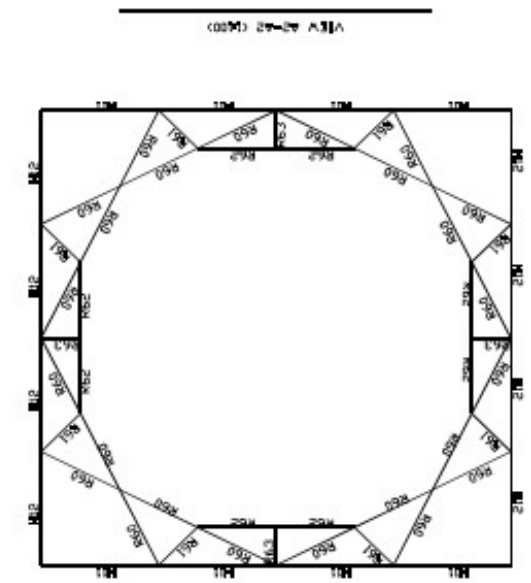
VIEW A2-A2 (1:100)

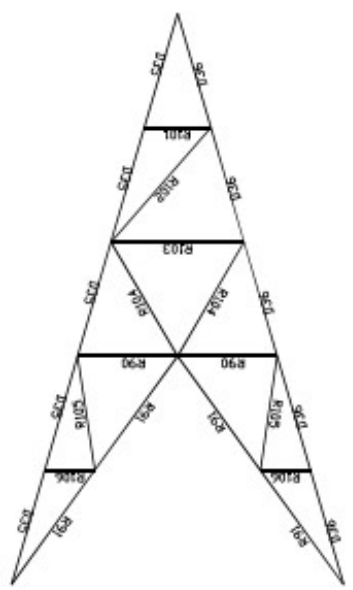
FOR TENDER PURPOSE ONLY

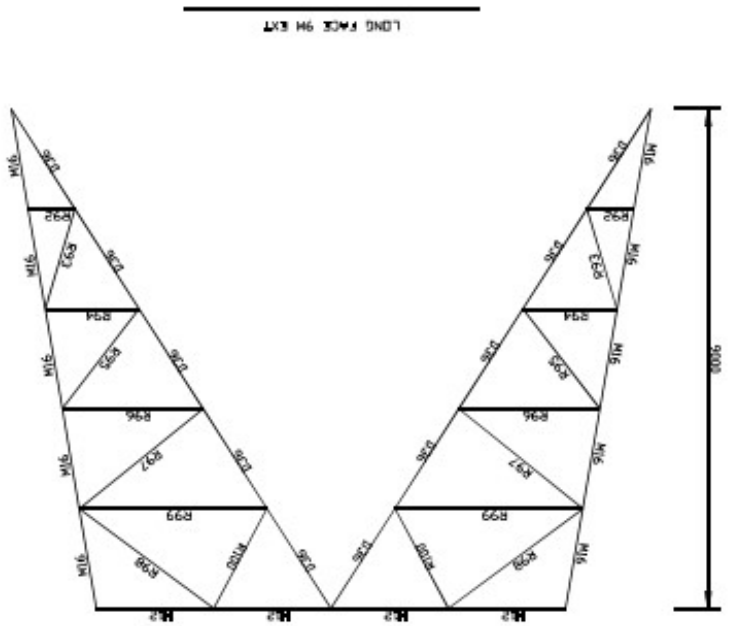
CLEARANCE DIAGRAM DD/DDE

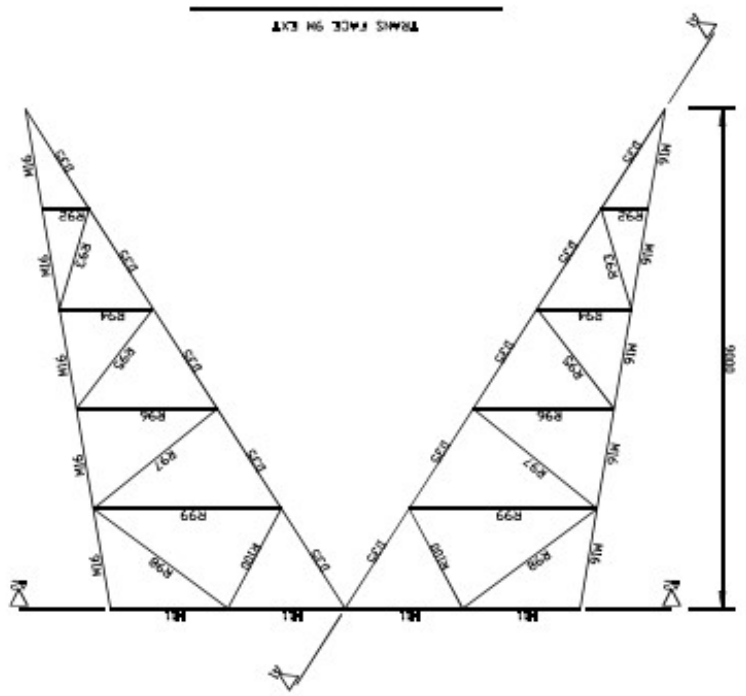


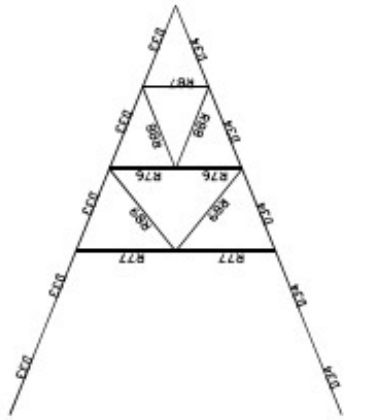
FOR TENDER PURPOSE ONLY

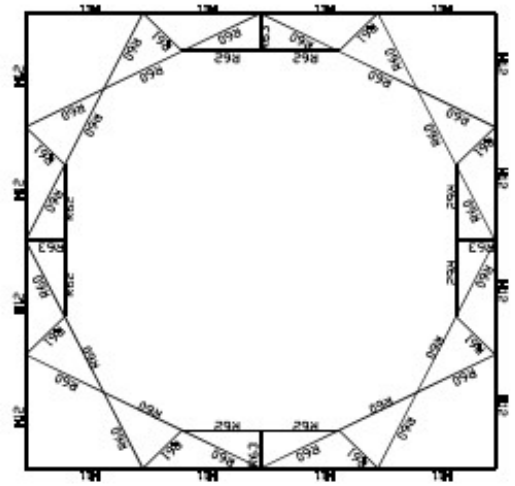


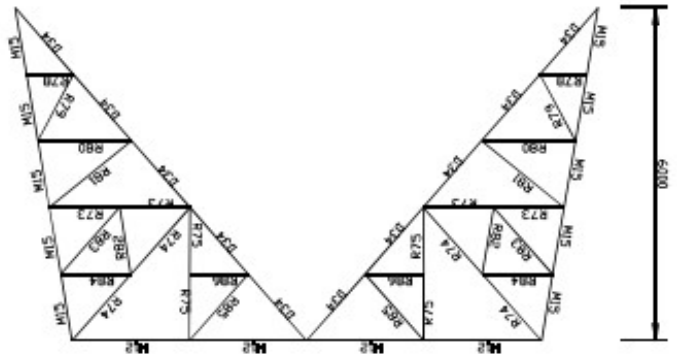


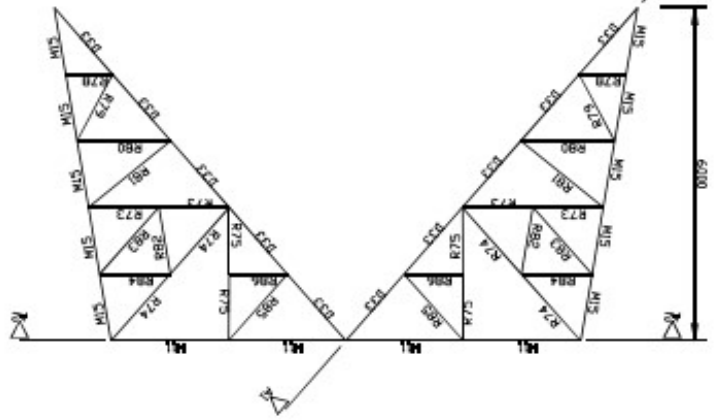


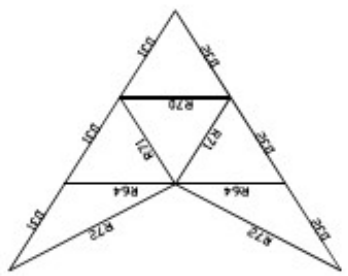


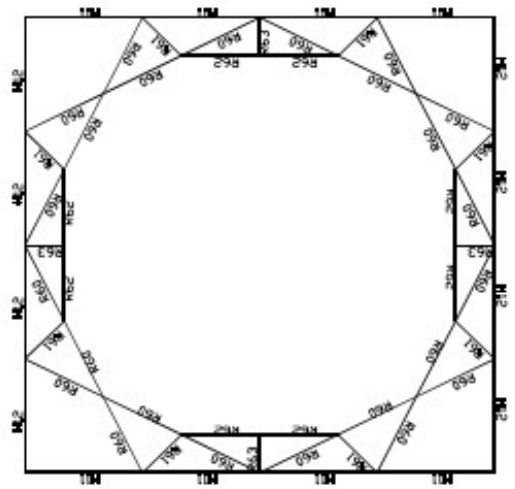


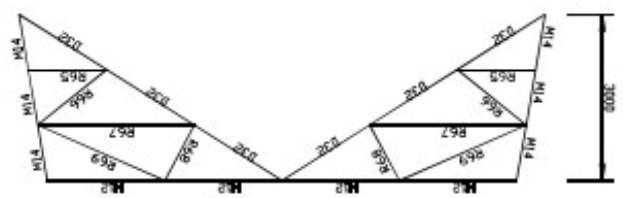


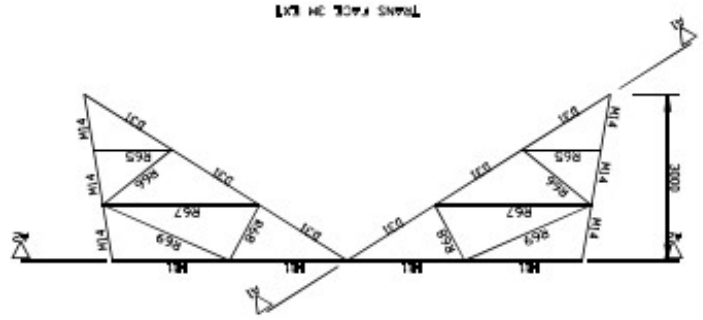










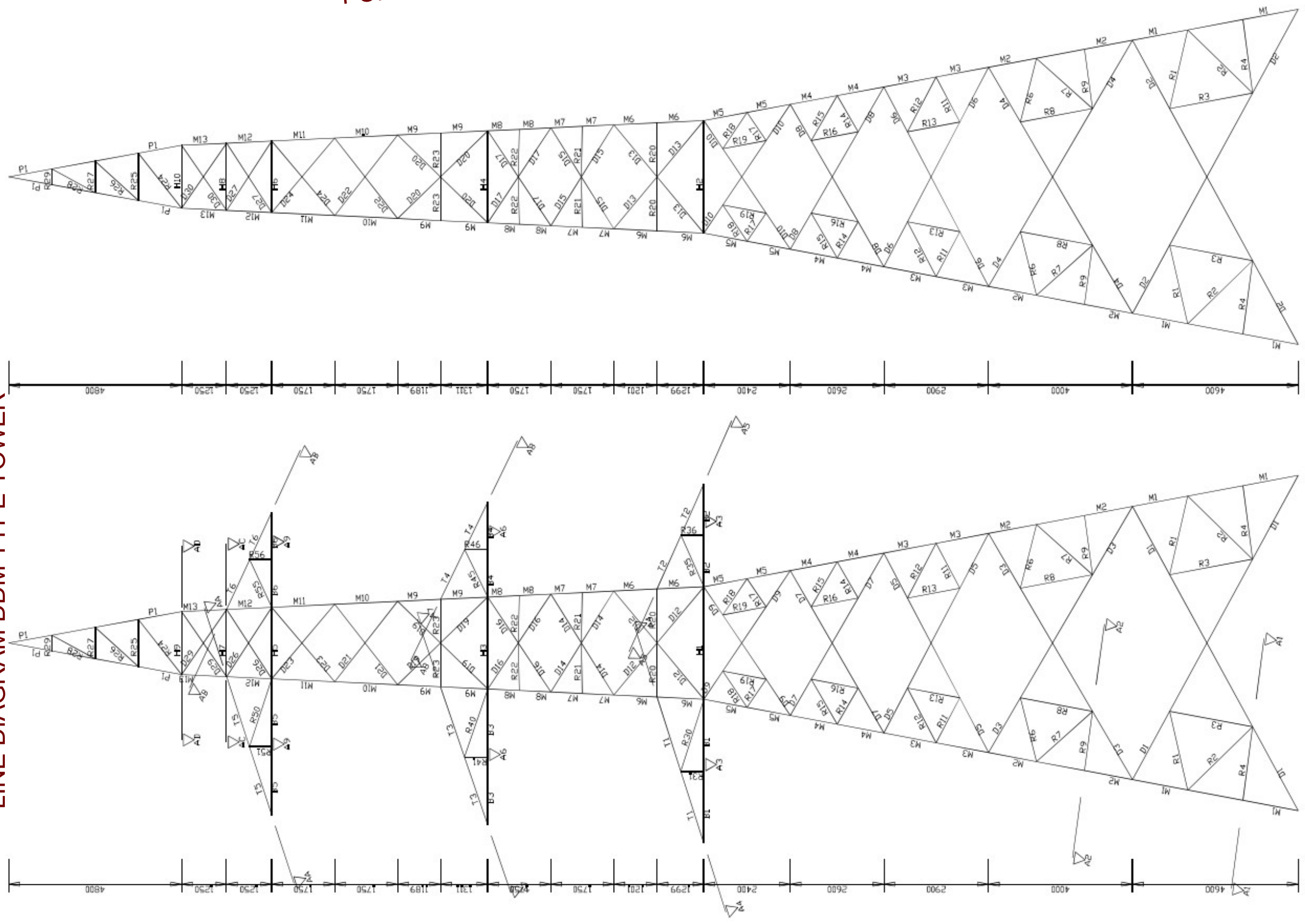


FOR TENDER PURPOSE ONLY

LINE DIAGRAM DDM TYPE TOWER

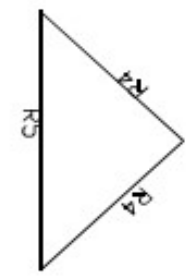
FOR TENDER PURPOSE ONLY

LINE DIAGRAM DDM TYPE TOWER



LINE DIAGRAM DDM TYPE TOWER

VIEW A1-A1 (1:100)



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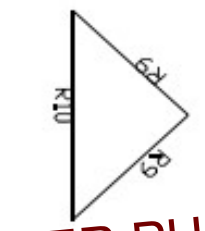

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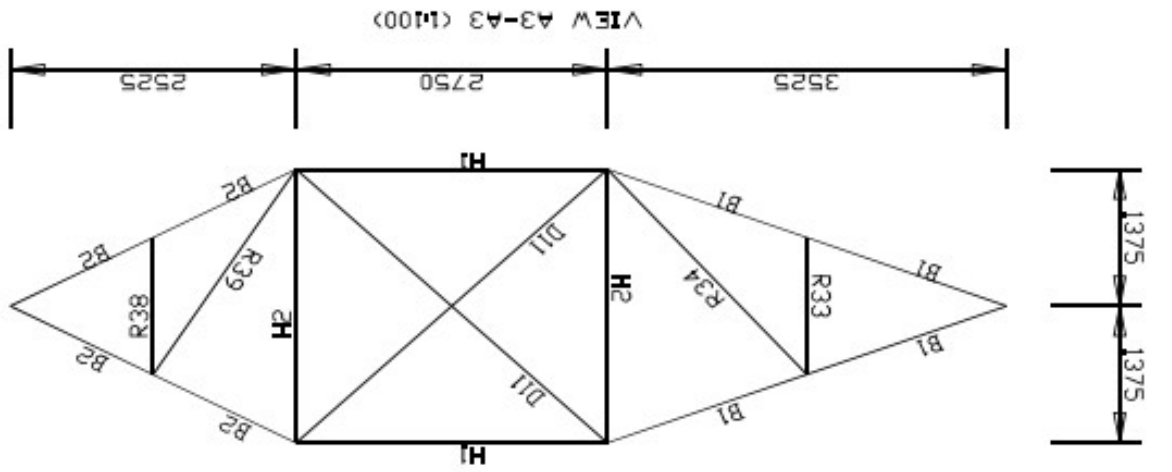
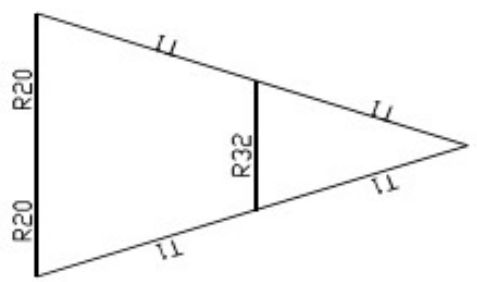
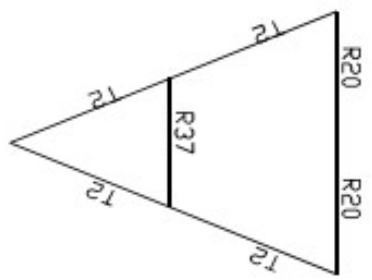


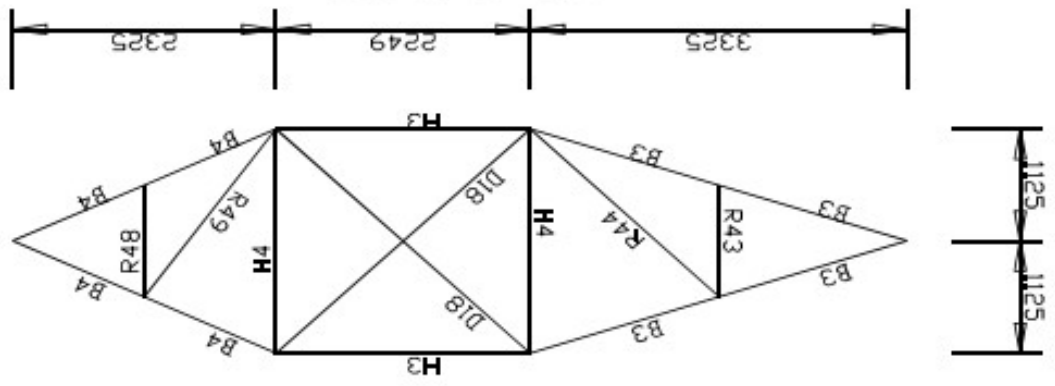
VIEW A4-A4 (1:100)



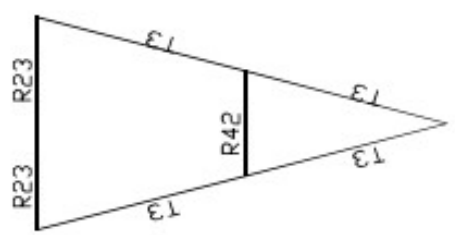
VIEW A5-A5 (1:100)



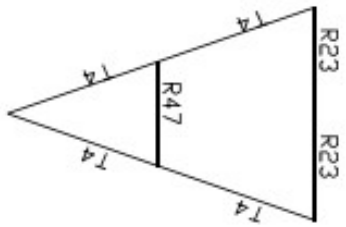
VIEW A6-A6 (1:100)



VIEW A7-A7 (1:100)



VIEW A8-A8 (1:100)



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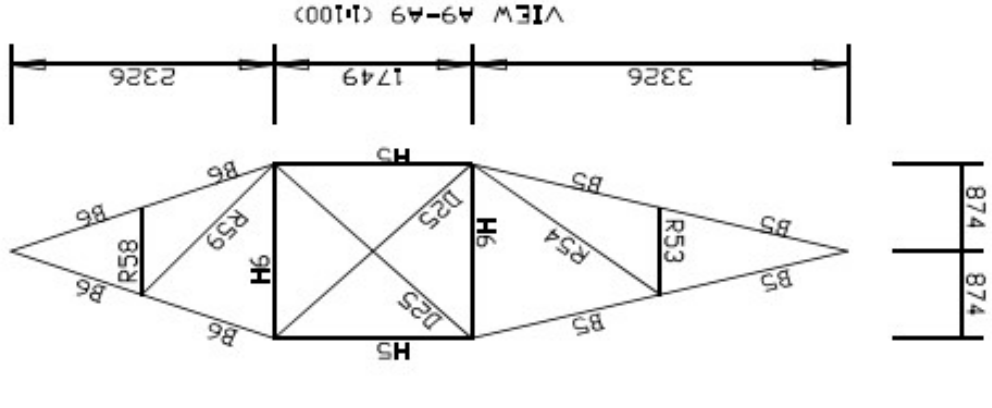
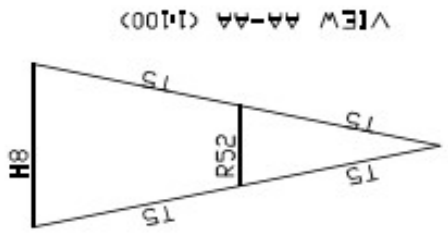
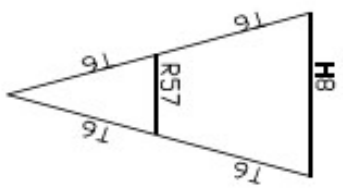


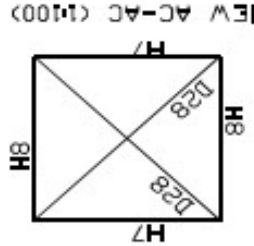
VIEW AA-AA (1:100)



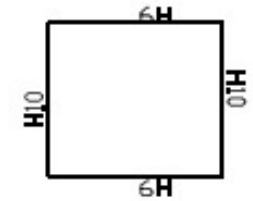
VIEW AB-AB (1:100)



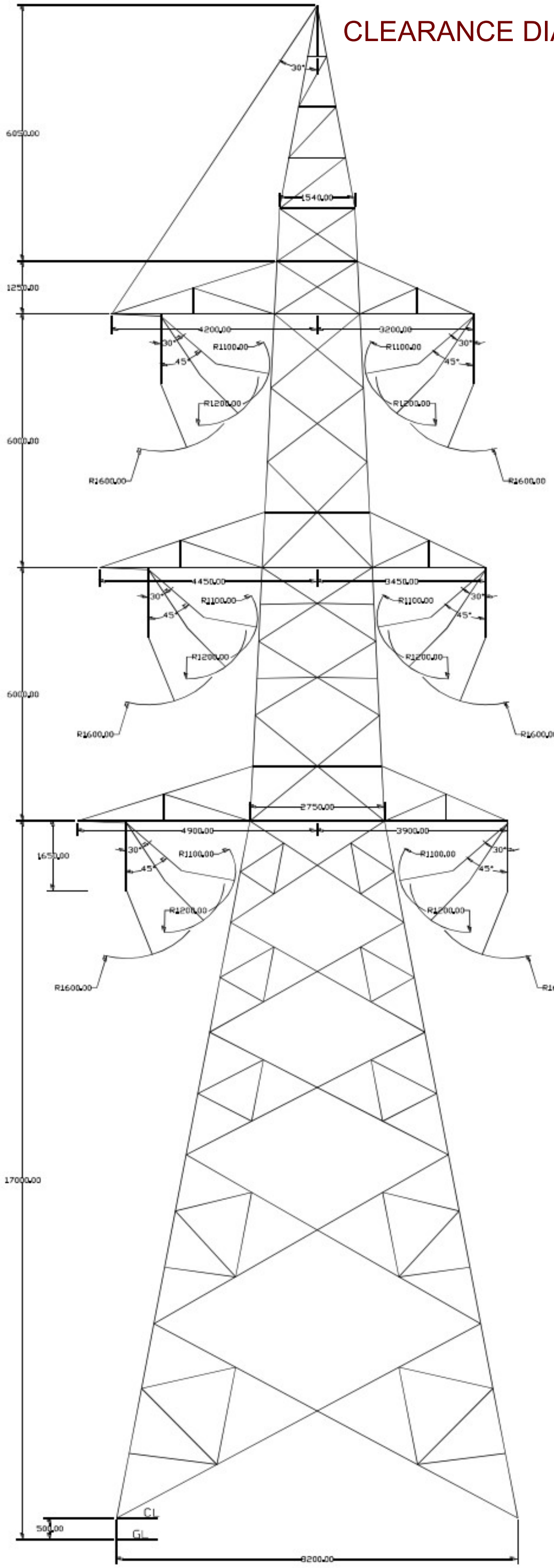
VIEW AC-AC (1:100)



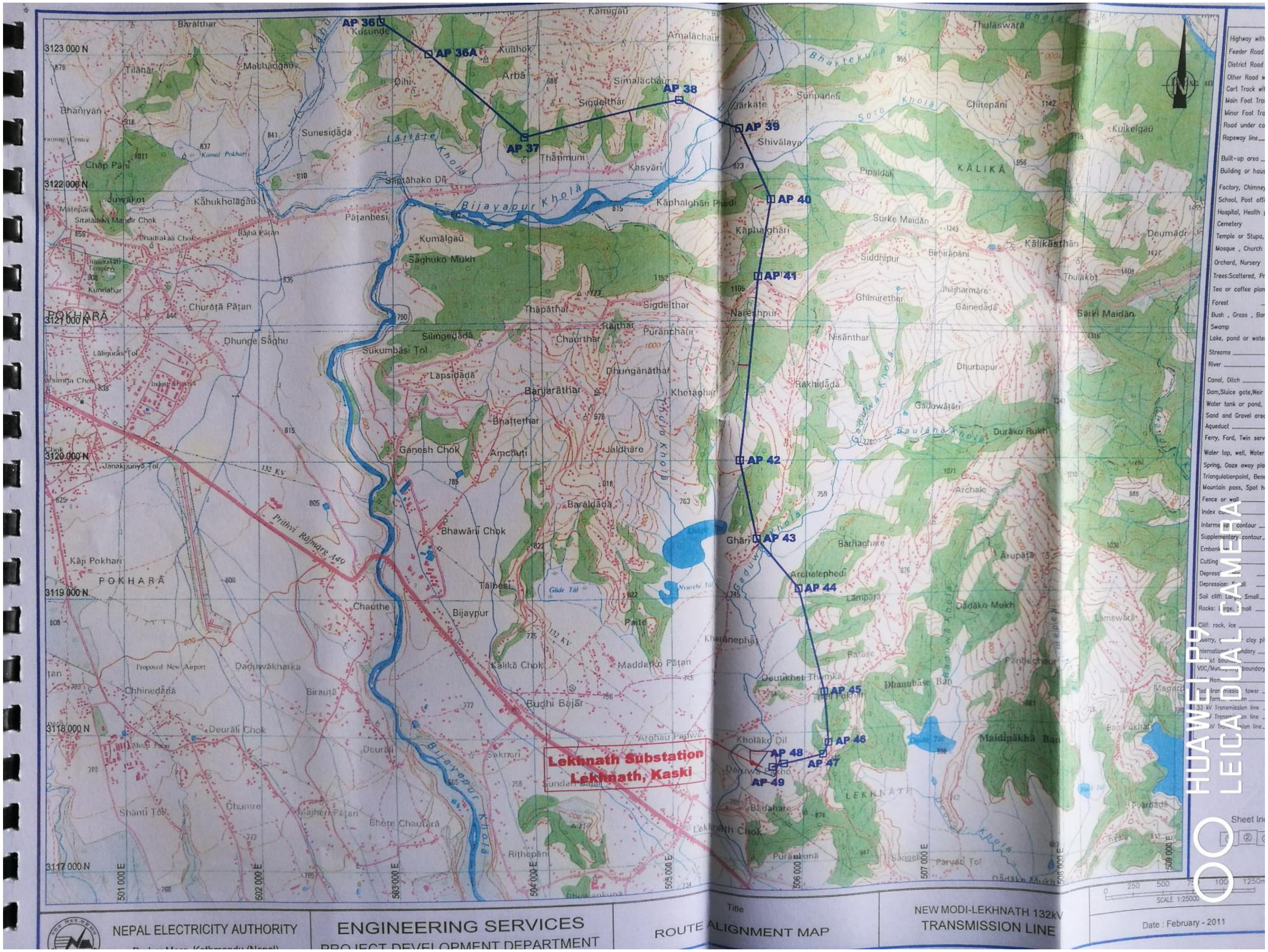
VIEW AD-AD (1:100)



CLEARANCE DIAGRAM DDM



SURVEY DATA
AND
LINE PROFILE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Lekhnath Substation
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KĀLIKĀ
LEKHNĀTH
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132 kV
3123 000 N
3122 000 N
3121 000 N
3120 000 N
3119 000 N
3118 000 N
3117 000 N
501 000 E
502 000 E
503 000 E
504 000 E
505 000 E
506 000 E
507 000 E
508 000 E
509 000 E
NEPAL ELECTRICITY AUTHORITY
ENGINEERING SERVICES
PROJECT DEVELOPMENT DEPARTMENT
Title
ROUTE ALIGNMENT MAP
NEW MODI-LEKHNATH 132kV
TRANSMISSION LINE
SCALE 1:25000
Date : February - 2011
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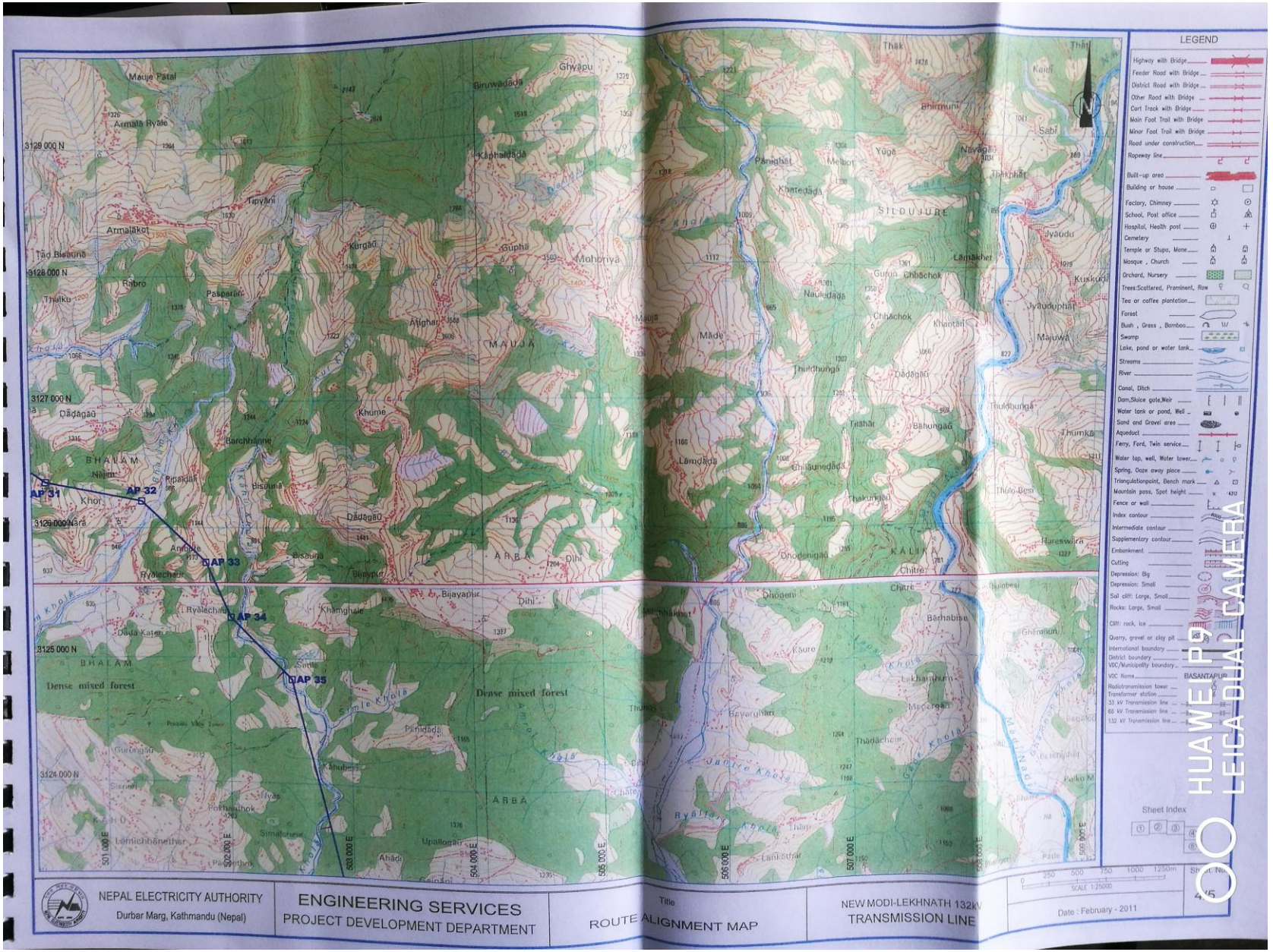
HUAWEI P9
LEICA DUAL CAMERA


LEGEND
Highway with Bridge
Feeder Road with Bridge
District Road with Bridge
Other Road with Bridge
Cart Track with Bridge
Main Foot Trail with Bridge
Minor Foot Trail with Bridge
Road under construction
Ropeway line
Built-up area
Building or house
Factory, Chimney
School, Post office
Hospital, Health post
Cemetery
Temple or Stupa, Mane
Mosque , Church
Orchard, Nursery
Trees:Scattered, Prominent, Row
Tea or coffee plantation
Forest
Bush , Grass , Bamboo
Swamp
Lake, pond or water tank
Streams
River
Canal, Ditch
Dam,Sluice gate,Weir
Water tank or pond, Well
Sand and Gravel area
Aqueduct
Ferry, Ford, Twin service
Water tap, well, Water tower
Spring, Ooze away place
Triangulationpoint, Bench mark
Mountain pass, Spot height
Fence or wall
Index contour
Intermediate contour
Supplementary contour
Embankment
Cutting
Depression: Big
Depression: Small
Sail cliff: Large, Small
Rocks: Large, Small
Cliff: rock, Ice
Quarry, gravel or clay pit
International boundary
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VDC/Municipality boundary
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Transformer station
33 kV Transmission line
66 kV Transmission line
132 kV Transmission line
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3127 000 N
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3124 000 N
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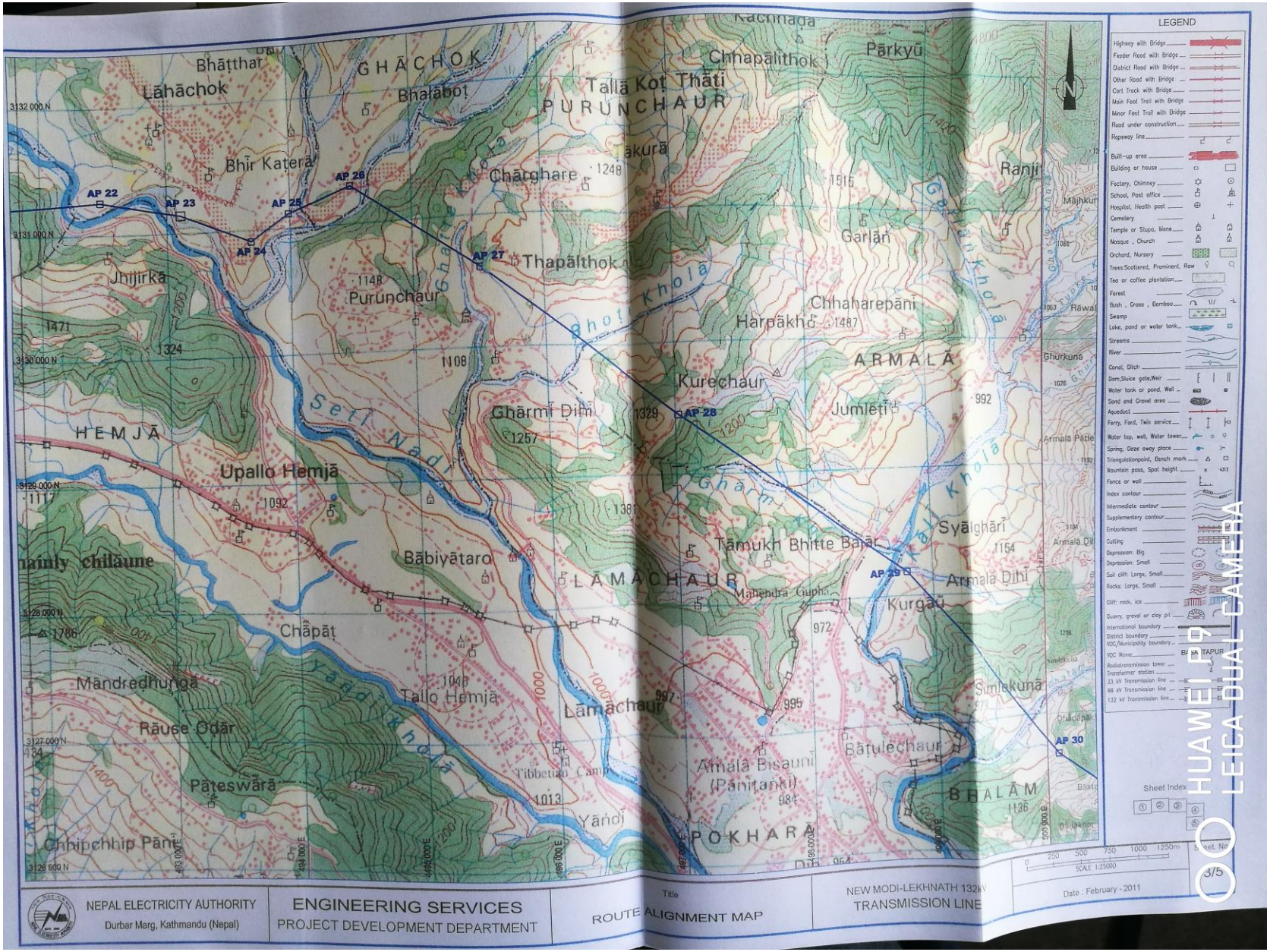
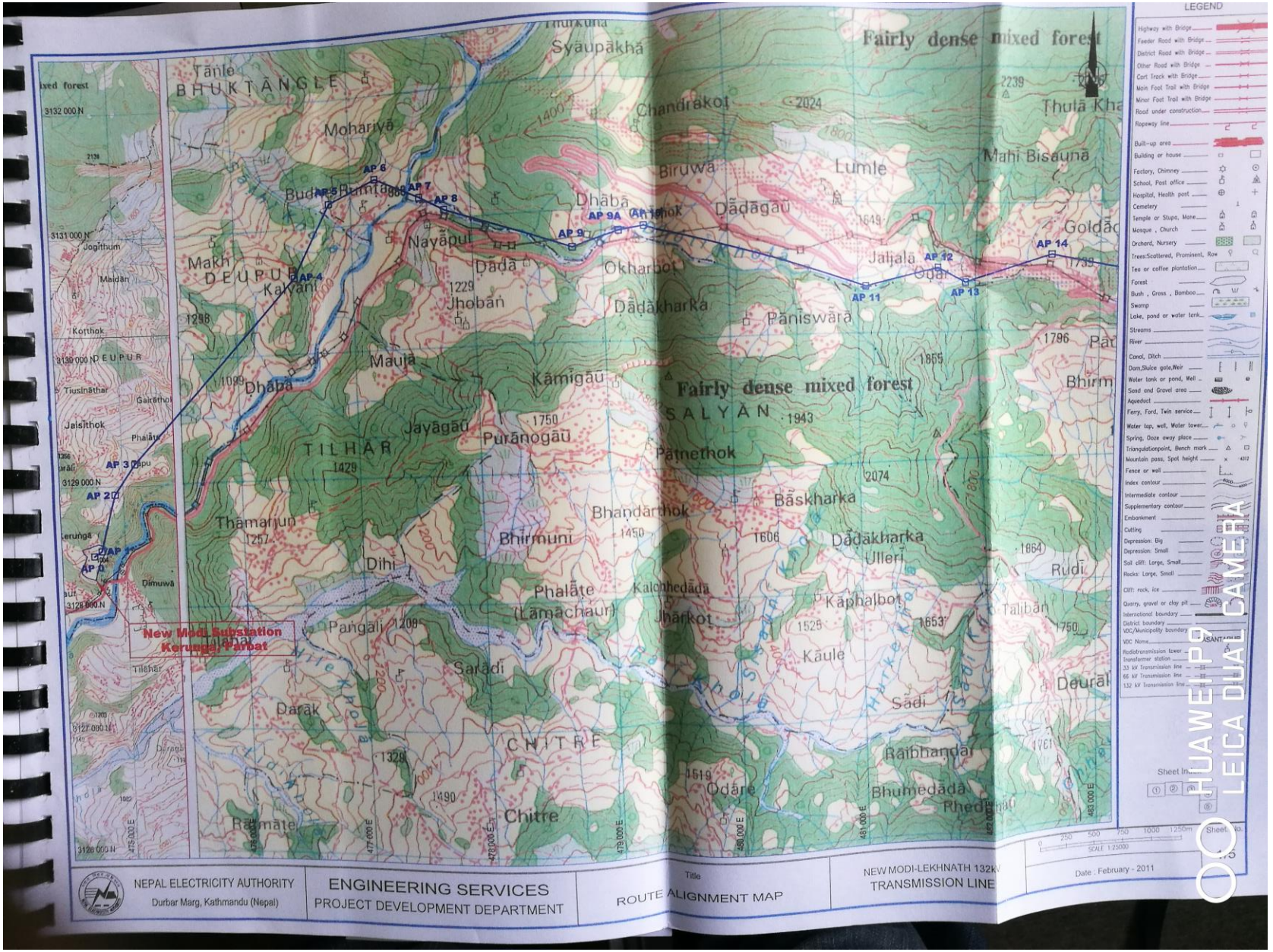
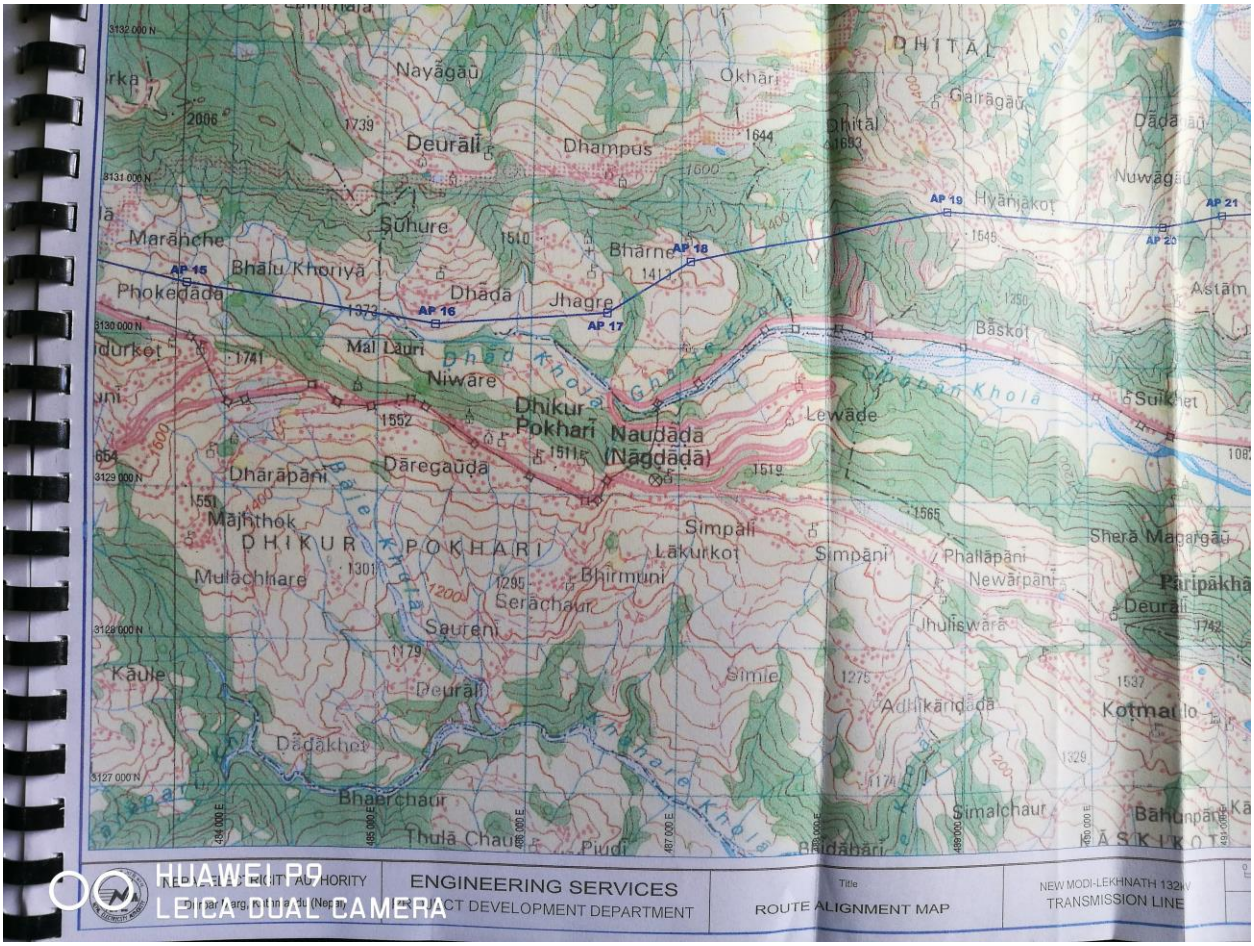
503 000 E
504 000 E
505 000 E
506 000 E
507 000 E
508 000 E
509 000 E
BHALAM
MAUJA
ARBA
KALIKA
SILDUJURE
Dense mixed forest
BASANTAPUR
NEPAL ELECTRICITY AUTHORITY
Durbar Marg, Kathmandu (Nepal)
ENGINEERING SERVICES
PROJECT DEVELOPMENT DEPARTMENT
Title
ROUTE ALIGNMENT MAP
NEW MODI-LEKHNATH 132kV
TRANSMISSION LINE
SCALE 1:25000
Date : February - 2011
Sheet No.
45




Fairly dense mixed forest
Fairly dense mixed forest
Fairly dense mixed forest
BHUKTĀNGLE
DEUPUR
SALYAN
TILHAR
CHITRE
Syāupākhā
Chandrakot
Lumle
Mahi Bisaunā
Biruwā
Dhābā
Dāḍāgāū
Nayāpul
Dāḍā
Jhobān
Okharbot
Dāḍākharka
Pāniswārā
Maujā
Kāmigāū
Jayāgāū
Purānogāū
Pātnethok
Bāskharka
Bhandārthok
Bhirmuni
Dihi
Phalāte
(Lāmachaur)
Kalomedāda
Jhārkot
Kāphalbot
Ullerī
Kāule
Sādi
Pangāli
Saradi
Darāk
Rāmāte
Chitre
Ōdāre
Rāibhandāri
Bhumedāda
Rhedi
Rudi
Talibān
Deurāl
Thāmarjun
Mohariyā
Makh
Kalyāni
Jogithum
Maidān
Korthok
Tiusināthar
Gairāthok
Jaisithok
Phalāṭu
Dimuwā
Tilahar
Tilehar
AP 1
AP 2
AP 3
AP 4
AP 5
AP 6
AP 7
AP 8
AP 9
AP 9A
AP 11
AP 12
AP 13
AP 14
New Modi Substation
Kerunga, Parbat
Kerunga
3132 000 N
3131 000 N
3130 000 N
3129 000 N
3128 000 N
3127 000 E
475 000 E
477 000 E
478 000 E
479 000 E
480 000 E
481 000 E
483 000 E
LEGEND
SCALE 1:25000
NEPAL ELECTRICITY AUTHORITY
Durbar Marg, Kathmandu (Nepal)
ENGINEERING SERVICES
PROJECT DEVELOPMENT DEPARTMENT
Title
ROUTE ALIGNMENT MAP
NEW MODI-LEKHNATH 132kV
TRANSMISSION LINE
Date : February - 2011
Sheet No.



NEW MODI - LEKHNATH 132 kV TRANSMISSION LINE SURVEY

List of Coordinates and Elevation of Direction & Reference Points

S. No	Easting (m)	Northing (m)	Elevation (m)	Remarks
1	474752.531	3128449.569	996.579	AP-0 Direction Point R2
2	474733.239	3128454.216	998.265	AP-0 Reference Point R3
3	474754.963	3128435.712	994.132	AP-0 Reference Point R4
4	474784.382	3128470.496	997.954	AP-1 Direction Point R1
5	474811.892	3128508.641	1004.675	AP-1 Direction Point R2
6	474765.940	3128479.013	1000.338	AP-1 Reference Point R3
7	474822.499	3128480.479	998.714	AP-1 Reference Point R4
8	474925.640	3128919.295	1117.084	AP-2 Direction Point R1
9	474939.233	3128951.595	1122.760	AP-2 Direction Point R2
10	474923.991	3128956.409	1128.577	AP-2 Reference Point R3
11	474942.967	3128931.582	1116.302	AP-2 Reference Point R4
12	475060.282	3129121.509	1140.004	AP-3 Direction Point R1
13	475117.203	3129196.857	1134.800	AP-3 Direction Point R2
14	475078.657	3129191.114	1142.253	AP-3 Reference Point R3
15	475123.639	3129177.265	1133.961	AP-3 Reference Point R4
16	476501.052	3130619.597	1170.506	AP-4 Direction Point R1
17	476510.313	3130632.059	1173.674	AP-4 Direction Point R2
18	476497.822	3130631.760	1171.591	AP-4 Reference Point R3
19	476510.730	3130624.390	1173.077	AP-4 Reference Point R4
20	476801.934	3131174.031	1088.826	AP-5 Direction Point R1
21	476843.865	3131206.860	1086.474	AP-5 Direction Point R2
22	476800.986	3131212.619	1106.478	AP-5 Reference Point R3
23	476822.229	3131180.656	1100.884	AP-5 Reference Point R4
24	477186.791	3131350.214	1045.868	AP-6 Direction Point R1
25	477221.744	3131352.232	1041.026	AP-6 Direction Point R2

NEW MODI - LEKHNATH 132 kV TRANSMISSION LINE SURVEY

List of Coordinates and Elevation of Direction & Reference Points

S. No	Easting (m)	Northing (m)	Elevation (m)	Remarks
26	477203.736	3131370.372	1049.214	AP-6 Reference Point R3
27	477213.403	3131343.186	1038.603	AP-6 Reference Point R4
28	477557.492	3131195.895	996.072	AP-7 Direction Point R1
29	477620.706	3131162.650	1001.286	AP-7 Direction Point R2
30	477583.176	3131196.391	1000.536	AP-7 Reference Point R3
31	477562.854	3131163.390	995.719	AP-7 Reference Point R4
32	477762.945	3131084.363	1034.573	AP-8 Direction Point R1
33	477793.120	3131070.864	1039.564	AP-8 Direction Point R2
34	477777.775	3131102.164	1029.428	AP-8 Reference Point R3
35	477770.404	3131059.333	1042.203	AP-8 Reference Point R4
36	478734.013	3130742.569	1190.284	AP-9 Direction Point R1
37	478797.835	3130739.091	1203.452	AP-9 Direction Point R2
38	478777.184	3130750.426	1200.896	AP-9 Reference Point R3
39	478768.090	3130721.871	1194.844	AP-9 Reference Point R4
40	479115.599	3130849.591	1205.337	AP-9A Direction Point R1
41	479134.502	3130855.145	1206.861	AP-9A Direction Point R2
42	479125.411	3130861.475	1205.580	AP-9A Reference Point R3
43	479130.132	3130846.449	1207.438	AP-9A Reference Point R4
44	479218.799	3130872.438	1221.166	AP-10 Direction Point R1
45	479341.471	3130890.813	1250.432	AP-10 Direction Point R2
46	479339.504	3130907.431	1264.066	AP-10 Reference Point R3
47	479334.118	3130874.967	1239.194	AP-10 Reference Point R4
48	480993.957	3130389.197	1449.238	AP-11 Direction Point R1
49	481240.930	3130412.558	1482.179	AP-11 Direction Point R2

NEW MODI - LEKHNATH 132 kV TRANSMISSION LINE SURVEY

List of Coordinates and Elevation of Direction & Reference Points

S. No	Easting (m)	Northing (m)	Elevation (m)	Remarks
50	481052.747	3130389.171	1456.551	AP-11 Reference Point R3
51	481072.855	3130347.854	1455.982	AP-11 Reference Point R4
52	481665.652	3130512.711	1580.486	AP-12 Direction Point R1
53	481679.082	3130510.754	1582.497	AP-12 Direction Point R2
54	481680.532	3130518.498	1579.584	AP-12 Reference Point R3
55	481671.784	3130507.464	1582.112	AP-12 Reference Point R4
56	481834.388	3130433.656	1582.354	AP-13 Direction Point R1
57	481915.324	3130400.412	1584.547	AP-13 Direction Point R2
58	481897.769	3130440.240	1590.025	AP-13 Reference Point R3
59	481911.248	3130385.494	1585.070	AP-13 Reference Point R4
60	482603.798	3130602.403	1734.564	AP-14 Direction Point R1
61	482654.696	3130597.232	1737.205	AP-14 Direction Point R2
62	482611.874	3130614.123	1738.476	AP-14 Reference Point R3
63	482620.503	3130587.673	1733.873	AP-14 Reference Point R4
64	483683.230	3130374.850	1625.570	AP-15 Direction Point R1
65	483826.741	3130351.243	1612.365	AP-15 Direction Point R2
66	483717.160	3130377.771	1623.064	AP-15 Reference Point R3
67	483718.362	3130345.730	1632.144	AP-15 Reference Point R4
68	485351.590	3130128.324	1382.097	AP-16 Direction Point R1
69	485373.049	3130127.402	1382.372	AP-16 Direction Point R2
70	485382.372	3130141.901	1385.098	AP-16 Reference Point R3
71	485391.257	3130113.400	1375.550	AP-16 Reference Point R4
72	486466.042	3130237.591	1365.175	AP-17 Direction Point R1
73	486515.320	3130251.104	1364.985	AP-17 Direction Point R2
74	486484.886	3130255.017	1369.596	AP-17 Reference Point R3

NEW MODI - LEKHNATH 132 kV TRANSMISSION LINE SURVEY

List of Coordinates and Elevation of Direction & Reference Points

S. No	Easting (m)	Northing (m)	Elevation (m)	Remarks
75	486504.133	3130224.913	1358.408	AP-17 Reference Point R4
76	487025.516	3130580.280	1433.618	AP-18 Direction Point R1
77	487081.951	3130607.778	1436.419	AP-18 Direction Point R2
78	487061.713	3130619.437	1443.745	AP-18 Reference Point R3
79	487059.890	3130588.705	1435.501	AP-18 Reference Point R4
80	488870.976	3131026.249	1520.825	AP-19 Direction Point R1
81	488887.685	3131027.849	1520.420	AP-19 Direction Point R2
82	488874.997	3131038.870	1516.234	AP-19 Reference Point R3
83	488881.063	3131014.731	1526.572	AP-19 Reference Point R4
84	490582.391	3131058.499	1367.538	AP-20 Direction Point R1
85	490643.547	3131063.046	1377.773	AP-20 Direction Point R2
86	490625.170	3131081.882	1376.364	AP-20 Reference Point R3
87	490629.295	3131039.907	1379.667	AP-20 Reference Point R4
88	491061.335	3131157.094	1400.622	AP-21 Direction Point R1
89	491150.127	3131167.542	1399.980	AP-21 Direction Point R2
90	491087.866	3131179.185	1398.864	AP-21 Reference Point R3
91	491084.103	3131139.640	1403.099	AP-21 Reference Point R4
92	492353.349	3131256.655	1072.197	AP-22 Direction Point R1
93	492566.461	3131249.386	1080.242	AP-22 Direction Point R2
94	492485.660	3131294.735	1077.102	AP-22 Reference Point R3
95	492456.948	3131234.855	1077.911	AP-22 Reference Point R4
96	493079.959	3131155.325	1091.935	AP-23 Direction Point R1
97	493174.434	3131126.284	1093.632	AP-23 Direction Point R2
98	493127.367	3131169.834	1092.702	AP-23 Reference Point R3
99	493111.042	3131098.636	1092.738	AP-23 Reference Point R4

NEW MODI - LEKHNATH 132 kV TRANSMISSION LINE SURVEY

List of Coordinates and Elevation of Direction & Reference Points

S. No	Easting (m)	Northing (m)	Elevation (m)	Remarks
100	493646.571	3130938.043	1100.329	AP-24 Direction Point R1
101	493728.395	3130945.293	1100.463	AP-24 Direction Point R2
102	493697.029	3130966.329	1101.516	AP-24 Reference Point R3
103	493673.887	3130886.125	1095.704	AP-24 Reference Point R4
104	493982.323	3131112.430	1094.917	AP-25 Direction Point R1
105	494012.335	3131128.946	1095.281	AP-25 Direction Point R2
106	493993.369	3131134.719	1095.365	AP-25 Reference Point R3
107	494002.854	3131104.544	1095.441	AP-25 Reference Point R4
108	494500.573	3131299.130	1098.932	AP-26 Direction Point R1
109	494527.111	3131298.095	1099.755	AP-26 Direction Point R2
110	494520.881	3131316.525	1099.878	AP-26 Reference Point R3
111	494512.129	3131292.916	1099.525	AP-26 Reference Point R4
112	495528.752	3130627.482	1185.453	AP-27 Direction Point R1
113	495554.615	3130608.404	1185.728	AP-27 Direction Point R2
114	495556.534	3130628.919	1186.959	AP-27 Reference Point R3
115	497023.778	3129481.741	1298.651	AP-28 Direction Point R1
116	497040.498	3129469.364	1302.427	AP-28 Direction Point R2
117	497039.157	3129479.631	1298.951	AP-28 Reference Point R3
118	497028.178	3129471.183	1302.229	AP-28 Reference Point R4
119	498785.928	3128220.559	948.751	AP-29 Direction Point R1
120	498821.386	3128187.589	949.872	AP-29 Direction Point R2
121	498816.349	3128208.440	948.887	AP-29 Reference Point R3
122	498801.790	3128200.541	949.412	AP-29 Reference Point R4
123	500086.588	3126697.760	1001.743	AP-30 Direction Point R1
124	500109.312	3126678.017	1003.781	AP-30 Direction Point R2

NEW MODI - LEKHNATH 132 kV TRANSMISSION LINE SURVEY

List of Coordinates and Elevation of Direction & Reference Points

S. No	Easting (m)	Northing (m)	Elevation (m)	Remarks
125	500106.974	3126699.942	1005.439	AP-30 Reference Point R3
126	500086.509	3126685.347	1000.256	AP-30 Reference Point R4
127	500524.280	3126387.457	1211.409	AP-31 Direction Point R1
128	500548.025	3126376.440	1210.691	AP-31 Direction Point R2
129	500547.777	3126383.651	1210.547	AP-31 Reference Point R3
130	500536.219	3126371.588	1213.006	AP-31 Reference Point R4
131	501278.016	3126233.944	988.872	AP-32 Direction Point R1
132	501314.550	3126214.046	983.550	AP-32 Direction Point R2
133	501301.084	3126244.723	985.600	AP-32 Reference Point R3
134	501282.391	3126211.307	985.690	AP-32 Reference Point R4
135	501804.127	3125753.997	1147.057	AP-33 Direction Point R1
136	501821.744	3125734.338	1146.444	AP-33 Direction Point R2
137	501827.667	3125757.088	1138.286	AP-33 Reference Point R3
138	501795.750	3125742.101	1151.707	AP-33 Reference Point R4
139	502006.943	3125327.861	1026.245	AP-34 Direction Point R1
140	502026.271	3125295.539	1025.701	AP-34 Direction Point R2
141	502038.540	3125311.262	1021.382	AP-34 Reference Point R3
142	501995.384	3125307.372	1038.990	AP-34 Reference Point R4
143	502497.568	3124834.290	931.669	AP-35 Direction Point R1
144	502514.987	3124810.419	935.408	AP-35 Direction Point R2
145	502539.796	3124822.519	937.806	AP-35 Reference Point R3
146	502483.503	3124816.521	930.075	AP-35 Reference Point R4
147	502910.291	3123214.839	1050.262	AP-36 Direction Point R1
148	502924.140	3123195.568	1043.566	AP-36 Direction Point R2
149	502930.545	3123209.185	1050.995	AP-36 Reference Point R3

NEW MODI - LEKHNATH 132 kV TRANSMISSION LINE SURVEY

List of Coordinates and Elevation of Direction & Reference Points

S. No	Easting (m)	Northing (m)	Elevation (m)	Remarks
150	502902.486	3123204.554	1042.165	AP-36 Reference Point R4
151	503249.298	3122970.438	1095.341	AP-36A Direction Point R1
152	503281.466	3122944.486	1088.854	AP-36A Direction Point R2
153	503273.133	3122966.198	1099.014	AP-36A Reference Point R3
154	503251.130	3122962.703	1094.341	AP-36A Reference Point R4
155	503954.973	3122336.212	928.272	AP-37 Direction Point R1
156	503978.093	3122328.249	934.220	AP-37 Direction Point R2
157	503964.033	3122333.670	932.355	AP-37 Reference Point R3
158	503963.879	3122314.342	931.672	AP-37 Reference Point R4
159	505060.130	3122570.033	880.852	AP-38 Direction Point R1
160	505086.814	3122565.792	874.024	AP-38 Direction Point R2
161	505075.933	3122591.940	879.605	AP-38 Reference Point R3
162	505072.847	3122558.116	873.867	AP-38 Reference Point R4
163	505506.080	3122370.920	854.730	AP-39 Direction Point R1
164	505523.055	3122351.238	856.835	AP-39 Direction Point R2
165	505531.471	3122372.234	860.485	AP-39 Reference Point R3
166	505498.430	3122360.665	849.945	AP-39 Reference Point R4
167	505726.430	3121864.213	935.828	AP-40 Direction Point R1
168	505728.449	3121822.681	942.051	AP-40 Direction Point R2
169	505752.787	3121855.467	938.689	AP-40 Reference Point R3
170	505716.033	3121846.144	940.934	AP-40 Reference Point R4
171	505638.908	3121320.392	1134.763	AP-41 Direction Point R1
172	505635.438	3121297.164	1137.048	AP-41 Direction Point R2
173	505644.389	3121298.735	1137.736	AP-41 Reference Point R3
174	505617.435	3121311.109	1130.711	AP-41 Reference Point R4

NEW MODI - LEKHNATH 132 kV TRANSMISSION LINE SURVEY

List of Coordinates and Elevation of Direction & Reference Points

S. No	Easting (m)	Northing (m)	Elevation (m)	Remarks
175	505509.136	3120033.990	821.117	AP-42 Direction Point R1
176	505510.917	3119978.216	808.917	AP-42 Direction Point R2
177	505520.475	3119997.272	813.361	AP-42 Reference Point R3
178	505485.722	3119998.991	813.361	AP-42 Reference Point R4
179	505629.535	3119445.888	787.957	AP-43 Direction Point R1
180	505638.376	3119426.425	786.545	AP-43 Direction Point R2
181	505644.604	3119440.140	786.742	AP-43 Reference Point R3
182	505622.430	3119430.550	786.853	AP-43 Reference Point R4
183	505932.481	3119079.872	802.659	AP-44 Direction Point R1
184	505946.481	3119054.941	803.455	AP-44 Direction Point R2
185	505948.934	3119071.762	806.589	AP-44 Reference Point R3
186	505935.757	3119059.609	803.453	AP-44 Reference Point R4
187	506135.696	3118321.929	796.713	AP-45 Direction Point R1
188	506141.881	3118288.334	798.394	AP-45 Direction Point R2
189	506147.375	3118312.251	802.558	AP-45 Reference Point R3
190	506122.955	3118300.001	798.315	AP-45 Reference Point R4
191	506174.417	3117937.754	791.594	AP-46 Direction Point R1
192	506172.416	3117908.490	800.168	AP-46 Direction Point R2
193	506194.549	3117914.705	802.122	AP-46 Reference Point R3
194	506160.150	3117918.848	793.336	AP-46 Reference Point R4
195	506149.356	3117861.003	795.062	AP-47 Direction Point R1
196	506117.577	3117830.104	784.318	AP-47 Direction Point R2
197	506144.129	3117826.274	798.414	AP-47 Reference Point R3
198	506120.216	3117847.139	789.448	AP-47 Reference Point R4
199	505872.994	3117777.600	749.409	AP-48 Direction Point R1

NEW MODI - LEKHNATH 132 kV TRANSMISSION LINE SURVEY

List of Coordinates and Elevation of Direction & Reference Points

S. No	Easting (m)	Northing (m)	Elevation (m)	Remarks
200	505806.168	3117760.222	740.128	AP-48 Direction Point R2
201	505844.073	3117767.075	751.184	AP-48 Reference Point R3
202	505844.936	3117781.815	747.405	AP-48 Reference Point R4
203	505776.075	3117751.385	740.600	AP-49 Direction Point R1
204	505778.820	3117733.108	740.261	AP-49 Reference Point R3
205	505758.150	3117757.194	740.679	AP-49 Reference Point R4

NEW MODI - LEKHNATH 132 kV TRANSMISSION LINE SURVEY

List of Coordinates and Elevation of Direction & Reference Points

S. No	Easting (m)	Northing (m)	Elevation (m)	Remarks
1	474752.531	3128449.569	996.579	AP-0 Direction Point R2
2	474733.239	3128454.216	998.265	AP-0 Reference Point R3
3	474754.963	3128435.712	994.132	AP-0 Reference Point R4
4	474784.382	3128470.496	997.954	AP-1 Direction Point R1
5	474811.892	3128508.641	1004.675	AP-1 Direction Point R2
6	474765.940	3128479.013	1000.338	AP-1 Reference Point R3
7	474822.499	3128480.479	998.714	AP-1 Reference Point R4
8	474925.640	3128919.295	1117.084	AP-2 Direction Point R1
9	474939.233	3128951.595	1122.760	AP-2 Direction Point R2
10	474923.991	3128956.409	1128.577	AP-2 Reference Point R3
11	474942.967	3128931.582	1116.302	AP-2 Reference Point R4
12	475060.282	3129121.509	1140.004	AP-3 Direction Point R1
13	475117.203	3129196.857	1134.800	AP-3 Direction Point R2
14	475078.657	3129191.114	1142.253	AP-3 Reference Point R3
15	475123.639	3129177.265	1133.961	AP-3 Reference Point R4
16	476501.052	3130619.597	1170.506	AP-4 Direction Point R1
17	476510.313	3130632.059	1173.674	AP-4 Direction Point R2
18	476497.822	3130631.760	1171.591	AP-4 Reference Point R3
19	476510.730	3130624.390	1173.077	AP-4 Reference Point R4
20	476801.934	3131174.031	1088.826	AP-5 Direction Point R1
21	476843.865	3131206.860	1086.474	AP-5 Direction Point R2
22	476800.986	3131212.619	1106.478	AP-5 Reference Point R3
23	476822.229	3131180.656	1100.884	AP-5 Reference Point R4
24	477186.791	3131350.214	1045.868	AP-6 Direction Point R1
25	477221.744	3131352.232	1041.026	AP-6 Direction Point R2

NEW MODI - LEKHNATH 132 kV TRANSMISSION LINE SURVEY

List of Coordinates and Elevation of Direction & Reference Points

S. No	Easting (m)	Northing (m)	Elevation (m)	Remarks
26	477203.736	3131370.372	1049.214	AP-6 Reference Point R3
27	477213.403	3131343.186	1038.603	AP-6 Reference Point R4
28	477557.492	3131195.895	996.072	AP-7 Direction Point R1
29	477620.706	3131162.650	1001.286	AP-7 Direction Point R2
30	477583.176	3131196.391	1000.536	AP-7 Reference Point R3
31	477562.854	3131163.390	995.719	AP-7 Reference Point R4
32	477762.945	3131084.363	1034.573	AP-8 Direction Point R1
33	477793.120	3131070.864	1039.564	AP-8 Direction Point R2
34	477777.775	3131102.164	1029.428	AP-8 Reference Point R3
35	477770.404	3131059.333	1042.203	AP-8 Reference Point R4
36	478734.013	3130742.569	1190.284	AP-9 Direction Point R1
37	478797.835	3130739.091	1203.452	AP-9 Direction Point R2
38	478777.184	3130750.426	1200.896	AP-9 Reference Point R3
39	478768.090	3130721.871	1194.844	AP-9 Reference Point R4
40	479115.599	3130849.591	1205.337	AP-9A Direction Point R1
41	479134.502	3130855.145	1206.861	AP-9A Direction Point R2
42	479125.411	3130861.475	1205.580	AP-9A Reference Point R3
43	479130.132	3130846.449	1207.438	AP-9A Reference Point R4
44	479218.799	3130872.438	1221.166	AP-10 Direction Point R1
45	479341.471	3130890.813	1250.432	AP-10 Direction Point R2
46	479339.504	3130907.431	1264.066	AP-10 Reference Point R3
47	479334.118	3130874.967	1239.194	AP-10 Reference Point R4
48	480993.957	3130389.197	1449.238	AP-11 Direction Point R1
49	481240.930	3130412.558	1482.179	AP-11 Direction Point R2

NEW MODI - LEKHNATH 132 kV TRANSMISSION LINE SURVEY

List of Coordinates and Elevation of Direction & Reference Points

S. No	Easting (m)	Northing (m)	Elevation (m)	Remarks
50	481052.747	3130389.171	1456.551	AP-11 Reference Point R3
51	481072.855	3130347.854	1455.982	AP-11 Reference Point R4
52	481665.652	3130512.711	1580.486	AP-12 Direction Point R1
53	481679.082	3130510.754	1582.497	AP-12 Direction Point R2
54	481680.532	3130518.498	1579.584	AP-12 Reference Point R3
55	481671.784	3130507.464	1582.112	AP-12 Reference Point R4
56	481834.388	3130433.656	1582.354	AP-13 Direction Point R1
57	481915.324	3130400.412	1584.547	AP-13 Direction Point R2
58	481897.769	3130440.240	1590.025	AP-13 Reference Point R3
59	481911.248	3130385.494	1585.070	AP-13 Reference Point R4
60	482603.798	3130602.403	1734.564	AP-14 Direction Point R1
61	482654.696	3130597.232	1737.205	AP-14 Direction Point R2
62	482611.874	3130614.123	1738.476	AP-14 Reference Point R3
63	482620.503	3130587.673	1733.873	AP-14 Reference Point R4
64	483683.230	3130374.850	1625.570	AP-15 Direction Point R1
65	483826.741	3130351.243	1612.365	AP-15 Direction Point R2
66	483717.160	3130377.771	1623.064	AP-15 Reference Point R3
67	483718.362	3130345.730	1632.144	AP-15 Reference Point R4
68	485351.590	3130128.324	1382.097	AP-16 Direction Point R1
69	485373.049	3130127.402	1382.372	AP-16 Direction Point R2
70	485382.372	3130141.901	1385.098	AP-16 Reference Point R3
71	485391.257	3130113.400	1375.550	AP-16 Reference Point R4
72	486466.042	3130237.591	1365.175	AP-17 Direction Point R1
73	486515.320	3130251.104	1364.985	AP-17 Direction Point R2
74	486484.886	3130255.017	1369.596	AP-17 Reference Point R3

NEW MODI - LEKHNATH 132 kV TRANSMISSION LINE SURVEY

List of Coordinates and Elevation of Direction & Reference Points

S. No	Easting (m)	Northing (m)	Elevation (m)	Remarks
75	486504.133	3130224.913	1358.408	AP-17 Reference Point R4
76	487025.516	3130580.280	1433.618	AP-18 Direction Point R1
77	487081.951	3130607.778	1436.419	AP-18 Direction Point R2
78	487061.713	3130619.437	1443.745	AP-18 Reference Point R3
79	487059.890	3130588.705	1435.501	AP-18 Reference Point R4
80	488870.976	3131026.249	1520.825	AP-19 Direction Point R1
81	488887.685	3131027.849	1520.420	AP-19 Direction Point R2
82	488874.997	3131038.870	1516.234	AP-19 Reference Point R3
83	488881.063	3131014.731	1526.572	AP-19 Reference Point R4
84	490582.391	3131058.499	1367.538	AP-20 Direction Point R1
85	490643.547	3131063.046	1377.773	AP-20 Direction Point R2
86	490625.170	3131081.882	1376.364	AP-20 Reference Point R3
87	490629.295	3131039.907	1379.667	AP-20 Reference Point R4
88	491061.335	3131157.094	1400.622	AP-21 Direction Point R1
89	491150.127	3131167.542	1399.980	AP-21 Direction Point R2
90	491087.866	3131179.185	1398.864	AP-21 Reference Point R3
91	491084.103	3131139.640	1403.099	AP-21 Reference Point R4
92	492353.349	3131256.655	1072.197	AP-22 Direction Point R1
93	492566.461	3131249.386	1080.242	AP-22 Direction Point R2
94	492485.660	3131294.735	1077.102	AP-22 Reference Point R3
95	492456.948	3131234.855	1077.911	AP-22 Reference Point R4
96	493079.959	3131155.325	1091.935	AP-23 Direction Point R1
97	493174.434	3131126.284	1093.632	AP-23 Direction Point R2
98	493127.367	3131169.834	1092.702	AP-23 Reference Point R3
99	493111.042	3131098.636	1092.738	AP-23 Reference Point R4

NEW MODI - LEKHNATH 132 kV TRANSMISSION LINE SURVEY

List of Coordinates and Elevation of Direction & Reference Points

S. No	Easting (m)	Northing (m)	Elevation (m)	Remarks
100	493646.571	3130938.043	1100.329	AP-24 Direction Point R1
101	493728.395	3130945.293	1100.463	AP-24 Direction Point R2
102	493697.029	3130966.329	1101.516	AP-24 Reference Point R3
103	493673.887	3130886.125	1095.704	AP-24 Reference Point R4
104	493982.323	3131112.430	1094.917	AP-25 Direction Point R1
105	494012.335	3131128.946	1095.281	AP-25 Direction Point R2
106	493993.369	3131134.719	1095.365	AP-25 Reference Point R3
107	494002.854	3131104.544	1095.441	AP-25 Reference Point R4
108	494500.573	3131299.130	1098.932	AP-26 Direction Point R1
109	494527.111	3131298.095	1099.755	AP-26 Direction Point R2
110	494520.881	3131316.525	1099.878	AP-26 Reference Point R3
111	494512.129	3131292.916	1099.525	AP-26 Reference Point R4
112	495528.752	3130627.482	1185.453	AP-27 Direction Point R1
113	495554.615	3130608.404	1185.728	AP-27 Direction Point R2
114	495556.534	3130628.919	1186.959	AP-27 Reference Point R3
115	497023.778	3129481.741	1298.651	AP-28 Direction Point R1
116	497040.498	3129469.364	1302.427	AP-28 Direction Point R2
117	497039.157	3129479.631	1298.951	AP-28 Reference Point R3
118	497028.178	3129471.183	1302.229	AP-28 Reference Point R4
119	498785.928	3128220.559	948.751	AP-29 Direction Point R1
120	498821.386	3128187.589	949.872	AP-29 Direction Point R2
121	498816.349	3128208.440	948.887	AP-29 Reference Point R3
122	498801.790	3128200.541	949.412	AP-29 Reference Point R4
123	500086.588	3126697.760	1001.743	AP-30 Direction Point R1
124	500109.312	3126678.017	1003.781	AP-30 Direction Point R2

NEW MODI - LEKHNATH 132 kV TRANSMISSION LINE SURVEY

List of Coordinates and Elevation of Direction & Reference Points

S. No	Easting (m)	Northing (m)	Elevation (m)	Remarks
125	500106.974	3126699.942	1005.439	AP-30 Reference Point R3
126	500086.509	3126685.347	1000.256	AP-30 Reference Point R4
127	500524.280	3126387.457	1211.409	AP-31 Direction Point R1
128	500548.025	3126376.440	1210.691	AP-31 Direction Point R2
129	500547.777	3126383.651	1210.547	AP-31 Reference Point R3
130	500536.219	3126371.588	1213.006	AP-31 Reference Point R4
131	501278.016	3126233.944	988.872	AP-32 Direction Point R1
132	501314.550	3126214.046	983.550	AP-32 Direction Point R2
133	501301.084	3126244.723	985.600	AP-32 Reference Point R3
134	501282.391	3126211.307	985.690	AP-32 Reference Point R4
135	501804.127	3125753.997	1147.057	AP-33 Direction Point R1
136	501821.744	3125734.338	1146.444	AP-33 Direction Point R2
137	501827.667	3125757.088	1138.286	AP-33 Reference Point R3
138	501795.750	3125742.101	1151.707	AP-33 Reference Point R4
139	502006.943	3125327.861	1026.245	AP-34 Direction Point R1
140	502026.271	3125295.539	1025.701	AP-34 Direction Point R2
141	502038.540	3125311.262	1021.382	AP-34 Reference Point R3
142	501995.384	3125307.372	1038.990	AP-34 Reference Point R4
143	502497.568	3124834.290	931.669	AP-35 Direction Point R1
144	502514.987	3124810.419	935.408	AP-35 Direction Point R2
145	502539.796	3124822.519	937.806	AP-35 Reference Point R3
146	502483.503	3124816.521	930.075	AP-35 Reference Point R4
147	502910.291	3123214.839	1050.262	AP-36 Direction Point R1
148	502924.140	3123195.568	1043.566	AP-36 Direction Point R2
149	502930.545	3123209.185	1050.995	AP-36 Reference Point R3

NEW MODI - LEKHNATH 132 kV TRANSMISSION LINE SURVEY

List of Coordinates and Elevation of Direction & Reference Points

S. No	Easting (m)	Northing (m)	Elevation (m)	Remarks
150	502902.486	3123204.554	1042.165	AP-36 Reference Point R4
151	503249.298	3122970.438	1095.341	AP-36A Direction Point R1
152	503281.466	3122944.486	1088.854	AP-36A Direction Point R2
153	503273.133	3122966.198	1099.014	AP-36A Reference Point R3
154	503251.130	3122962.703	1094.341	AP-36A Reference Point R4
155	503954.973	3122336.212	928.272	AP-37 Direction Point R1
156	503978.093	3122328.249	934.220	AP-37 Direction Point R2
157	503964.033	3122333.670	932.355	AP-37 Reference Point R3
158	503963.879	3122314.342	931.672	AP-37 Reference Point R4
159	505060.130	3122570.033	880.852	AP-38 Direction Point R1
160	505086.814	3122565.792	874.024	AP-38 Direction Point R2
161	505075.933	3122591.940	879.605	AP-38 Reference Point R3
162	505072.847	3122558.116	873.867	AP-38 Reference Point R4
163	505506.080	3122370.920	854.730	AP-39 Direction Point R1
164	505523.055	3122351.238	856.835	AP-39 Direction Point R2
165	505531.471	3122372.234	860.485	AP-39 Reference Point R3
166	505498.430	3122360.665	849.945	AP-39 Reference Point R4
167	505726.430	3121864.213	935.828	AP-40 Direction Point R1
168	505728.449	3121822.681	942.051	AP-40 Direction Point R2
169	505752.787	3121855.467	938.689	AP-40 Reference Point R3
170	505716.033	3121846.144	940.934	AP-40 Reference Point R4
171	505638.908	3121320.392	1134.763	AP-41 Direction Point R1
172	505635.438	3121297.164	1137.048	AP-41 Direction Point R2
173	505644.389	3121298.735	1137.736	AP-41 Reference Point R3
174	505617.435	3121311.109	1130.711	AP-41 Reference Point R4

NEW MODI - LEKHNATH 132 kV TRANSMISSION LINE SURVEY

List of Coordinates and Elevation of Direction & Reference Points

S. No	Easting (m)	Northing (m)	Elevation (m)	Remarks
175	505509.136	3120033.990	821.117	AP-42 Direction Point R1
176	505510.917	3119978.216	808.917	AP-42 Direction Point R2
177	505520.475	3119997.272	813.361	AP-42 Reference Point R3
178	505485.722	3119998.991	813.361	AP-42 Reference Point R4
179	505629.535	3119445.888	787.957	AP-43 Direction Point R1
180	505638.376	3119426.425	786.545	AP-43 Direction Point R2
181	505644.604	3119440.140	786.742	AP-43 Reference Point R3
182	505622.430	3119430.550	786.853	AP-43 Reference Point R4
183	505932.481	3119079.872	802.659	AP-44 Direction Point R1
184	505946.481	3119054.941	803.455	AP-44 Direction Point R2
185	505948.934	3119071.762	806.589	AP-44 Reference Point R3
186	505935.757	3119059.609	803.453	AP-44 Reference Point R4
187	506135.696	3118321.929	796.713	AP-45 Direction Point R1
188	506141.881	3118288.334	798.394	AP-45 Direction Point R2
189	506147.375	3118312.251	802.558	AP-45 Reference Point R3
190	506122.955	3118300.001	798.315	AP-45 Reference Point R4
191	506174.417	3117937.754	791.594	AP-46 Direction Point R1
192	506172.416	3117908.490	800.168	AP-46 Direction Point R2
193	506194.549	3117914.705	802.122	AP-46 Reference Point R3
194	506160.150	3117918.848	793.336	AP-46 Reference Point R4
195	506149.356	3117861.003	795.062	AP-47 Direction Point R1
196	506117.577	3117830.104	784.318	AP-47 Direction Point R2
197	506144.129	3117826.274	798.414	AP-47 Reference Point R3
198	506120.216	3117847.139	789.448	AP-47 Reference Point R4
199	505872.994	3117777.600	749.409	AP-48 Direction Point R1

NEW MODI - LEKHNATH 132 kV TRANSMISSION LINE SURVEY

List of Coordinates and Elevation of Direction & Reference Points

S. No	Easting (m)	Northing (m)	Elevation (m)	Remarks
200	505806.168	3117760.222	740.128	AP-48 Direction Point R2
201	505844.073	3117767.075	751.184	AP-48 Reference Point R3
202	505844.936	3117781.815	747.405	AP-48 Reference Point R4
203	505776.075	3117751.385	740.600	AP-49 Direction Point R1
204	505778.820	3117733.108	740.261	AP-49 Reference Point R3
205	505758.150	3117757.194	740.679	AP-49 Reference Point R4

NEW MODI - LEKHNATH 132 kV TRANSMISSION LINE SURVEY

List of Coordinates and Elevation of Ground Control Points

S. No	Easting (m)	Northing (m)	Elevation (m)	Remarks
1	474692.311	3128268.188	982.589	ML-1 New Modi Substation
2	474708.237	3128472.449	1005.595	ML-2 New Modi Substation
3	474807.206	3128479.240	999.620	ML-3 Near AP-1
4	475095.230	3129183.417	1139.522	ML-4 Near AP-3
5	475380.084	3129495.536	1141.171	ML-5
6	476524.443	3130661.734	1180.488	ML-6 Near AP-4
7	478731.792	3130748.134	1191.980	ML-7 Near AP-9
8	488842.723	3131040.356	1515.553	ML-8 Near AP-19
9	493086.324	3131087.425	1091.791	ML-9 Near AP-23
10	505494.824	3122364.684	848.949	ML-10 Near AP-39
11	505617.209	3121291.569	1134.558	ML-11 Near AP-41
12	505718.682	3117852.493	739.791	ML-12 Lekhnath Substation