

**FINAL ENVIRONMENT ASSESSMENT REPORT (FEAR)
FOR
T & D NETWORK IN GOLAGHAT, JORHAT, NAGAON,
SIBSAGAR, KARBI ANGLONG, HOJAI AND WEST KARBI
ANGLONG DISTRICTS UNDER NERPSIP TRANCHE-1, ASSAM**



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Prepared for:



Power Grid Corporation of India Limited

Prepared by:



R S Envirolink Technologies Pvt. Ltd.

402, BESTECH CHAMBER,

B-BLOCK, SUSHANT LOK-I, GURGAON

Phone: +91-124-4295383: www.rstechnologies.co.in

ABBREVIATIONS

AEGCL	-	Assam Electricity Grid Corporation Limited
APDCL	-	Assam Power Distribution Company Limited
AP	-	Affected Persons
CA	-	Compensatory Afforestation
CBIS	-	Capacity Building and Institutional Strengthening
CEA	-	Central Electricity Authority
CFC	-	Chlorofluorocarbon
CPIU	-	Central Project Implementation Unit
CPR	-	Common Property Resources
CPTD	-	Compensation Plan for Temporary Damage
CRM	-	Contractor's Review Meeting
DC	-	Deputy Collector
DL	-	Distribution Line
DPR	-	Detailed Project Report
EMF	-	Electro Magnetic Field
EMP	-	Environment Management Plan
EN	-	Endangered
EPA	-	Environment Protection Act
ESMU	-	Environment and Social Management Unit
ESPPF	-	Environment and Social Policy & Procedures Framework
FEAR	-	Final Environment Assessment Report
FSI	-	Forest Survey of India
GBPP	-	Gas Based Power Project
GA	-	Geographical Area
GCC	-	General Conditions of Contract
GHG	-	Green House Gas
GIS	-	Geographical Information System
GoA	-	Government of Assam
GoI	-	Government of India
GPS	-	Global Positioning System
GRC	-	Grievance Redress Committee
GRM	-	Grievance Redressal Mechanism
GW	-	Green Wash
HEP	-	Hydro Electric Project
HFL	-	High Flood Level
HQ	-	Head Quarter
IBRD	-	International Bank for Reconstruction and Development
IA	-	Implementing Agency
ICNIRP	-	International Commission on Non-Ionizing Radiation Protection
IEAR	-	Initial Environment Assessment Report

ISFR	-	India State of Forest Report
IUCN	-	International Union for Conservation of Nature
Km	-	Kilometer
kV	-	KiloVolt
LC	-	Least Concerned
LILO	-	Loop-In Loop-Out
MDF	-	Moderately Dense Forest
MoEF&CC	-	Ministry of Environment Forest & Climate Change
MVA	-	Mega Volt Ampere
MW	-	MegaWatt
NA	-	Not Assessed
NBSS&LUP	-	National Bureau of Soil Survey & Land Use Planning
NEEPCO	-	North Eastern Electric Power Corporation Limited
NER	-	North East Region
NERPSIP	-	North Eastern Region Power System Improvement Project
NH	-	National Highway
NOC	-	No Objection Certificate
NPV	-	Net Present Value
NT	-	Near Threatened
NTFP	-	Non Timber Forest Product
OF	-	Open Forest
PCB	-	Poly Chlorinated Biphenyl
PF	-	Protected Forest
PGCIL	-	Powergrid Corporation of India Limited
PIU	-	Project Implementation Unit
PRA	-	Participatory Rural Appraisal
PWD	-	Public Works Department
RF	-	Reserved Forest
RFA	-	Recorded Forest Area
RFCTLARRA	-	Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act
ROW	-	Right of Way
RSET	-	R S Envirolink Technologies Pvt. Ltd.
S/S	-	Substation
SH	-	State Highway
SIA	-	Social Impact Assessment
SMF	-	Social Management Framework
SPCU	-	State Project Coordination Unit
Sq km	-	Square Kilometer
ST	-	Scheduled Tribes
T&D	-	Transmission and Distribution
TL	-	Transmission Line

TOF	-	Tree Outside Forest
TPS	-	Thermal Power Station
TRC	-	Terrace Rice Cultivation
USD	-	United States Dollar
VDF	-	Very Dense Forest
VU	-	Vulnerable
WB	-	World Bank
ZSI	-	Zoological Survey of India

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EXECUTIVE SUMMARY

North Eastern Region Power Supply Improvement Project (NERPSIP) is a World Bank funded project aimed at improving the impoverished power transmission and distribution system in the North Eastern states of India with Power Grid Corporation of India Ltd. (POWERGRID), the single transmission utility of the country as the implementing agency (IA). The present Final Environmental Assessment Report (FEAR) is for the transmission and distribution network in Golaghat, Jorhat, Nagaon, Sibsagar, Karbi Anglong, Hojai and West Karbi Anglong districts of Assam and has been undertaken to verify the actual locational details of the project elements, to report any impacts on the biodiversity and protected area and the project affected people, and to assess the compliance of the Initial Environmental Assessment Report (IEAR) /Environment Management Plan (EMP) prepared and submitted by the IA for the instant project. The elements of the present project include two 132 kV transmission lines of 1.214 km, construction of two new transmission sub-stations, nine 33 kV distribution lines of 120.170 km and construction of two new distribution sub-stations.

The topography of the districts is plain. Hence, transmission and distribution components of the project are in plains. About 65% of the study area comprises of agricultural land, around 15% comprises of private plantation land and the rest around 20% comprises of govt. land.

The final layout of transmission line has been carefully selected from three alternatives. The alignment has successfully avoided all ecological and social sensitive areas such as forest land, protected areas, sacred groves, community conserved areas, important bird areas, wetlands, settlements, common property resources, etc. The land use along the RoW (27 m) of lines comprises of agricultural land, private plantation land and govt. land. The original length of the line has been reduced to 1.214 km from earlier 2.0 km due changes in the locations of the substation and when optimized during ground truthing survey. Also, there is no change in the environmental footprints and impacts as envisaged in IEAR. A total of only 10 towers are erected for the proposed transmission line.

Similarly, the distribution lines too have been aligned mostly along the existing roads and by avoiding forest areas, ecological and social sensitive areas such as protected areas, sacred groves, community conserved areas, important bird areas, wetlands, settlements, common property resources, etc. Here, the RoW corridor being narrower (15 m) will further reduce the necessity of tree felling. Much of the line would only need lopping of branches for unhindered passage. The land use along the RoW of lines comprises of agricultural land, private plantation and govt. land. The original length of the line has been increased to 120.170 km from earlier 103.856 km due to change in scope, addition of scope, changes in location of substations and change in route to avoid RoW issues. Though line length has increased however, considering that distribution line has minimum environmental footprints and without any change in land use and other base line data, no additional impacts of any kind apart from earlier identified impacts in IEAR/EMP are anticipated. A total of around 3172 poles are being/to be erected for the proposed finalized distribution lines.

Sub-station locations are based on environment and social aspects and technical requirement. Various site-specific parameters that include availability of infrastructure facilities such as access roads, water, distance from railheads, type of land (Government/ revenue/private land); social impacts such as number of families getting affected; CPR including feasibility of acquisition were considered for analysis. The social aspects are provided due weightage after technical requirement in decision making for selection/finalization of land for substation. In the instant case land for all the proposed substations have been purchased on willing seller-willing buyer basis.

Impacts due to project have been analyzed for all the phases of project i.e. during design, construction and operation. Since, no involuntary acquisition was involved and fresh lands were secured only through private purchase there is no R & R and resettlement issues. Due to electricity supply, land value is expected to increase, therefore, possibility of land value depreciation is not envisaged. Final routes of lines and sites for construction of new substations don't involve any monuments of historical or cultural significance. **In case of felling of trees in non-designated forest areas AEGCL/APDCL/IA shall provide fund for compensation.** As per existing law, land for tower/pole & right of way is not acquired and ownership of land remains with the owner and agricultural activities are allowed to continue after construction activity. However, as per existing laws compensation for all damages (tree/crop) are paid to the individual land owner. Subsequent to the notification by Govt. of Assam on adoption of MoP guidelines, compensation toward damages in regard to RoW for proposed 132kV line @ 85% land value for tower base & maximum 15% land value for width of RoW corridor as decided by District Magistrate or any other authority shall be paid to land owners. Execution of the projects covered in this report has not resulted in any steep rise in traffic volume. The project does not require availing clearances from Department of Telecommunications, and the Ministry of Aviation. **However, clearances are being obtained from the Ministry of Railway as transmission and distribution lines are crossing railway tracks at few locations.** Further, the present project requires very less vehicular movement and that too restricted to construction period only. Hence, neither any interference with other utility nor steep rise in traffic volume is anticipated/ observed. The lines proposed under this scheme don't involve any tower/ pole to be placed in river bed which could interfere with existing drainage patterns. In sub-stations, all drainage channels along or inside substations are being trained and connected to main or existing drainage to avoid any erosion due to uncontrolled flow of water.

Detailed specification with respect to equipment design and substation drainage and sewage design has been included in tender document to avoid any incidence of land and water contamination. Adequate safety measures are in place to avoid any potential fire/ explosion hazard. All the soil excavated for tower/pole footings and substations construction are optimally utilized for backfilling and the remaining soil being spread evenly and compacted. Top soil disturbed during the development of sites are used to restore the surface of the platform. Infertile and rocky material are dumped at carefully selected dumping areas and used as fill for substation/ and tower/pole foundations. Hence, possibility of erosion of exposed area due to construction activity is negligible. To contain the noise level within the permissible limits, measures like providing sound and vibration dampers and rectification of equipment are undertaken. In addition, plantations of sound absorbing species like Casuarinas, Tamarind, and Neem are raised at the substations that reduce the sound level

appreciably. The proposed lines are not passing through any forest area, wildlife area. **Since there is no protected area or demarcated/ documented migration path of wildlife like elephant corridor existing near to subproject locations, hence, possibility of any disturbance to wildlife is not imminent. No bird migration/fly path found in project area.**

During construction limited quantity of excavated material is generated from tower/pole foundations. Moreover, excavated soil is backfilled and compacted immediately after erection of tower/ pole. Additionally, other preventative measures such as utilization of leg extension, construction of revetment retaining walls are in place so as to eliminate the chances of uncontrolled silt runoff. Further, excavation is avoided in rainy days. Hence, uncontrolled silt run off is not anticipated. So far there are no instances with potential of erosion during construction of above said lines. Any adverse impact arising during the construction is limited to the boundaries of proposed substation only and neither impacts nearby habitat/property nor health & safety of neighboring community. In case of substations, generally the sites are selected in such a manner that the volume of cutting is equal to volume of filling so as to avoid borrowing of the area. Issues relating to operational health and safety has been adequately addressed. The labourers are provided with safety gear and provisions for first aid and arrangement for shifting of affected persons to nearby hospitals are also in place. Compensation for injury and death has been ensured through provisions in Safety Plan & Contract condition. Proper sanitation facilities and safe drinking water are being provided in the project locations. The site managers have been advised to ensure that there are no instances of open defecation.

The COVID-19 pandemic outbreak which not only created unprecedented situation all over world but has also impacted every aspects/ activities including project implementation. Since such pandemic was totally unforeseen/ unexpected, impacts associated with such events/situations were not been specifically included in existing EMPs. However, the existing safety plan and other contract conditions particularly related to labours do have provisions to deal with such extraordinary situations.

The IA has a continuous monitoring mechanism of the project w.r.t. compliance of the mandatory requirements as stipulated in the IEAR. Thus, **the adherences to the clauses by the contractors are regularly monitored especially in respect of EMP implementation, OHS compliance. The project has thus far had zero fatality which is indicative of the strict vigil of the IA.**

The Capacity building and Institutional Strengthening program of the IA is held intermittently to enhance the skills of the project officials. Further, meetings between IA and AEGCL/APDCL are held on a monthly/ bimonthly basis to assess the work progress and difficulties encountered in respect of land acquisition, RoW and compensation if any.

Public is informed about the project at every stage of execution. Public consultation using different technique like Public Meeting, Small Group Meeting, informal meetings have been carried out during different activities of project cycle. For the Participatory Rural Appraisal (PRA), informal meetings were held with various stakeholders such as IA, contractors, labours, villagers etc. to capture their view about the project. It emerged from the survey that the

PAPs were appreciative of the project and hoped that the power scenario would improve after commissioning of the project. Local people are also getting benefited through project related employment that was being generated. However, following suggestions may be considered to further improve the safeguard measures and also enhance the environmental sustainability of project.

- During the construction phase, the implementing agency needs to ensure strict compliance of the contract provisions/EMP by Contractor especially in respect of workers health and safety.
- Along with labours, supervisors, engineers and Staff of Implementing Agency (IA) should also need to follow the health and safety precautions.
- Need of regular induction and training program for labours and engineers at all sites.
- Training for PMU staff regarding monitoring and implantation of EMP as proposed in IEAR.
- Records of labour registration, health checkup of labours and other working staff need to be maintained at all sites and strictly monitoring to avoid engagement of child labour.
- Training and awareness regarding cleanliness and solid waste disposal to maintain the hygiene in the labour camps and construction sites.
- Demarcation and protection for sites where work has been on hold due to various reasons to avoid accidents and runoff of excavated soil from construction sites
- Project staff of the implementing agency should be well versed with the contents of the IEAR so as to ensure proper compliance by the contractors.

Overall, the planning and layout of the project elements have been undertaken in a judicious manner so as to ensure minimum environmental impact. Also, commissioning of the project will augment the power distribution and availability in the region which will further catalyze economic activity and development of the area/region.

Chapter 1

INTRODUCTION & PROJECT DESCRIPTION

1.1 PROJECT BACKGROUND

India's North East Region (NER) stretches across the eastern foothills of the Himalayan mountain range and is comprised of seven states including Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, and Tripura.

Recognizing that intrastate Transmission & Distribution (T&D) systems in the NER states have remained very weak and that there is a critical need to improve the performance of these networks, the Central Electricity Authority (CEA) developed a comprehensive scheme for the NER in consultation with Power Grid Corporation of India Limited (PGCIL/ POWERGRID) and the concerned state governments. This scheme is intended to (a) augment the existing T&D infrastructure to improve the reliability of service delivery across all the NER states and (b) build institutional capacity of the power utilities and departments in the NER. This scheme is part of the Government of India's (GoI) wider efforts to develop energy resources in the NER for electricity supply within the region, to strengthen transmission networks, expand and strengthen sub-transmission systems, and extend last mile electricity connectivity to household.

GoI requested for World Bank's (WB) support in implementing a set of priority investments in six NER States. In 2016, the WB has approved a loan (IBRD 470 USD Million) to the GoI for **North Eastern Region Power System Improvement Project (NERPSIP)** which aims to create a robust intrastate transmission and distribution network in all the six (6) North Eastern States. The project being funded on 50:50 (WB loan: GoI) basis except the component of capacity building for Rs. 89 crore, which GoI will bear entirely. The scheme is to be taken up under a new Central Sector Plan Scheme of Ministry of Power (MoP).

MoP, GoI has appointed POWERGRID as Implementing Agency (IA) to six North Eastern States for the said project under Tranche-1 in close coordination with the respective State Governments/Utilities. However, the ownership of the assets shall be with the respective State Utilities/State Government which upon progressive commissioning shall be handed over to them for taking care of Operation and Maintenance of assets. POWERGRID is also facilitating in building the institutional capacity of the state departments and utilities to continue managing the rehabilitated networks in an efficient manner. The state wise scope of works proposed under Tranche-1 is given below in **Table 1.1**.

Table 1.1: State Wise Scope of Work Proposed Under Tranche-1

State	Transmission/ Sub-transmission (132 kV & above)			Distribution (33 kV)		
	Line (km)	New S/s (No.)	Total MVA (New & Aug.)	Line (km)	New S/s (No.)	Total MVA (New & Aug.)
Assam	225	11	1668	356	16	240
Manipur	223	2	139	99	13	275

State	Transmission/ Sub-transmission (132 kV & above)			Distribution (33 kV)		
	Line (km)	New S/s (No.)	Total MVA (New & Aug.)	Line (km)	New S/s (No.)	Total MVA (New & Aug.)
Meghalaya	205	4	940	174	11	150
Mizoram	116	3	100	4	1	6
Nagaland	193	5	245	76	10	200
Tripura	236	9	1389	950	34	510
Total	1198	34	4481	1659	85	1381

Source: https://cea.nic.in/wp-content/uploads/transmission/2020/09/mpr_cfs.pdf and updated based upon Monthly Progress Report of Assam PSIP, November 2021

The project has two components namely, Component A: Priority Investments for Strengthening Intrastate Transmission, Sub-transmission, and Distribution Systems, and Component B: Technical Assistance for Capacity Building and Institutional Strengthening (CBIS) of Power Utilities and Departments of Participating States. The total project cost is **Rs. 5111.33 Crore** with financing from both Gol and Bank on 50:50 basis. The Bank is providing financial support to the tune of US\$ 470 million (**Rs. 2511.165 Crore**) under the Loan No.-8631-IN which was signed on 28th November, 2016 and became effective from 20th February, 2017. The loan closing date is 31st March, 2023. The remaining financing including capacity building will be met through Gol funding. Details of State wise funding is placed below in **Table 1.2.**

Table 1.2: Details of State Wise Funding

State	World Bank	Government of India		Total (Rs. in Cr.)
	Project Cost (Rs. in Cr.)	Project Cost (Rs. in Cr.)	Capacity Building (Rs. in Cr.)	
Assam	729.485	729.485	14.83	1473.803
Manipur	213.690	213.690	14.83	442.213
Meghalaya	381.050	381.050	14.83	776.933
Mizoram	150.965	150.965	14.83	316.763
Nagaland	357.290	357.290	14.83	729.413
Tripura	678.685	678.685	14.83	1372.203
Total	2511.165	2511.165	89.00	5111.33

Source: https://www.powergridindia.com/sites/default/files/Our_Business/Domestic_Consultancy/NER_Agreements_and_MoUs/sanctions/NERPSIP%20SANCTION%20ORDER.pdf

1.2 PROJECT JUSTIFICATION

The State of Assam is endowed with rich energy resources but faces significant bottlenecks in electricity access and availability levels. The present per capita energy consumption is of the order of 205 units (kWh) against the regional per capita consumption of about 258 units and national per capita consumption of about 779 units. The State meets its power requirement through about 460 MW of self-generation and about 600MW of power allocation from various central sector generation projects of NHPC and NEEPCO. The present demand (met) is of the order of 1150 MW whereas the un-restricted demand is about 1300 MW. As most of the generation projects in the north eastern region are hydro in nature, the State faces acute shortage of power during low-hydro generation condition.

Presently, the State draws its share of power from central sector generating stations through various intra-state lines connected to the following substations of inter-state transmission system:

- Misa 400/220 kV substation (2x315 MVA)
- Balipara 400/220 kV substation (315 MVA)
- Bongaigaon 400/220 substation (315 MVA)
- Silchar 400/132 substation (2x200 MVA)
- Salakati 220/132 kV substation (2x50 MVA)
- Haflong 132/33 kV substation (2x5 MVA)
- Badarpur Switching Station

Besides this, the State draws power from 220/132 kV Mariani substation of AEGCL, wherein the one circuit of Kathalguri-Misa 400 kV D/C line (operated at 220 kV level) has been looped-in and looped-out and from 132 kV Gohpur substation of AEGCL which is connected to 132 kV Itanagar (Nirjuli) substation of POWERGRID. Another 220 kV substation namely New Mariani has recently been commissioned in the State by POWERGRID. AEGCL is also constructing a 2x315 MVA, 400/220 kV substation at Azara by looping in and looping out Silchar-Bongaigaon 400 kV D/C line (one ckt via Byrnihat). This will further enhance the interconnection of transmission system of Assam with the inter-state transmission network.

As per the 18th Electric Power Survey of CEA, the future demand of the State is expected to grow to about 1817 MW by year 2016-17 and 2534 MW by year 2021-22. This shall be met through various hydro and thermal projects coming up in the north-eastern region in near future, which are as follows:

- Pallatana GBPP : 726 MW
- Bongaigaon TPS : 750 MW
- Kameng HEP : 600 MW
- Lower Subansiri HEP : 2000 MW

The State has a share of about 894 MW from these future generation schemes. With this, the total share of the State from central sector generating stations shall be about 1500 MW.

Besides this, the present Intra-State transmission system of the State is quite old & weak and is unable to cater to the growing power requirements of the State. Although the present transmission and distribution (T&D) system covers many areas of the State, it is inadequate in its reach and due to non-availability of redundant T&D system, outage of any transmission system element results in long term power shortages making the system highly unreliable. Besides, some of the network elements have undergone long term outage due to breakdown. Therefore, it has become essential to address the above situation through remedial measures in the T&D system. Accordingly, phase wise strengthening of transmission & sub-transmission system has been proposed.

The transmission schemes proposed under Tranche-1 of Assam State include construction of 224.525 km of 132 kV Transmission Lines (TL) & associated 11 new substations and 355.592 km of 33 kV Distribution Lines (DL) & associated 9 new substations along with augmentation & strengthening of transmission and distribution spread across the State.

The Power Map of Assam indicating the existing and proposed T&D network is placed in **Figure 1.1**. Summary of subprojects to be implemented in the State in Tranche-1 under NERPSIP along with capacity addition and cost is shown in **Table 1.3** below.

Table 1.3: Summary of Subprojects in Tranche- I Under NERPSIP

S. No.	Name of the subproject	Quantity (Nos.)	Capacity Addition (km/MVA)	Estimated Cost (Rs. in Cr.)
1	132 kV Transmission lines	13	224.525 km	1473.803
2	132/33kV substations (New/Augmentation)	20	940 MVA	
3	33 kV Distribution lines	17	174.249 km	
4	33/11kV substations (New/Extension/ Augmentation)	41	150 MVA	

Source: Monthly Progress Report of Assam PSIP, January 2022

1.3 PROJECT BENEFIT

The proposed transmission and distribution schemes will not only improve overall power supply situation but will also improve reliability, quality, security and enhancement of power supply in the North Eastern Region.

1.4 PROJECT SCOPE & PRESENT STUDY

In line with Assam Electricity Grid Corporation Limited's (AEGCL)/ Assam Power Distribution Company Limited's (APDCL), Electricity Department, Government of Assam (GoA), Environment and Social Policy & Procedures Framework (ESPPF), POWERGRID carried out comprehensive environment and social assessment of each subprojects and prepared Initial Environment Assessment Report (IEAR). These reports were subsequently disclosed for public information both on the State Utility, POWERGRID and Bank website after obtaining clearance from The World Bank.

As mandated in the ESPPF, a Final Environment Assessment Report (FEAR) for each subproject need to be prepared with an objective to assess the compliance of mitigation measures identified in IEAR including implementation of EMP provisions by IA/ Contractor. However, as per Project Agreement signed between POWERGRID and Bank such study is required to be undertaken by Independent Agencies as per Term of Reference agreed with Bank. As a part of this development, POWERGRID appointed **R S Envirolink Technologies Pvt. Ltd. (RSET)** as Independent consultant vide Letter of Award (LOA) Ref No.: **NEGW/C&M/2021-22/NERPSIP/900-23/FEAR/LOA-96** dated **11/11/2021** to carry out FEAR study.

The present FEAR is a document developed as a consultancy assignment to validate the work undertaken and to critically examine any deviation, if any with respect to management measures as outlined in the IEAR which is based on AEGCL/APDCL's ESPPF, World Bank's Operational Policies and Bank's Environmental, Health, and Safety Guidelines for Electric Power Transmission and Distribution.

The scope of the present study includes 132 kV transmission line and associated 132/33 kV substations, 33 kV distribution lines and associated 33/11 kV substations which are being implemented in Golaghat, Jorhat, Nagaon, Sibsagar, Karbi Anglong, Hojai and West Karbi Anglong Districts of Assam. Detail of T&D network are given below and shown in **Figure 1.2** and **Figure 1.3**.

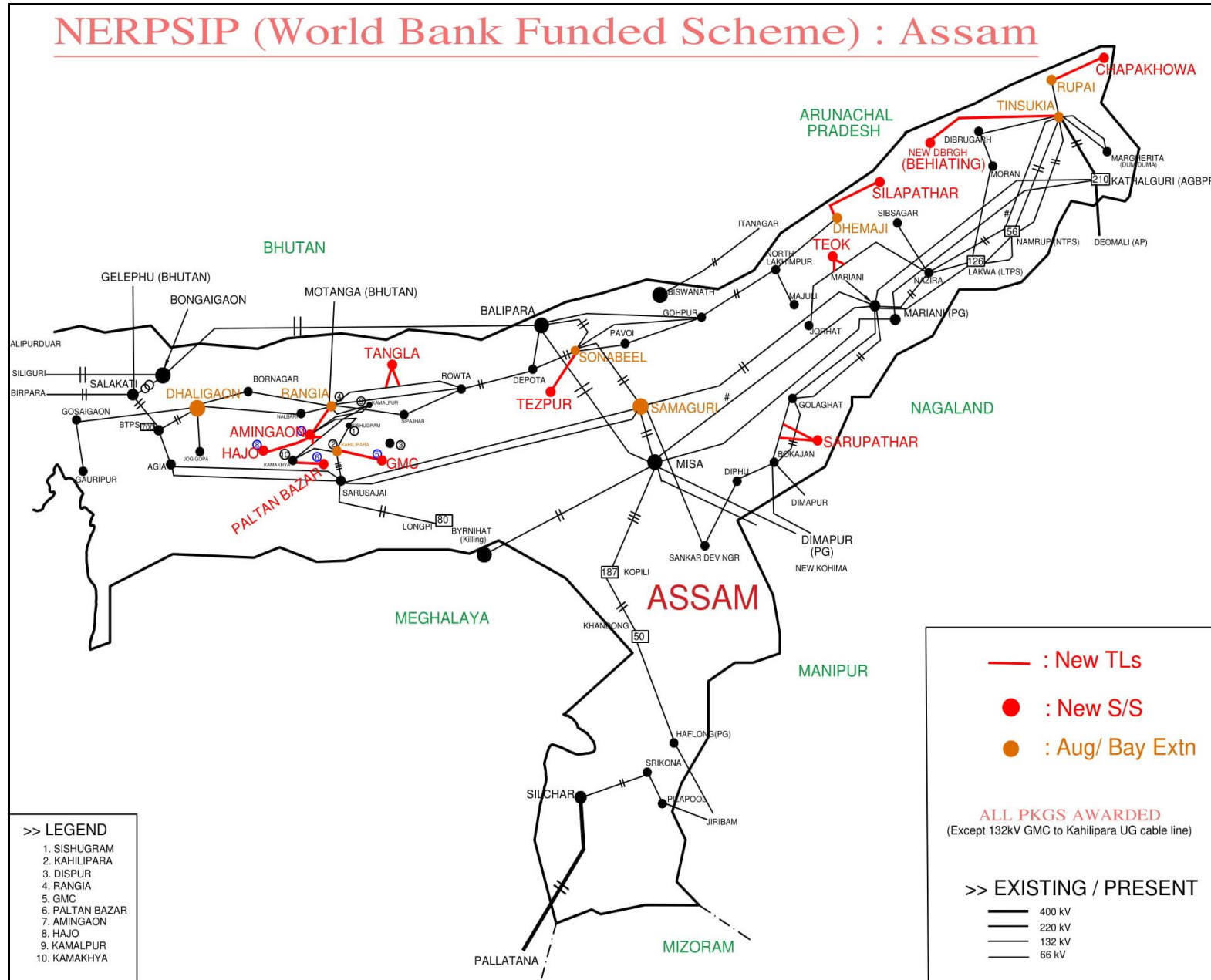


Figure 1.1: Power Map of Assam

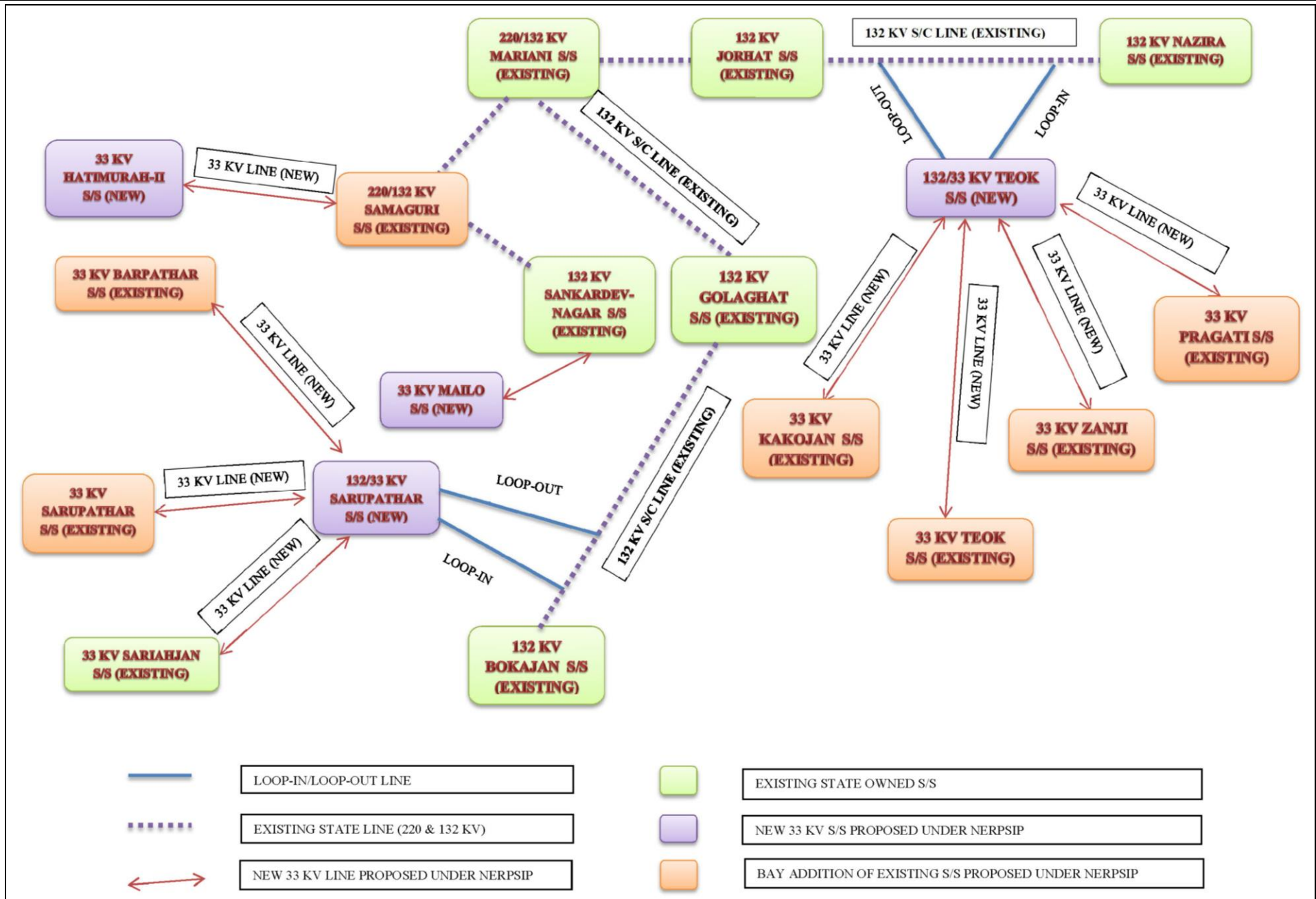


Figure 1.2: Proposed T&D Network in Golaghat, Jorhat, Nagaon, Sibsagar, Karbi Anglong, Hojai and West Karbi Anglong Districts under NERPSIP

1.4.1 Transmission Components

The present study includes two LILO lines and associated four 132/33 kV substations being implemented in Golaghat, Jorhat, Nagaon, Sibsagar, Karbi Anglong, Hojai and West Karbi Anglong Districts of Assam. Details of Transmission network are given below in **Table 1.4**.

Table 1.4: Details of Transmission Network

S. No.	Name of the Line	Name of New/ Existing Sub-station
1	LILO of Golaghat – Bokajan 132 kV S/C line at Sarupathar – 0.270 km	Establishment of 2x25 MVA, 132/33 kV new substation at Sarupathar
2	LILO of Jorhat (Gormur) – Nazira 132 kV S/S on D/C at Teok – 0.944 km	Establishment of 2x31.5 MVA, 132/33 kV new substation at Teok
3		Augmentation of 220/132 kV Samaguri substation by replacing existing 2x50 MVA by 2x160 MVA Transformer
4		Augmentation of 132/33 kV Samaguri substation by replacing existing 1x16 MVA by 1x40 MVA Transformer

1.4.2 Distribution Components

The present study includes nine 33 kV distribution lines and associated eight 33 kV substations being implemented in Golaghat, Jorhat, Nagaon, Sibsagar, Karbi Anglong, Hojai and West Karbi Anglong Districts of Assam. Details of Distribution network are given below in **Table 1.5**.

Table 1.5: Details of Distribution Network

S. No.	Name of the Line	Name of New/ Existing Sub-station
1	33 kV line from 132/33 kV Shankardeo Nagar (existing) S/S to 33/11 kV Mailu (new) S/S – 20.572 km	Establishment of 2x5 MVA, 33/11 kV new substation at Mailu
2	33 kV line from 132/33 kV Samaguri (existing) S/S to 33/11 kV Hatimurah-II (new) S/S – 19.19 km	Establishment of 2x5 MVA, 33/11 kV new substation at Hatimurah-II
3	33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Teok (existing) S/S – 5.35 km	Strengthening of 33/11 kV Teok (existing) substation with 1 no. bay addition
4	33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Kakojaan (existing) S/S – 20.53 km	Strengthening of 33/11 kV Kakojaan (existing) substation with 1 no. bay addition
5	33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Zangi (existing) S/S – 6.281 km	Strengthening of 33/11 kV Zangi (existing) substation with 1 no. bay addition
6	33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Amguri (existing) S/S – 8.2 km	Strengthening of 33/11 kV Amguri (existing) substation with 1 no. bay addition
7	33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Barapathar (existing) S/S – 10.835 km	Strengthening of 33/11 kV Barapathar (existing) substation with 1 no. bay addition
8	33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Sarupathar (existing) S/S – 5.763 km	
9	33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Sariahjan (existing) S/S – 23.449 km	Strengthening of 33/11 kV Sariahjan (existing) substation with 1 no. bay addition

1.5 OVERALL PROJECT PROGRESS

A brief status on project implementation progress of various transmission & distribution components till January, 2022 is given below in **Table 1.6**.

Table 1.6: Brief Status on Project Implementation Progress

S. No.	Name of the T & D Components	Progress as on November, 2021
A	Transmission and Distribution Line	
1	LILO of Golaghat – Bokajan 132 kV S/C line at Sarupathar – 0.270 km	<ul style="list-style-type: none"> ➤ Route survey completed ➤ Tree enumeration yet to start ➤ Tower foundation and erection completed ➤ Stringing work yet to start
2	LILO of Jorhat (Gormur) – Nazira 132 kV S/S on D/C at Teok – 0.944 km	➤ Commissioned on 07/06/2021
3	33 kV line from 132/33 kV Shankardeo Nagar (existing) S/S to 33/11 kV Mailu (new) S/S – 20.572 km	➤ Completed on 30/06/2021
4	33 kV line from 132/33 kV Samaguri (existing) S/S to 33/11 kV Hatimurah-II (new) S/S – 19.19 km	➤ Commissioned on 09/07/2020
5	33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Teok (existing) S/S – 5.35 km	➤ Commissioned on 31/12/2020
6	33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Kakojaan (existing) S/S – 20.53 km	<ul style="list-style-type: none"> ➤ Route alignment survey completed and approved ➤ Pole erection work under progress ➤ Stringing work under progress
7	33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Zangi (existing) S/S – 6.281 km	➤ Completed on 28/02/2021
8	33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Amguri (existing) S/S – 8.2 km	<ul style="list-style-type: none"> ➤ Route alignment survey completed and approved ➤ Pole erection work under progress ➤ Stringing work under progress
9	33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Barapathar (existing) S/S – 10.835 km	<ul style="list-style-type: none"> ➤ Route alignment survey completed and approved ➤ Pole erection work under progress ➤ Stringing work under progress
10	33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Sarupathar (existing) S/S – 5.763 km	<ul style="list-style-type: none"> ➤ All the works are completed ➤ Testing and commissioning is pending
11	33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Sariahjan (existing) S/S – 23.449 km	<ul style="list-style-type: none"> ➤ Route alignment survey completed and approved ➤ Pole erection work under progress ➤ Stringing work under progress
B	Transmission and Distribution Sub-stations	
1	Establishment of 2x25 MVA, 132/33 kV new substation at Sarupathar	<ul style="list-style-type: none"> ➤ 80% of the site levelled ➤ Boundary wall constructed ➤ 80% of the control room/ GIS building constructed ➤ 80% work of the FF pump house completed ➤ Transfer, tower and equipment foundation work completed ➤ Cable trench work almost completed ➤ Tower, beam, equipment, transformer erection

S. No.	Name of the T & D Components	Progress as on November, 2021
		work completed ➤ Rest all work such as transit camp building, approach road, drain etc. are yet to start
2	Establishment of 2x31.5 MVA, 132/33 kV new substation at Teok	➤ Completed in February 2021 ➤ Test charged in June 2021
3	Augmentation of 220/132 kV Samaguri substation by replacing existing 2x50 MVA by 2x160 MVA Transformer	➤ Commissioned on 12/06/2020
4	Augmentation of 132/33 kV Samaguri substation by replacing existing 1x16 MVA by 1x40 MVA Transformer	➤ Commissioned on 12/06/2020
5	Establishment of 2x5 MVA, 33/11 kV new substation at Mailu	➤ Test charged on 27/02/2021
6	Establishment of 2x5 MVA, 33/11 kV new substation at Hatimurah-II	➤ Test charged on 31/10/2019
7	Strengthening of 33/11 kV Teok (existing) substation with 1 no. bay addition	➤ Commissioned on 27/09/2021
8	Strengthening of 33/11 kV Kakojaan (existing) substation with 1 no. bay addition	➤ Commissioned on 31/08/2020
9	Strengthening of 33/11 kV Zangi (existing) substation with 1 no. bay addition	➤ Commissioned on 19/12/2019
10	Strengthening of 33/11 kV Amguri (existing) substation with 1 no. bay addition	➤ Commissioned on 04/01/2021
11	Strengthening of 33/11 kV Barapathar (existing) substation with 1 no. bay addition	➤ Commissioned on 28/06/2019
12	Strengthening of 33/11 kV Sariahjan (existing) substation with 1 no. bay addition	➤ Commissioned on 30/10/2020

1.6 OBJECTIVE & METHODOLOGY ADOPTED FOR FEAR STUDY

The main objectives of the FEAR study are to assess the mitigative measures as suggested in IEAR and/or EMP are effectively implemented/ addressed at the ground during pre-construction & construction stages of project cycles. The study also helps in establishing the status of compliance of various mitigation/management measures provided in the IEAR/EMP and suggests gaps or weaknesses, if any.

To achieve this, RSET undertook a comprehensive biophysical, environmental, socioeconomic data gathering exercise along the transmission/ distribution line routes and substations location to assess/verify the actual site-specific measures implemented/ being implemented by IA/ Contractor in respect of measure/ actions listed in IEAR/EMP. The methodologies adopted for instant FEAR are as follows:

Defining Study Area: Environmental impacts of Transmission & Distribution (T&D) projects are not far reaching and are mostly localized to RoW (refer **Table 1.7**). However, T & D projects have some effects on natural and socio-culture resources. Study area has been defined as RoW of transmission line i.e. 27 m corridor for 132 KV transmission line and 15 m corridor for 33 KV distribution line. Also, area in immediate vicinity of substations has been included in the study area.

Table 1.7: RoW Width

Transmission Voltage	Max. RoW (m)
132 kV	27
33 kV	15

Review of existing reports: Review of existing reports and data prepared and generated by POWERGRID such as Initial Environment Assessment Report (IEAR), Environment and Social Policy & Procedures Framework (ESPPF), Compensatory Plan for Temporary Damage (CPTD) etc. was undertaken and suitably incorporated in the present report.

Literature review: Review of existing literature was undertaken for collection of secondary baseline data related to physiography, climatic conditions, demography, natural resources including forests/wildlife, protected area and socio-economic features of the study area. Sources and data so collected have been mentioned below:

- 'A Revised Survey of the Forest Types of India' by Champion and Seth (1968) was used for forest type classification of forests in the study area.
- Data collected from published literature of Zoological Survey of India, Forest Survey of India, Botanical Survey of India, Website of Directorate of Environment, Govt. of Assam and other research and government publications for floral and faunal diversity of the study area.
- Conservation status of flora and fauna of the study area as per Indian Wildlife (Protection) Act (1972), threatened status according to IUCN Red List 2020.1, Red Data Book of Indian Plants by Botanical Survey of India, Kolkata.
- Census of India 2011 for demography of the study area.

Collection of primary data and Physical verification of construction elements: To gather primary data/ physical verification, a field visit/ survey of the project area along with IA and Contractor staff was made in February 2022. The data which has been collected from field visit are implementation status of proposed environmental management plan and mitigation measures as suggested in IEAR.

Ground truthing/ physical verification was made with photographic evidence and verification of record maintained by IA and Contracts for various activities for monitoring the compliance of mitigation measures like Health and Safety measures, Solid waste and sanitation, construction of protection wall/ retaining walls, status of labour camps location of proposed substations, towers, and Transmission & Distribution Lines alignments. Findings of field survey were consolidated along with secondary data for interpretation and finding the gaps for immediate necessary action.

Surveys for flora and fauna: Being a transmission line project, ecological surveys for assessment of vegetation structure/ profile in the proximity of the proposed transmission lines, corridors of transmission line routes, sub-stations, etc. were conducted wherein line transect methodology has been followed.

The terrestrial ecological surveys were undertaken to prepare a comprehensive checklist of flora (angiosperm, gymnosperm, pteridophyte, and bryophytes) and fauna (mammals, birds, herpetofauna and butterflies) of the study area. The study area was divided into different strata based on topography and vegetation pattern covering different land use/ land cover categories like scrubland near agricultural fields, forest, fallow/abandoned land, and vegetation growing along the project components (RoW of transmission line, near towers and sub-stations).

As the topography along the routes varied from foothills to top of the hills. In the valley region, most of the transmission line route passes through the bunds of paddy fields. The coverage of the study area was hampered by inaccessibility of certain areas due to inhospitable terrain. It was therefore, not feasible to chart the entire routes of proposed/completed transmission line as large part of the routes has steep slopes and due to issues of accessibility at present. However, during the field surveys at least 10% of the route was covered for the collection of baseline data, which in some cases constituted a continuous stretch and, in some cases, could be covered in parts.

A series of transects were identified along the routes of transmission line covering the corridors between the ROW of transmission line and substations. Area covered under different sub-components (ROW of transmission line) of project is given below in **Table 1.8**. Faunal surveys also were conducted along the same transects.

Table 1.8: Transmission Lines and Transects Locations for sampling

S. No.	Name of Transmission Line	Status of Project	Distance Covered
1	LILO of Golaghat – Bokajan 132 kV S/C line at Sarupathar – 0.270 km	<ul style="list-style-type: none"> ➤ Route survey completed ➤ Tree enumeration yet to start ➤ Tower foundation and erection completed ➤ Stringing work yet to start 	Entire route
2	LILO of Jorhat (Gormur) – Nazira 132 kV S/S on D/C at Teok – 0.944 km	<ul style="list-style-type: none"> ➤ Commissioned on 07/06/2021 	Entire route
3	33 kV line from 132/33 kV Shankardeo Nagar (existing) S/S to 33/11 kV Mailu (new) S/S – 20.572 km	<ul style="list-style-type: none"> ➤ Completed on 30/06/2021 	AP-4 to Loc-6/10 = 1.4 km AP-25 to Loc-28/1 = 1.1 km Loc-38/40 to AP-42/7 = 1.7 km Total Distance Covered = 4.2 km
4	33 kV line from 132/33 kV Samaguri (existing) S/S to 33/11 kV Hatimurah-II (new) S/S – 19.19 km	<ul style="list-style-type: none"> ➤ Commissioned on 09/07/2020 	AP-44 to AP-52 = 3.2 km
5	33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Teok (existing) S/S – 5.35 km	<ul style="list-style-type: none"> ➤ Commissioned on 31/12/2020 	Gantry to DP-2 = 0.1 km DP-35 to DP-47 = 0.5 km DP-107 to FP-5 = 0.5 km Total Distance Covered = 1.1 km
6	33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Kakojaan (existing) S/S	<ul style="list-style-type: none"> ➤ Route alignment survey completed and approved ➤ Pole erection work under 	<ul style="list-style-type: none"> • Gantry to FP-2 = 0.2 km • DP-3 to FP-3 = 0.7 km • DP-10 to SP-143 = 0.7 km

S. No.	Name of Transmission Line	Status of Project	Distance Covered
	– 20.53 km	<ul style="list-style-type: none"> ➤ progress ➤ Stringing work under progress 	<ul style="list-style-type: none"> • SP-241 to DP-37 = 1.6 km • DP-73 to DP-85 = 0.5 km • DP-145 to FP-15 = 0.5 km <p>Total Distance Covered = 4.2 km</p>
7	33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Zangi (existing) S/S – 6.281 km	<ul style="list-style-type: none"> ➤ Completed on 28/02/2021 	<ul style="list-style-type: none"> • Gantry to SP-7 = 0.4 km • SP-35 to SP-58 = 1.1 km • DP-10 to SP-88 = 0.5 km • SP-107 to Gantry = 0.5 km <p>Total Distance Covered = 2.5 km</p>
8	33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Amguri (existing) S/S – 8.2 km	<ul style="list-style-type: none"> ➤ Route alignment survey completed and approved ➤ Pole erection work under progress ➤ Stringing work under progress 	<ul style="list-style-type: none"> • Gantry to SP-7 = 0.4 km • SP-74 to SP-94 = 1.1 km • SP-117 to DP-22 = 0.1 km • SP-130 to DP-29 = 0.2 km <p>Total Distance Covered = 1.8 km</p>
9	33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Barapathar (existing) S/S – 10.835 km	<ul style="list-style-type: none"> ➤ Route alignment survey completed and approved ➤ Pole erection work under progress ➤ Stringing work under progress 	<ul style="list-style-type: none"> • Gantry to FP-1 = 8 km • SP-157 to FP-2 = 1 km • FP-4 to DP-39 = 0.15 km <p>Total Distance Covered = 9.15 km</p>
10	33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Sarupathar (existing) S/S – 5.763 km	<ul style="list-style-type: none"> ➤ All the works are completed ➤ Testing and commissioning is pending 	<ul style="list-style-type: none"> • Gantry to DP-2 = 2.3 km • FP-6 to Gantry = 0.2 km <p>Total Distance Covered = 2.5 km</p>
11	33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Sariahjan (existing) S/S – 23.449 km	<ul style="list-style-type: none"> ➤ Route alignment survey completed and approved ➤ Pole erection work under progress ➤ Stringing work under progress 	<ul style="list-style-type: none"> • Gantry to SP-5 = 0.4 km • SP-300 to Gantry = 8.2 km <p>Total Distance Covered = 8.6 km</p>

The results of the primary field surveys were supplemented with secondary data to fill the gaps and further with the information generated through PRA. In addition, at all the sites bird walks were also undertaken, particularly areas under private plantations nearby the routes to locate nesting sites and for bird sightings.

Consultation: Consultation was carried out with stakeholders like POWERGRID officials, Contractor, migratory labours, local labours, etc. to collect data with respect to compliance of suggested Environmental Management Plan and implementation of mitigation measures.

Development of Maps: Geo-referenced and Google maps with superimposed coordinates of project elements were generated to verify locational details and details of physical features of terrain of the project locations.

Chapter
2

POLICY, LEGAL AND REGULATORY FRAMEWORK

2.1 INTRODUCTION

Power transmission and distribution project activities by their inherent nature and flexibility have negligible impacts on environmental and social attributes. Indian laws relating to environmental and social issues have strengthened in the last decade both due to local needs and international commitments. AEGCL/APDCL, IA and contractors are undertaking its activities within the purview of Indian and State specific laws keeping in mind appropriate international obligations and directives and guidelines with respect to environmental and social considerations of World Bank's Operational Policies.

2.2 CONSTITUTIONAL PROVISIONS

Subsequent to the first United Nations Conference on Human Environment at Stockholm in June, 1972, which emphasized the need to preserve and protect the natural environment, the Constitution of India was amended through the historical 42nd Amendment Act, 1976 by inserting Article 48-A and 51-A (g) for protection and promotion of the environment under the Directive Principles of State Policy and the Fundamental Duties respectively. The amendment, *inter alia* provides:

"The State shall endeavor to protect and improve the environment and to safeguard the forests and wildlife of the country". (New Article 48A)

"It shall be the duty of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures". [New Article 51 A(g)]

Article 21 of the constitution provides, "no person shall be deprived of his life or personal liberty except according to procedure established by law".

Article 21 is the heart of the fundamental rights and has received expanded meaning from time to time after the decision of the Supreme Court in 1978. The Article 21 guarantees fundamental right to life – a life of dignity to be lived in a proper environment, free of danger or disease or infection. Recently, Supreme Court has broadly and liberally interpreted the Article 21, transgressing into the area of protection of environment, and held that the citizen's right to live in an eco-friendly atmosphere is to be interpreted as the basic right guaranteed under Article 21.

Thus, the Indian Constitution now has a two folds provision:

- (a) On the one hand, it gives directive to the State for the protection and improvement of environment.
- (b) On the other hand, the citizens owe a constitutional duty to protect and improve the natural environment.

Sixth Schedule, In Assam, special provisions also have been extended to the Tribal Areas under the 6th Schedule [Articles 244(2) and 244(A) of the constitution] in addition to basic fundamental rights. The Sixth Schedule provides for administration of tribal areas as autonomous entities. The administration of an autonomous district is vested in a District Council and of an autonomous region, in a Regional Council. These Councils are endowed with legislative, judicial, executive and financial powers. These institutions were expected to integrate these areas with the modern system of administration while preserving the traditional autonomy and local self-governing institutes of the tribal people. The three Autonomous District Council (ADC) viz. Bodoland Territorial Council, Karbi Anglong Autonomous Council, Dima Hasao Autonomous District Council in sixth schedule areas enjoy these privileges. Details of ADC in Assam are as follows

S. No.	Autonomous District Council	Revenue District
1	Bodoland Territorial Council	Baksha, Kokrajhar, Chirang and Udalguri
2	Karbi Anglong	Karbi Anglong
3	Dima Hasao	Dima Hasao

2.3 ENVIRONMENTAL PROVISIONS

Environmental issues of T&D projects are manageable given the inherently small 'foot print' of towers and flexibility in siting facilities within a relatively large host area and are mostly localized to RoW. However, transmission line project may have some adverse effects on natural resources. These impacts can be minimized by careful route selection and siting of substations. The applicable acts, rules, and relevant policies in the context of the project and its status of compliance are presented in **Table 2.1**.

2.4 SOCIAL PROVISIONS

The applicable acts, rules, and relevant policies in the context of the project and its status of compliance are presented in **Table 2.2**.

2.5 WORLD BANK OPERATIONAL POLICY

When World Bank provide governments with financing to invest in projects such as building a road, connecting people to electricity, or treating waste water, World Bank we aim to ensure that the people and the environment are protected from potential adverse impacts. World Bank do this through policies that identify, avoid, and minimize harm to people and the environment. These policies require the borrowing governments to address certain environmental and social risks in order to receive World Bank support for investment projects. The mandatory environment and social requirements with respect to World Bank Operational Policies are presented in **Table 2.3**.

Table 2.1: Environmental Provisions

S. No.	Acts, Notifications and Policies	Relevance	Applicability to the project	Status of Compliance
1.	Electricity Act, 2003	To consolidate the laws relating to generation, transmission, distribution, trading and use of electricity. Under the provisions of Section 68(1):- Prior approval of the GoA is a mandatory requirement to undertake any new transmission and distribution project in the State.	Applicable - Transmission line projects are constructed under the ambit of Electricity Act, 2003 following the provisions of Section 68 (1) of act.	Complied with: MoP, Gol approved the NERPSIP comprehensive scheme for six North Eastern States including Assam under vide its Office Memorandum dated 1 st December 2014.
2.	Forest (Conservation) Act, 1980	To protect and conserve Forest Areas and Tree Cover. Any transmission/ distribution line traverses forest land, prior clearance is mandatorily required from Ministry of Environment, Forest & Climate Change (MoEF&CC), Gol under the Forest (Conservation) Act, 1980.	Not Applicable - No notified forest area is involved in any of the line routes or substations location.	Not Required
3.	Environment (Protection) Act, 1986	To protect and improve the overall environment. It is umbrella legislation for the protection and improvement of environment.	Applicable – Though some limited compliance measures notified under this EPA, 1986 are to be adhered to relevant rules and regulations under the EPA, 1986 applicable to the operations of AEGCL/APDCL.	Complied with: Though applicable as it is umbrella legislation, however, as such statutory permission/ license is not required.
i)	Ozone Depleting Substances (Regulation and Control) Rules, 2000	Regulate and control manufacturing, import, export and use of Ozone Depleting Substances under Montreal Protocol adopted on 16 th September 1987	Applicable - As per the notification, certain control and regulation has been imposed on manufacturing, import, export, and use of these compounds.	Complied with: Only CFC free equipments are being procured/ specified in tender document
ii)	Batteries (Management and Handling) Rules, 2001	Provides certain restriction on disposal of used batteries and its handling and to file half yearly return in prescribed form to the concerned State Pollution Control Board.	Applicable during operation phase only – Used batteries to be disposed to dealers, manufacturer, registered recycler, reconditioners or at the designated collection centers only. A half-yearly return to be filed as per Form-8 to the Assam State Pollution Control Board	Batteries are used during operation phase. Hence, the issue of proper handling and disposal of batteries as per rules not an issue during construction stage.
iii)	Hazardous Wastes (Management,	To ensure that the hazardous wastes are managed in a manner which shall protect the health and the	Applicable – Requires proper handling, storage and disposed only to authorized disposal facility	Generally Used oil is generated after 10-15

S. No.	Acts, Notifications and Policies	Relevance	Applicability to the project	Status of Compliance
	Handling and Transboundary Movement) Rules, 2008	environment against the adverse effects that may result from such waste. The used transformer oil has been declared as a hazardous waste vide this notification.	(registered recyclers/ reprocessors). In case it is decided to outsource the process of recycle of used oil to registered recycler as per the provisions of notification then AEGCL/APDCL shall submit the desired return in prescribed form to concerned State Pollution Control Board at the time of disposal of used oil.	years of operation of transformers and hence the issues of handling and disposals of hazardous transformer oil is not an issue at this stage.
iv)	E-waste (Management and Handling) Rules, 2011	To ensure that e-waste is managed in a manner which shall protect health and the environment against the adverse effects that may result from hazardous substance contained in such wastes. It is the responsibility of the bulk consumer to ensure that e-waste generated is channelized to authorized collection centre(s) or registered dismantler(s) or recycler(s) or is returned to the pick-up of take back services provided by the producer.	Applicable – To dispose e-waste generated in environmentally sound manner by channelizing to authorized collection centres/ registered dismantler/ recyclers/ return to producers. AEGCL/APDCL, being a bulk consumer of electrical and electronics equipment's shall maintain record as per Form-2 for scrutiny by State Pollution Control Board.	E-waste disposal is not an issue during construction phase.
4.	The Biological Diversity Act, 2002	To provide for conservation of biological diversity, sustainable use of its components and fair and equitable sharing of the benefits arising out of the use of biological resources, knowledge and for matters connected therewith. All restrictions applicable to protected areas like National Park & Sanctuaries are also applicable to these reserves.	Not Applicable - The present project does not involve any biosphere reserves.	Not Required
5.	Ancient Monuments & Archaeological Sites and Remains Act, 1958	To prevent damage to archaeological sites and its maintenance. It also places restriction on activities which can cause harm to the monument /property. The law is however applicable only in monuments identified by the Archaeological Survey of India.	Not Applicable - All such areas have been completely avoided.	Not Required
6.	The Scheduled Tribes & Other Traditional Forest Dwellers (Recognition of Forest	This act recognizes and vests the forest rights and occupation in forest land to forest dwelling Scheduled Tribes and other traditional forest dwellers who have been residing in such forests for generations but whose	Not Applicable – For linear projects including transmission lines, obtaining NoC from the Gram sabha (Village Council) has been exempted for the requirement of FRA compliance as per	Not Required

S. No.	Acts, Notifications and Policies	Relevance	Applicability to the project	Status of Compliance
	Rights) Act, 2006	rights could not be recognized.	MoEF&CC circular dated 5 th February 2013 & 15 th January 2014.	
7.	Assam control of Tree Felling Rules, 2002	These rules prescribe how tree plantations raised in non recorded forest areas by individuals or institutions are to be governed. They specify which plantations need to be registered, which tree species do not require felling permission, what process is to be followed in order to fell trees outside non recorded forest areas, how is the transit of timber originating from non recorded forest areas regulated and how and why timber can be confiscated to the Government.	Not Applicable – Since all the cable are laid/ being laid underground through felling of trees is not required.	Not Required

Table 2.2: Social Provisions

S. No.	Acts, Notifications and Policies	Relevance	Applicability to the project	Status of Compliance
1.	The Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act, 2013	Act ensures appropriate identification of the affected families/ households, fair compensation and rehabilitation of titleholders and non-titleholders. The Act authorizes State Govt. (i.e. GoA) or its authorized Government agency to complete the whole process of acquisition of private land including Social Impact Assessment (SIA), Action Plan for R&R (i.e. Rehabilitation and Resettlement) & its implementation and the AEGCL/APDCL responsibility is limited to identification and selection of suitable land based on technical requirement and ensuring budget allocation.	Not Applicable – Land has been purchased on willing buyer and willing seller basis.	Not Required
2.	Sixth Schedule of the Constitution	The Sixth Schedule provides for administration of tribal areas as autonomous entities. The administration of an autonomous district is vested in a District Council and of an autonomous region, in a Regional Council. These Councils are endowed with legislative, judicial, executive and financial powers.	Applicable - Since the project is being implemented in the jurisdiction of Karbi Anglong, therefore, consent of ADC is required.	Complied with: NoC from Village Headman/ Land owner obtained by IA.
3.	Rights of Way (RoW) and Compensation	The Electricity Act, 2003 has a provision for notifying transmission company under section 164 (B) to avail benefits of eminent domain provided under the Indian Telegraph Act, 1885.	Applicable – AEGCL/APDCL may seek for GoA authorization to exercise all the powers that the Telegraph authority possesses and can spot, construct and erect towers without acquiring the land. Moreover, all damages due to its activity shall be compensated at market rate. In case of agricultural or private land the provisions of section- 67 and or section-68 (5 & 6) of the Electricity Act, 2003 and section-10 of the Indian Telegraph Act, 1885 are followed for assessment and payment of compensation towards such damages.	Complied with: Implementing Agency has already been vested with powers of telegraph authority by GoI vide Gazette Notification dated Dec.24, 2003. However, compensation for all damages are being paid to the individual land owner as per the provision of Section-10 (d) of Indian Telegraph Act, 1885
4.	The Right to	To provide for setting out the practical regime of right	Applicable - Designated authorities to be in	Complied with: Designated

S. No.	Acts, Notifications and Policies	Relevance	Applicability to the project	Status of Compliance
	Information Act, 2005	to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, the constitution of a Central Information Commission and State Information Commissions and for matters connected therewith or incidental thereto.	place.	authorities are already in place in AEGCL/APDCL.
5.	Indian Treasure Trove Act, 1878 as amended in 1949	To provide for procedures to be followed in case of finding of any treasure, archaeological artifacts etc. during excavation.	Not Applicable - No such instances reported.	Not Required
6.	Workmen's Compensation Act, 1923	This act provides for compensation in case of injury by accidents arising out of and during the course of employment.	Applicable during construction, operation and decommissioning phases – Since labours are engaged during different phases.	Complied with: No such instances of violation of act have been reported.
7.	Minimum Wages Act, 1948	As per this act, the employer is supposed to pay not less than the Minimum Wages fixed by appropriate Government.	Applicable during construction, operation and decommissioning phases – Since labours are engaged during different phases.	Complied with: No such instances of violation of act have been reported.
8.	The Child Labour (Prohibition and Regulation) Act, 1986	This Act prohibits employment of children below 14 years of age in Building and Construction Industry covering Railway.	Applicable during construction, operation and decommissioning phases – Since are engaged during different phases.	Complied with: No such instances of violation of act have been reported.
9.	The Sexual Harassment of Women at Workplace (Prevention, Prohibition and Redressal) Act, 2013	To provide protection against sexual harassment of women at workplace and for the prevention and redressal of complaints of sexual harassment and for matters connected therewith or incidental thereto.	Applicable during construction, operation and decommissioning phases – Since labours are engaged during different phases.	Complied with: No such instances of violation of act have been reported.

Table 2.3: World Bank Operational Policy

S. No.	Acts, Notifications and Policies	Relevance	Applicability to the project	Status of Compliance
1.	OP- 4.01: Environmental Assessment	To ensure the environmental and social and sustainability of investment projects. Support integration of environmental and social aspects of projects in the decision-making process.	Applicable - E & S aspects of the project have already been integrated into management procedures based on comprehensive environment assessment undertaken by IA.	Complied with: E & S aspects of the project have already been integrated into management procedures based on comprehensive environment assessment undertaken by IA during 2015.
2.	OP- 4.04: Natural Habitats	To promote and supports natural habitat conservation and improved land use to integrate into national and regional development the conservation of natural habitats and the maintenance of ecological functions. Furthermore, to promote the rehabilitation of degraded natural habitats.	Not Applicable - The present project does not involve any natural habitats such as biodiversity area, protected area, sacred groves etc.	Not Required
3.	OP-4.11: Physical Cultural Resources (PCR)	To preserve PCR and in avoiding their destruction or damage. PCR includes resources of archaeological, paleontological, historical, architectural, and religious (including graveyards and burial sites), aesthetic, or other cultural significance.	Not Applicable - The Present project does not encroach upon any such resources.	Not Required
4.	OP-4.36: Forests	To harness the potential of forests to reduce poverty in a sustainable manner, integrate forests effectively into sustainable economic development, and protect the vital local and global environmental services and values of forests	Not Applicable – Though all line routes and substation locations successfully avoided encroachment into any Protected and Reserve forests.	Not Required
5.	WB EHS Guidelines for Electric Power Transmission and Distribution	The Environmental, Health, and Safety (EHS) Guidelines are technical reference documents with general and industry specific examples of Good International Industry Practice. The EHS Guidelines contain the performance levels and measures that are generally considered to be achievable in new facilities by existing technology at reasonable costs.	Applicable - EHS guidelines are being followed during project implementation.	Complied with: EHS guidelines are being followed during project implementation.
6.	OP 4.12 – Involuntary	Covers direct economic and social impacts both resulting	Not Applicable - As no involuntary acquisition	Not Required.

S. No.	Acts, Notifications and Policies	Relevance	Applicability to the project	Status of Compliance
	Resettlement	from Bank-assisted investment projects and are caused by the involuntary taking of land. To avoid or minimize involuntary resettlement and, where this is not feasible, assist displaced persons in improving or at least restoring their livelihoods and standards of living in real terms relative to pre-displacement levels or to levels prevailing prior to the beginning of project implementation, whichever is higher.	invoked for securing land for proposed substations. However, fresh land required for construction of new substations were secured through direct Purchase on Willing Buyer Willing Seller basis on negotiated rate	
7.	OP 4.10 – Indigenous Peoples	This policy contributes to the Bank's mission of poverty reduction and sustainable development by ensuring that the development process fully respects the dignity, human rights, economies, and cultures of Indigenous Peoples. The objective is to design and implement projects in a way that fosters full respect for indigenous peoples so that they receive culturally compatible social and economic benefits, and do not suffer adverse effects during the development process. The project shall ascertain broad community support for the project based on social assessment and free prior and informed consultation with the affected Tribal community, if any.	<p>Not Applicable - Since the project is not implemented in the jurisdiction of Autonomous District, therefore, consent of ADC is not required.</p> <p>Table 2.2, Sr no 2</p> <p>Applicable - Since the project is being implemented in the jurisdiction of Karbi Anglong, therefore, consent of ADC is required.</p> <p>please update the text as per the field assessment.</p>	Not Required

2.6 STATUTORY PERMISSION/LICENSES/NOC OBTAINED

The applicability of acts, notifications and policies have already been described in above paragraphs and table. As per the applicability, necessary permission/ licenses/ NOC so far obtained by IA or contractor are:

- Under the provisions of Section 68(1) of Electricity Act, 2003, prior approval GoA is a mandatory requirement to undertake any new transmission project 66kV upward and for distribution project of 33kV system in the State. As a part of permission/ approval, GoI approved the NERPSIP comprehensive scheme for six North Eastern States including Assam under vide its Office Memorandum dated 1st December 2014. In addition, Implementation/ Participation agreement between AEGCL and APDCL and PGCIL has been signed on 29th May, 2015.
- All the contractors are operating with valid labor license as per provision under section – 12(1) of the Contract Labour (Regulation & Abolition) Act, 1970 and also certified under Section- 7(3) of the Building and Other Construction Workers (Regulation of Employment and Condition of Service) Act, 1996 from Ministry of Labour & Employment.
- All the contractors have obtained requisite insurance policy as per provisions of Employee Compensation Act, 1923 for its employed workforce.
- Since the route of transmission lines are coming under various villages of districts, No Objection Certificates (NoC) from concerned land owner/ Headman /Village Council are being obtained as per the progress of work.

Chapter 3

BASELINE DATA

3.1 INTRODUCTION

This chapter deals with the baseline status of physical, biological, socio-economic environment in the study area as well as district belonging to study area. The baseline data presented in this chapter has been prepared from primary data collected during field studies as well as data/information gathered from available literature and reports published by various institutions and organizations.

3.2 DEFINING STUDY AREA

Environmental impacts of T&D projects are not far reaching and are mostly localized to RoW (refer **Table 3.1**). However, T&D projects have some effects on natural and socio-culture resources. Study area has been defined as RoW of transmission line i.e. 27 m corridor for 132 kV transmission line and 15 m corridor for 33 kV distribution line. Also, area in immediate vicinity of substations has been included in the study area.

Table 3.1: RoW Width

Transmission Voltage	Max. RoW (m)
132 kV	27
33 kV	15

3.3 DISTRICT BELONGING TO STUDY AREA

The project is an intra-state power sector project located in the State of Assam and study area covers Golaghat, Jorhat, Nagaon, Sibsagar and Karbi Anglong districts of Assam.

Golaghat district occupies an area of 3502 sq. km. The district extends from 26°41' N to 27° 17' N and 93°18' E to 95°26'E. It is bounded by river Brahmaputra in North, by Nagaland in South, by Jorhat district in East and by Karbi Anglong district and Nagaon district in west. Golaghat is the district headquarters.

Jorhat district lies between co-ordinates 26.20" N to 27 10.30" N and 93.39" E to 94 36.30" E and has a Geographical Area of 2851 sq. km. The district is bounded on the north by Lakhimpur district; on the south by the state of Nagaland; on the east by Sibsagar and Dibrugarh district and on the west by Golaghat district.

The districts of **Nagaon** and **Hojai** stands on the south bank of the mighty river Brahmaputra. It is located in a central geographical position in the State of Assam. The district lies between 25°45" and 26°45" North latitudes and 91°50" and 93°20" East longitudes and has a Geographical Area of 3973 sq. km. On the north the district is bounded by the river Brahmaputra, on the east by Golaghat and Karbi-Anglong district, on south by Karbi Anglong and Dima Hasao districts and west by the Marigaon district which had been carved out of erstwhile Nagaon District.

Sibsagar district lies between 26°41' and 27°17' latitude and 94°24' and 95°29' longitudes. On the north and east it is bounded by the district of Dibrugarh and on the west and southwest by the district of Jorhat and by Nagaland in South. The district now covers an area of 2,668 sq. km.

Karbi Anglong and **West Karbi Anglong** is situated in the central part of Assam. The district is surrounded by Nagaon and Golaghat district in the north, Dima Hasao and Nagaland in the south, a part of Golaghat district in the east and Meghalaya and Morigaon districts in the west. The district with dense tropical forest covered hills and flat plains is situated between 25°33' N to 26°35' N Latitude and 92°10' to 93°50' E Longitude. The district covers an area of 10434.00 Sq. Km.

3.4 PHYSICAL ENVIRONMENT OF DISTRICTS BELONGING TO STUDY AREA

3.4.1 Physiography

The natural topography of the district **Golaghat** is a belt of flooded land situated in the north of Dergaon sub-division which is a wide and homogenous plain and low lying area along the Brahmaputra. It is the populous and important portion where cultivation brings in considerable prosperity and progress. On the lower land, the staple crop is rice, and the higher levels have been planted out with tea. The entire landscape of the district is one of rural plenty and the district is very rich in tea. The tea gardens themselves have enough to appeal to the lover of the picturesque. The rows of the bushes are premed down to one uniform level and the monotony of this expanse of green is only relieved by the labourer's lines, the factory and the manager's bungalows.

The Upper Valley of the Dhansiri and Kajiranga are covered with dense forest. A wonderful view of forest can be obtained from one of the outer ranges of the Naga. The Diyong forest area is also covered with dense tree-forest, which makes the place beautiful and abode for many kinds of animals.

The whole of the district is a level plain. One small hillock calls for special mention, but only on account of the associations with which it is connected and not from any intrinsic importance of its own. The Neghereting hill is a small eminence near the Brahmaputra on which stands a temple sacred to Mahadeva/Siva.

Jorhat district can be divided into three broad natural divisions. The first one is a belt of flooded land. The expanse of flooded belt runs four to 12 kms in width on the southern bank of Brahmaputra. The area is covered with jungle reed interspersed, some swamps and rich variety of fodder grass. Summer cultivation of rice is carried on and in winter rabi crops are grown. A few patches of dense forests serve as abode of wild animals. Secondly a vast area plain area lies between Nagaland and the Brahmaputra. The area is thickly populated with enormous plain area for cultivation of any sort. On the high areas tea is grown exorbitantly and while the plain area is surfaced with rice cultivation and is, therefore, regarded as surplus rice grown area in the district. The third division embraces the entire Majuli subdivision. Majuli is a gift of nature. Majuli is the only riverine island in the world. Subansiri and Kherkatia Suti have separated Majuli from Lakhimpur district. Only transplanted rice is grown there

during summer. Winter cultivation is carried out in plenty. The reeds when bloom in winter adds picturesque scenery on all sides when flood water recedes and a vast tract is visible where reeds naturally grow. 'Ahu', 'Bao', Mustard, Sali plant and other rabi crops are the principal items of cultivation.

Topographically the whole of Jorhat district is a level plain. It has, therefore, no lake, beel and marshy land. A few of them are seen in Majuli. These are as a result of changes of course of the rivers. The river 'Bhogdai' is the only major river in the district. The river rises from the high hills of Nagaland and passes through the district in northwesterly direction till it mingles with the water of Dhansiri. The entire course of the river is named as Disai for the upper course and the lower is known as Bhogdai. The river bed is full of silts and in winter all these are taken away as one building material. Due to enormity of silts on the riverbed ranging from 2 ft. and more navigation has become simply impossible. It has a total length of 160 km. and at places in Jorhat and Mariani two bridges have been constructed to facilitate connection and communication with places of the either banks. Mariani Railway Junction and a host of tea gardens are situated on the left hand side of the river bank. Climate of the district is quite akin to what it is enjoyed in the Brahmaputra valley. Mild winter and hot-wet summer, Generally, November to January is termed as period of winter while June to August is the summer months.

Topographically, the districts **Nagaon** and **Hojai** are heterogeneous land composed of both high hills, low lands and level plains like that of other districts of Assam. Across the centre of the plain there are wide fields of cultivated land extending from Silghat on the North- East to Jaji on the south- west. There are wide expanses of grassland on the north- west and of forest and hills on the south and east. The general appearance of the district is extremely picturesque. On every side there are swamps and rivers, hills and woods, which depict variety of scene. The land bordering the south bank of the Brahmaputra is low-lying area and is deeply flooded during the rainy seasons. For the greater part of the year the area is covered with grasses and reeds such as Khagari, Ekra and Nal (reed) which grow from three to six meters high. The higher land produces Ulu and other kinds of shorter grasses used for thatching. Nepali grazers generally keep large herds of Buffaloes and Cows on the chars or sand banks, which are formed by the Brahmaputra. The South of the Kopili between Dharamatul and the hills is also low lying areas It is also subject to flood and is covered with high grasses.

The elevated tracts consist of a range of low hills. The major portion of the hilly tract lies within the erstwhile Karbi Anglong & Dima Hasao but the Western spurs from Kulthars to Dabaka lie in Nagoan. The hill is covered with dense forest. There are many other small hills and hillocks that can be seen in the Doboka reserved forest, Lumding reserved forest and near Silghat. The highest peak in the district is Bar Kandali. The hill people grow rice, potato, cotton and vegetables on the slope of the hills.

Beels and marshes are scattered throughout the district. There are more than hundred beels in the district most of which are public fisheries. Important among them are Mora Kalang and Kachudhara which have formed in the old bed of the Kalang. Other important beels is the Pota-Kalang in the town mauza, Lalung beel in the Namali mauz and Haribhanga beel near

Laokhoa beel and marshes teem with fish and are the haunt of wild birds like the crane, pelican or fish eagle and the kingfisher. Beels and marshes dominate the economy of the district to a great extent. The district is rich in fish and is a source of income for the district as well as for the people.

The natural topography of the district of **Sibsagar** is a flooded tract which is a wide, healthy and homogeneous plain lying between the Naga hills and the low lying area along the Brahmaputra. It is the populous and important portion in which there is hardly any jungle to be seen and where cultivation brings in considerable prosperity and progress. On the lower land the staple crop is rice, while the higher levels have been planted with tea. The landscape, as a rule, is one of rural plenty. On every side stretch fields of waving rice the view is bounded by groves of feathery bamboos and slender arecanut trees in which the houses of the cultivators lie concealed. The tea gardens themselves have lot to appeal to the lover of the picturesque landscapes. The rows of the bushes are permed down to one uniform level and the monotony of this expanse of green is only relieved by the labourer's lines, the factory and the manager's bungalows.

On the west of the Disai, the appearance of this plain is diversified by the protrusion of sub-soil and rice is often grown in curious depressions, called *holas*, which are three or four feet below the level of higher land. The ground between these *holas* is used for grazing or for the village site and is often planted out with sugar cane. A wonderful view of the plain and forest can be obtained from one of the outer ranges of the Naga Hills near Kanching Basti.

Topographically the **Karbi Anglong** and **West Karbi Anglong** districts is divided into two natural divisions by a portion of the Nagaon district which bifurcates this district to form two detached parts. The eastern part comprises of two sub divisions Diphu and Bokajan and the other part known as Hamren sub division. The entire district consists of hilly region. Only narrow part of plains land found along the banks of the river Kapili, Dhansiri, Jamuna and Barapani. The hilly region ends in the Brahmaputra valley in the north, the Dhansiri plains on the east and on the west the plains of river Jamuna. Beyond this narrow plains the hills sharply rises and covered with dense forest. The upper reaches of Dhansiri and Kaliani are almost destitute of population. The beauty of nature from the blue hill ranges with wilderness of dense trees can be viewed from some 40 km away of Nagaland. On foot hills of the blue hill the Karbi people use to cultivate their daily needs as rice, vegetables, mustard, cotton etc. Bamboo, jungles and creeper trees found in the steeply sloping of the hills are places of habitation of wildlives. The outer ranges of the district are 450 m height in average and the summits are 1000 m or more above the sea level. Further the district can be divided into two parts, one northern range is having an elevation of 600 m stretches from Dabaka in the south west to Bokakhat in the north. Then higher southern range extends from Bakulaighat to Borpathar in the north east. The western part rises steeply from the narrow valley of Kalani separates the two parts. The plains area which includes the valley of Jamuna, Kapili and Dhansiri having elevation range of 75 m to 250 m stretches between Lumding, Hojai and Diphu. From among these, the valley of Jamuna is by far largest and most populated by heavy immigrants from both hills and plains in search of food and shelter. Then the Kapili valley including Dhansiri and the plains of Barapani river are also places of habitation of people since a petty long time. But now a days migration from various parts increases the density of

population of these region considerably. The main peaks of northern and southern ranges are Bishandori, Kud, Mokrang, Mehekongthu, Raidan, Kankochan Chenghetishon, Matikhola, Warekmushak, Bargarichang, Bhaluk, Cheniibirshow, Hunghi, Khubaman etc.

3.4.2 Drainage

On the north of **Golaghat** district, the river mighty Brahmaputra starting its maiden journey through Assam meets the tributaries of the district. The tributaries are mainly Dhansiri, Disai, Diphlu, Kakodonga, Rengma, Daigurung etc. There are various streams and rivulets called jan and juri to flush out the water of the district. Among the jan and juri, the important of them are Thora jan, Langta jan, changa jan etc. The whole drainage of the district ultimately finds its way to the river Brahmaputra. All the rivers and jan and juri of the district take the part to drain out its water to river Dhansiri which meets with the Brahmaputra.

Kakodonga is important river bordering **Jorhat** and Golaghat district. It serves as a natural boundary. The river has become shallow and its meandering course during summer inundates large areas for breaching of embankments at several places. However, it serves the purpose of flushing out the excess water much to the relief of the inhabitants of both the districts. Jorhat is a very fast growing city. The Jorhat municipality looks forward to provide latest quality of amenities to the people like renewable energy, storm water drainage system, better walkable and motorable roads, pure drinking water and better street lighting. It is also plans for a solid waste management plan to fight for waste related diseases. The municipality has also equipped with modern tools for roads, drain development, germs fighting, street light maintaining, cess pooler and solid waste career.

The districts **Nagaon** and **Hojai** are washed by a close network of drains which originate in the Brahmaputra River on the north. The whole drainage of the district generally gets its way to all rivers of the district. And the entire water of all the streams and streamlets ultimately finds it's way to the river Brahmaputra. The Brahmaputra is drained by a large number of water courses forming a network of intricate channels which widen out into beels and swamps. The important tributaries, streams, streamlets, jan and juri carry off the waters of the hills into the large rivers which finally fall into the Brahmaputra. The north-east corner of the district is drained by the Diphlu, Gatanga, and Deopani, the latter being the tributary of the Gatanga. The area in between the Brahmaputra and the Kalang is drained by the Leteri and Sonari which fall into the Brahmaputra. On the extreme west at Hilaikunda, Pakaria channel drains out and falls into the Brahmaputra.

On the east of the **Sibsagar** district flows the Disang river starting its maiden journey from the Patkai Bum which is situated at latitude 26°38' and longitude 95°27'. The maximum altitude near about this origin is 8,511 feet. Then the river Tisa, as the Disang is known near about its origin, moves towards north and travels about 38 miles horizontally before it meets with its first tributary Towaijo, which originates in the Konyak Naga country at an attitude of 5,391 feet. The catchments area of the Disang is 1,599 sq. miles.

West of the Disang river is the Dikhou, which originates from a Sema Naga area whose latitude is 26°5' and longitude is 94°33'. This place has an altitude of 5,981 feet. Near its origin this river is known as the Longa river, which moving northwest for about 12 miles, turns

north-east and proceeds in this way about 16 miles and then meets its first tributary Chimeel Nadi on the right bank. Its principal tributary in Sivasagar is the Darika, which flows a little northeast of Sibsagar town and falls into the Dikhou near its mouth.

To the west of the Dikhou it is the Jhanji, which originates near Mukokchung at an altitude of 4,644 feet, the latitude and longitude respectively being 26°20' and 94°32'. At the initial stage the river is known as the Melek Nadi, which moves north-west and meets innumerable streams until it comes across its main tributary Muring Nadi of the right bank. The total length of the Jhanji is 67 miles and its area is 530 square miles.

The plains of Sibsagar district lying in the basin areas of river Disang, Dikhou and Jhanji and all these tributaries of Brahmaputra flows towards west and confluence with the Brahmaputra at Disangmukh, Dikhomukh & Jhanjimukh (Jorhat District). These areas suffer frequently from the floods. But the magnitudes of the devastation and havoc caused by floods have increased after the great earthquake of 1950.

The water drainage in the north of the **Karbi Anglong** and **West Karbi Anglong** districts are the mighty Brahmaputra. Among the rivers, Dhansiri in the north east, the Kapili, the Doiang and the Jamuna in the west constitute the main drainage of the district. In Karbi Anglong proper the water drainage shows a radical pattern with the rivers and streams flowing south into the Jamuna valley, west into Kapili valley and in north into the Brahmaputra. The other important rivers of this district are Kalioni, flowing to east-north and the east is crossed the north eastern part. The river Diphu flows towards northern slopes, Deopani, Kaipani towards north-western slopes of the district. The Langkangtang along with the tributaries of river Nonoi flows towards western slopes. Then Bar Dikharu, Horaghati, Chelabor flows through south-western slopes. Some other important rivers of Karbi Anglong and West Karbi Anglong are Nambar, Doigrung, Kalanga, Horguti, and Harina. Among these Nambar, Doigrung and Kalioni are the tributaries of river Dhansiri. The river Kalonga flows into Kapili after passing through Rongkhang area. The Horguti river arising from Singahasan hill crossing plains meets Dikharu river and ultimately falls into Jamuna. The river Diphu is also a tributary of Jamuna. The river Harina originating from north-west of Karbi Anglong also joins with Jamuna.

Although the districts of Karbi Anglong and West Karbi Anglong has numbers of rivers, tributaries and streams, the district is free from flood due to physical aspect. The district is wholly a hill area where rain water has no chance of accumulation to occur flood like other plain districts. The torrential rain at this hill district sometimes causes to raise the level of water of Kapili, Dhansiri, Barapani and Jumana rivers which causes flood in the plains of the river valley of Karbi Anglong district. The Kapili river sometime creates flood in Baithalango area. and river Dhansiri in Borpather area. However the damage caused by the flood is not a serious matter as the flood water does not last for long time. The people can cultivate their crops again. The boon of the nature sometimes becomes a curse in gap of years when heavy rain cause the water height to wash away the crops if it occurs during harvesting time. But it also helps indirectly to enhance the natural fertility of the land for future.

3.4.3 Meteorology

Just like climate of Assam, **Golaghat** district has a climate, which is characterized by a highly humid atmosphere, abundant rains and general coolness. The cold season from December to February is followed by the season of severe thunderstorms from April to June. The southwest monsoon season is from June to about the beginning of October. October and November constitute the post monsoon season.

There is a meteorological observation station at Golaghat. The cold season starts about the end of November when both day and night temperatures begin to drop rapidly. January is the coldest month of the year with the mean daily minimum temperature at 9.8°C (49.6°F) and the mean daily maximum at 21.6°C (70.9°F). Temperatures begins to rise from about the beginning of March and by July, it attains the highest point, the mean daily maximum temperature being 31.8°C (89.3°F).

The monsoon season is the period of the year with the highest temperatures. Being also the high moisture in the air, the weather is often unpleasant with the damp heat particularly in between the spells of rain. As per Statistical Handbook Assam - 2020 the average monthly rainfall was highest in the month of September with 343.1 mm. The lowest rainfall recorded was 1.1 mm in December.

Like other parts of Assam and the adjoining districts of Golaghat and Sivasagar, **Jorhat** also enjoys similar climate with slight variation during winter. It is characterized by highly humid atmosphere, abundant rainfall and coolness. A little away from the district HQ, a place Barbheta where the Agricultural University is located is known as the foggiest area in the district and the state as well. Cold season starts from November to January and summer starts from May to July every year. Heavy rainfall coupled with storms and thunderstorms, the result of south-west monsoon characterizes the rainy season in the district. Temperature starts falling from November and rises from the month of March every year. The highest maximum temperature in the district is 42°C and the lowest is 8°C. As per Statistical Handbook Assam - 2020 the average monthly rainfall was highest in the month of July with 362.6 mm. The lowest rainfall recorded was 6.3 mm in November.

The climate in **Nagaon** and **Hojai** districts is moderately cold and foggy during winter with very much humidity in the air at the time of summer. Generally, the weather goes dry and moisture less from February to April. From May to September sufficient rain fall sweep over the district with heavy moisture in the atmosphere. In the month of October and November, the weather becomes pleasant and the atmosphere gets foggy. Fogginess remains in the atmosphere till the end of January. The real winter starts in the month of November and continues for about four months. The atmosphere is dusty during the month of February and March of each year. Skies are heavily clouded or overcast during April and May. In the period March to May, northeasterlies and easterlies winds are more common. Cyclonic storms and depressions which originate in the Bay of Bengal and move into Assam including Nagaon district during May and June. Thunderstorms also occur during the period March to October, their frequency being highest in April. Fog occurs on some days during the last part of December and the beginning of January. The rainfall in the district generally increases from the south towards the north. A major portion of the annual rainfalls received during the

period June to September, July being the rainiest month of the year. The highest rainfall recorded varies in months. As per Statistical Handbook Assam - 2020 the average monthly rainfall was highest in the month of July with 190.2 mm. The lowest rainfall recorded was 1.6 mm in December.

Just like the rest of upper Assam, **Sibsagar** district has a climate, which is characterized by a highly humid atmosphere, abundant rains and general coolness. The cold season from December to February is followed by the season of severe thunderstorms from March to May. January is the coldest month of the year with the mean daily minimum temperature at 9.8°C (49.6°F) and the mean daily maximum at 21.6°C (70.9°F). Temperatures begin to rise from about the beginning of March and by July they attain the highest point, the mean daily maximum temperature being 31.80°C (89.3°F). The monsoon season is the period of the year with the highest temperatures. Being also the period with high moisture in the air, the weather is often unpleasant with the damp heat particularly in between the spells of rain. The highest rainfall recorded varies in months. As per Statistical Handbook Assam - 2020 the average monthly rainfall was highest in the month of May with 374.5 mm. The lowest rainfall recorded was 0.6 mm in December.

The **Karbi Anglong** and **West Karbi Anglong** districts as a whole experiences a normal cool weathering environment. The plains of the district has a different climate to some extent. The air humidity is very high all through out the year. Particularly during the south west monsoon season the relative humidity goes up to 80%. Within the period February to April the season is dry and humidity comes down to 50-60%. Abundant rain fall occurs from March to June. The south west monsoon occurs from June to October. Month of October and November is the autumn season. This is the post monsoon period. The cool season occurs from December to February. January being the coldest period of the year when mercury level shows minimum temperature between 5° to 6°C in some places. Fog occurs frequently during the autumn and cold season Rain fall is heavy during the period June to September. This period is so far considered to be sufficient for the purpose of agriculture in the area. But during autumn and winter, rain fall is not at all adequate for winter and spring crops. 81.1% rural population depends on agriculture and rainfall is the only source of irrigation for their cultivation. As per Statistical Handbook Assam - 2020 the average monthly rainfall was highest in the month of April with 175.6 mm. The lowest rainfall recorded was 0 mm in December and January.

3.4.4 Soils

The arable soils of **Golaghat, Jorhat and Sibsagar** districts may broadly be grouped into Old alluvial soils, New alluvial soils of riparian tracts and Hilly soils. The major portions of the arable soils of the district are however, alluvial soils. The textures of the soils of the district vary from sandy loams to sands. There are also some clayed loams or clayed soils. Both old alluvial soils and hills soil are acid in reaction and deficient in 'available' phosphate and potash also. As regards to total nitrogen, it varies from high to low in case of old alluvial soils, it is medium in most of new alluvial soils, while hill soils are usually comparatively rich in nitrogen apparently due to the virgin nature of the soils.

The characteristics of soils of the **Nagaon** and **Hojai** districts are not deviated from that of the soils of the neighbouring districts. The district is characterized by an abundance of marshes

and low lands, the soils of which contain a large percentage of organic matter. The solid geology of the district, which mostly lies under the broad level plain, is covered by alluvium. The alluvium soils is mostly loamy and consist of a mixture of clay and sand in varying proportion, ranging from pure sand on the banks of the Brahmaputra to a stiff clay which is quite unfit for cultivation. Marshy soil is mainly found in the low lying waterlogged areas. The red soil generally **finds** in the hill slopes and foot hills formed by the watering of the Pre-Cambrian rocks. The laterfic soil of recent age is also found near Lumding. The new alluvium soils are mostly found in the narrow flood-prone tracts of the district. They vary in texture, mostly from clay to sandy loams. The soils are less acidic. The percentage of nitrogen and organic matters are suitable propositioned for agricultural purpose. The soils in the district are mostly fertile due to annual deposit of silt carried by the large number of rivers.

The soil of the **Karbi Anglong** and **West Karbi Anglong** districts contains high quantity of organic matters and nitrogen. It is due to withering process of the hills which being washed away by rain. As the soil is acidic and contained organic matters and nitrogen these help in producing many crops like paddy, sugar cane, mustard, cotton, maize including fruits like citrus, orange, pineapple, cashew nut, banana, etc.

3.4.5 Landuse Pattern

The study area pass through mixed land uses which are agricultural land, private plantation, government land etc. The calculations are based on detailed survey/ investigation carried out along the route of transmission/distribution lines and considering the total length of the line and its right of way. The total line length is 121.384 km which will impact an estimated of 453.503 acre of land. These include 78.417 km of line passing through agricultural land (292.537 acre of agricultural land), 18.561 km of private plantation (69.092 acre of private plantation land) and 24.406 km of government land (91.874 acre of government land). A brief description about the type and use of land in the study area is given in **Table 3.2**.

3.5 BIOLOGICAL ENVIRONMENT OF DISTRICTS BELONGING TO STUDY AREA

It is pertinent to mention that, in the present project, forest area/land covered under Forest (Conservation) Act, 1980 has been completely avoided with careful selection of route alignment. Therefore, diversion of forest land is not involved in the project.

To analyze the impacts and plan mitigation measures, it is imperative to study baseline information broadly for districts belonging to study area and specifically for transmission line and surrounding or proximity area as well (study area), which includes forest areas under the control of individual/community/village councils. The same has been described in ensuing paragraphs.

3.5.1 Forest Types

As per the Champion & Seth Classification of Forest Types (1968), the forests of Assam belong to seven Forest Type Groups further divided into 25 different Forest Types and Plantation/Tree outside Forest (TOF). Among these, 5 forest types as given in **Table 3.3** are recorded in the study area districts.

Table 3.2: Landuse Pattern of the Districts Belonging to the Study Area

S. No.	Name of Line	RoW (m)	Agricultural Land		Private Plantation		Govt. Land		Total	
			Length (km)	Area (acre)	Length (km)	Area (acre)	Length (km)	Area (acre)	Length (km)	Area (acre)
A	Transmission Lines									
1	LILO of Golaghat – Bokajan 132 kV S/C line at Sarupathar	27	0.000	0.000	0.000	0.000	0.270	1.801	0.270	1.801
2	LILO of Jorhat (Gormur) – Nazira 132 kV S/S on D/C at Teok	27	0.637	4.250	0.100	0.667	0.207	1.381	0.944	6.298
	TOTAL - A		0.637	4.250	0.100	0.667	0.477	3.182	1.214	8.099
B	Distribution Lines									
3	33 kV line from 132/33 kV Shankardeo Nagar S/S to 33/11 kV Mailu S/S	15	18.689	69.270	1.883	6.979	0.000	0.000	20.572	76.249
4	33 kV line from 132/33 kV Samaguri S/S to 33/11 kV Hatimurah-II S/S	15	6.500	24.092	5.400	20.015	7.290	27.020	19.190	71.127
5	33 kV line from 132/33 kV Teok S/S to 33/11 kV Teok S/S	15	3.210	11.898	1.710	6.338	0.430	1.594	5.350	19.830
6	33 kV line from 132/33 kV Teok S/S to 33/11 kV Kakojaan S/S	15	15.967	59.181	2.952	10.941	1.611	5.971	20.530	76.093
7	33 kV line from 132/33 kV Teok S/S to 33/11 kV Zangi S/S	15	4.904	18.176	0.500	1.853	0.877	3.251	6.281	23.280
8	33 kV line from 132/33 kV Teok S/S to 33/11 kV Amguri S/S	15	5.116	18.962	2.841	10.530	0.243	0.901	8.200	30.393
9	33 kV line from 132/33 kV Sarupathar S/S to 33/11 kV Barapathar S/S	15	2.230	8.265	0.529	1.961	8.076	29.933	10.835	40.159
10	33 kV line from 132/33 kV Sarupathar S/S to 33/11 kV Sarupathar S/S	15	1.944	7.205	0.778	2.884	3.041	11.271	5.763	21.360
11	33 kV line from 132/33 kV Sarupathar S/S to 33/11 kV Sariahjan S/S	15	19.220	71.238	1.868	6.924	2.361	8.751	23.449	86.913
	TOTAL - B		77.780	288.288	18.461	68.425	23.929	88.692	120.170	445.404
	TOTAL A+B		78.417	292.537	18.561	69.092	24.406	91.874	121.384	453.503

Source: Detailed Survey of POWERGRID/ Contractor

Table 3.3: Forest Types Found in the Study Area

S. No.	Forest Type
1	1B/C3 Cachar Tropical Evergreen Forest
2	2/2S1 Secondary Moist Bamboo Brakes
3	2B/2S1 (Pioneer Euphorbiaceous Scrub)
4	2B/2S2 Eastern Alluvial Secondary Semi-Evergreen Forest
5	3C/2S1 Northern Secondary Moist Mixed Deciduous Forest

3.5.2 Forest Cover

Total forest cover in the districts belonging to study area is 10720.41 km², which is 45.76% of the geographical area of the districts. In terms of forest canopy density classes, the districts has 675.93 km² under Very Dense Forest, 4504.75 km² under Moderately Dense Forest and 5539.73 km² under Open Forest. The details of forest cover are given below in **Table 3.4**.

Table 3.4: Forest Cover in Districts Belonging to Study Area

S. No.	Name of District	Geographical Area (GA) (km ²)	2019 Assessment (Area in km ²)				% of GA	Scrub
			Very Dense Forest	Moderately Dense Forest	Open Forest	Total Area		
1	Golaghat	3502.00	21.00	119.30	529.61	669.91	19.12	4.00
2	Jorhat	2851.00	12.00	103.00	445.10	560.10	19.65	4.00
3	Nagaon & Hojai	3973.00	50.00	363.00	498.26	911.26	22.94	9.00
4	Sibsagar	2668.00	9.00	152.83	528.13	689.96	25.86	2.40
5	Karbi Anglong & West Karbi Anglong	10434.00	583.93	3766.62	3538.63	7889.18	75.61	84.38
	TOTAL	23428	675.93	4504.75	5539.73	10720.41	45.76	103.78

Source: India State of Forest Report 2019, Assam

3.6 BIOLOGICAL ENVIRONMENT OF THE STUDY AREA (RoWs & SUB-STATIONS' VICINITY)

3.6.1 Floristics Elements

The study area for the floristic surveys has already been defined in the Chapter 1 which is defined as area in the proximity of the proposed transmission lines on both left and right sides, corridors of transmission line routes and substations. The description of the vegetation is based upon these observations and data collected around each site collected through transects as already mentioned above.

In general, the vegetation in and areas around sampling sites is comprised of tropical wet evergreen and semi-evergreen floral elements. Therefore, field surveys for the assessment and composition of vegetation were conducted to assess the floral wealth in the proximity to the towers, sub-station and along the routes of transmission line.

A series of transects were identified along the routes of transmission line covering the corridors between the ROW of transmission line and substations. Details of transmission line and locations (transects) selected for phyto-sociological survey are as given in **Table 3.5**.

Table 3.5: Transmission & Distribution Lines and Transects Locations for Vegetation Sampling

S. No.	Name of Transmission Line	Status of Project	Distance Covered
1	LILO of Golaghat – Bokajan 132 kV S/C line at Sarupathar – 0.270 km	<ul style="list-style-type: none"> ➤ Route survey completed ➤ Tree enumeration yet to start ➤ Tower foundation and erection completed ➤ Stringing work yet to start 	Entire route
2	LILO of Jorhat (Gormur) – Nazira 132 kV S/S on D/C at Teok – 0.944 km	<ul style="list-style-type: none"> ➤ Commissioned on 07/06/2021 	Entire route
3	33 kV line from 132/33 kV Shankardeo Nagar (existing) S/S to 33/11 kV Mailu (new) S/S – 20.572 km	<ul style="list-style-type: none"> ➤ Completed on 30/06/2021 	AP-4 to Loc-6/10 = 1.4 km AP-25 to Loc-28/1 = 1.1 km Loc-38/40 to AP-42/7 = 1.7 km Total Distance Covered = 4.2 km
4	33 kV line from 132/33 kV Samaguri (existing) S/S to 33/11 kV Hatimurah-II (new) S/S – 19.19 km	<ul style="list-style-type: none"> ➤ Commissioned on 09/07/2020 	AP-44 to AP-52 = 3.2 km
5	33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Teok (existing) S/S – 5.35 km	<ul style="list-style-type: none"> ➤ Commissioned on 31/12/2020 	Gantry to DP-2 = 0.1 km DP-35 to DP-47 = 0.5 km DP-107 to FP-5 = 0.5 km Total Distance Covered = 1.1 km
6	33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Kakojaan (existing) S/S – 20.53 km	<ul style="list-style-type: none"> ➤ Route alignment survey completed and approved ➤ Pole erection work under progress ➤ Stringing work under progress 	<ul style="list-style-type: none"> • Gantry to FP-2 = 0.2 km • DP-3 to FP-3 = 0.7 km • DP-10 to SP-143 = 0.7 km • SP-241 to DP-37 = 1.6 km • DP-73 to DP-85 = 0.5 km • DP-145 to FP-15 = 0.5 km Total Distance Covered = 4.2 km
7	33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Zangi (existing) S/S – 6.281 km	<ul style="list-style-type: none"> ➤ Completed on 28/02/2021 	<ul style="list-style-type: none"> • Gantry to SP-7 = 0.4 km • SP-35 to SP-58 = 1.1 km • DP-10 to SP-88 = 0.5 km • SP-107 to Gantry = 0.5 km Total Distance Covered = 2.5 km
8	33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Amguri (existing) S/S – 8.2 km	<ul style="list-style-type: none"> ➤ Route alignment survey completed and approved ➤ Pole erection work under progress ➤ Stringing work under progress 	<ul style="list-style-type: none"> • Gantry to SP-7 = 0.4 km • SP-74 to SP-94 = 1.1 km • SP-117 to DP-22 = 0.1 km • SP-130 to DP-29 = 0.2 km Total Distance Covered = 1.8 km
9	33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Barapathar (existing) S/S – 10.835 km	<ul style="list-style-type: none"> ➤ Route alignment survey completed and approved ➤ Pole erection work under progress ➤ Stringing work under progress 	<ul style="list-style-type: none"> • Gantry to FP-1 = 8 km • SP-157 to FP-2 = 1 km • FP-4 to DP-39 = 0.15 km Total Distance Covered = 9.15 km
10	33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Sarupathar (existing) S/S – 5.763 km	<ul style="list-style-type: none"> ➤ All the works are completed ➤ Testing and commissioning is pending 	<ul style="list-style-type: none"> • Gantry to DP-2 = 2.3 km • FP-6 to Gantry = 0.2 km Total Distance Covered = 2.5 km
11	33 kV line from 132/33 kV Sarupathar (new) S/S to	<ul style="list-style-type: none"> ➤ Route alignment survey completed and approved 	<ul style="list-style-type: none"> • Gantry to SP-5 = 0.4 km • SP-300 to Gantry = 8.2 km

S. No.	Name of Transmission Line	Status of Project	Distance Covered
	33/11 kV Sariahjan (existing) S/S – 23.449 km	<ul style="list-style-type: none"> ➤ Pole erection work under progress ➤ Stringing work under progress 	Total Distance Covered = 8.6 km

3.6.1.1 Taxonomic Diversity

Based upon the data collected during field surveys and data/information collected from secondary sources As per field surveys and based upon secondary data an inventory of 115 plant species in the study area has been prepared. Group-wise breakup of families, genera and species is given below.

Group	Angiosperms	Gymnosperms	Pteridophytes	Bryophytes	Total
Families	41	3	8	7	59
Genera	80	3	11	7	101
Species	88	3	15	9	115

A brief description of number of plant species recorded in various taxonomic groups is given in the following paragraphs.

a) Angiosperms

During the field surveys conducted in the study area 88 plant species of angiosperms belonging to 41 families and 80 genera were recorded (For detailed list see **Annexure I**). These include trees, shrubs, herbs, and grasses. Trees were comprised of 49 species, shrubs were 13, herbaceous component comprised of 18 species, and grasses/bamboos were represented by 8 species. The families with the most number of species recorded from the study area were Fabaceae (10), Poaceae (8), Asteraceae (6), Lamiaceae (6) and Moraceae (4).

b) Gymnosperms

Three species of gymnosperms recorded from the study area are given below in table.

S. No.	Family	Botanical Name
1	Cycadaceae	<i>Cycas pectinata</i>
2	Cupressaceae	<i>Platyclusus orientalis</i> (Syn. <i>Thuja orientalis</i>)
3	Podocarpaceae	<i>Podocarpus neriifolia</i>

c) Pteridophytes:

During field survey 15 species belonging to 8 families of Pteridophytes were recorded from the area:

S. No.	Family	Species
1	Athyriaceae	<i>Diplazium esculentum</i>
2	Blechnaceae	<i>Blechnum orientale</i>
3	Dryopteridaceae	<i>Dryopteris sparsa</i>
4	Gleicheniaceae	<i>Dicranopteris linearis</i>
5	Marattiaceae	<i>Angiopteris helferiana</i>
6	Polypodiaceae	<i>Leptochilus axillaries</i>
7	Polypodiaceae	<i>Lepisorus excavats</i>

S. No.	Family	Species
8	Polypodiaceae	<i>Lepisorus sordidus</i>
9	Polypodiaceae	<i>Polypodium sp.</i>
10	Pteridaceae	<i>Adiantum caudatum</i>
11	Pteridaceae	<i>Adiantum philippense</i>
12	Pteridaceae	<i>Pteris vitata</i>
13	Pteridaceae	<i>Adiantum edgeworthii</i>
14	Pteridaceae	<i>Pteris eniformis</i>
15	Thelypteridaceae	<i>Proniphrium nudatum</i>

d) Bryophytes

9 species belonging to 7 families of Bryophytes were recorded from the study area are as follows.

S. No.	Family	Species
1	Cyathodiaceae	<i>Cyathodium tuberculatum</i>
2	Lejeuneaceae	<i>Lejeunea curviloba</i>
3	Marchantiaceae	<i>Marchantia linearis</i>
4	Marchantiaceae	<i>Marchantia papiliata</i>
5	Marchantiaceae	<i>Marchantia paleacea</i>
6	Metzgeriaceae	<i>Metzgeria lindenbergi</i>
7	Pallaviciniaceae	<i>Pallavicinia lyellii</i>
8	Pelliaceae	<i>Pellia endiviifolia</i>
9	Plagiochilaceae	<i>Plagiochila subtropica</i>

3.6.1.2 Rare Threatened and Endangered Species

Conservation status of plant species found in the 'Study Area' was assessed using IUCN Red list of Threatened Species Version 2021.3 (accessed in February 2022) and Botanical Survey of India Red Data Book. Majority of the species have not been evaluated or assessed yet by IUCN (2021.3) and only 48 species have been assessed (Table 3.6) and most of them fall under 'Least Concern' (LC) category, 3 species under 'Near Threatened (NT)', 4 species under 'Vulnerable (VU)' and 2 species under Data Deficient (DD) category (Table 3.6).

Table 3.6: RET Plant Species Reported from Study Area

S. No.	Family	Species	Habit	Conservation Status IUCN 2021.3
1	Acanthaceae	<i>Adhatoda vesica</i>	Shrub	LC
2	Amaranthaceae	<i>Achyranthes aspera</i>	Herb	LC
3	Amaranthaceae	<i>Amaranthus viridis</i>	Herb	LC
4	Anacardiaceae	<i>Mangifera indica</i>	Tree	DD
5	Apocynaceae	<i>Alstonia scholaris</i>	Tree	LC
6	Araceae	<i>Colocasia esculenta</i>	Herb	LC
7	Arecaceae	<i>Phoenix dactylifera</i>	Tree	LC
8	Asteraceae	<i>Ageratum conyzoides</i>	Herb	LC
9	Asteraceae	<i>Chromolaena odorata</i>	Shrub	LC
10	Athyriaceae	<i>Diplazium esculentum</i>	Fern	LC
11	Bombacaceae	<i>Bombax ceiba</i>	Tree	LC
12	Calophyllaceae	<i>Mesua ferrea</i>	Tree	VU
13	Caricaceae	<i>Carica papaya</i>	Tree	DD

S. No.	Family	Species	Habit	Conservation Status IUCN 2021.3
14	Cycadaceae	<i>Cycas pectinata</i>	Tree	VU
15	Combretaceae	<i>Terminalia bellerica</i>	Tree	LC
16	Cupressaceae	<i>Platycladus orientalis</i> (Syn. <i>Thuja orientalis</i>)	Tree	NT
17	Euphorbiaceae	<i>Mallotus Phillipensis</i>	Tree	LC
18	Fabaceae	<i>Acacia auricorlifomis</i>	Tree	LC
19	Fabaceae	<i>Albezia procera</i>	Tree	LC
20	Fabaceae	<i>Albizia lebbek</i>	Tree	LC
21	Fabaceae	<i>Cassia abbreviata</i>	Tree	LC
22	Fabaceae	<i>Delonix regia</i>	Tree	LC
23	Fabaceae	<i>Erythrina variegata</i>	Tree	LC
24	Fabaceae	<i>Saraca asoca</i>	Tree	VU
25	Gleicheniaceae	<i>Dicranopteris linearis</i>	Fern	LC
26	Lamiaceae	<i>Gmelina arborea</i>	Tree	LC
27	Lamiaceae	<i>Vitex negundo</i>	Herb	LC
28	Lythraceae	<i>Duabanga grandiflora</i>	Tree	LC
29	Meliaceae	<i>Aglaiia spectabilis</i>	Tree	LC
30	Meliaceae	<i>Azadirachta india</i>	Tree	LC
31	Meliaceae	<i>Chukrasia tabularis</i>	Tree	LC
32	Meliaceae	<i>Toona ciliata</i>	Tree	LC
33	Moraceae	<i>Ficus bengalensis</i>	Tree	LC
34	Moraceae	<i>Ficus roxburghii</i>	Tree	LC
35	Moringaceae	<i>Moringa oleifera</i>	Tree	LC
36	Musaceae	<i>Musa acuminata</i>	Herb	LC
37	Myrtaceae	<i>Eucalyptus tereticornis</i>	Tree	LC
38	Phyllanthaceae	<i>Emblica officinalis</i>	Tree	LC
39	Poaceae	<i>Chrysopogn aciculatus</i>	Grass	LC
40	Poaceae	<i>Oplismenus compositus</i>	Grass	LC
41	Poaceae	<i>Saccharum spontaneum</i>	Grass	LC
42	Podocarpaceae	<i>Podocarpus nerifolius</i>	Tree	LC
43	Rhamnaceae	<i>Ziziphus mauritiana</i>	Tree	LC
44	Rutaceae	<i>Aegle marmelose</i>	Tree	NT
45	Rutaceae	<i>Murraya koenigii</i>	Shrub	LC
46	Sapindaceae	<i>Litchi chinensis</i>	Tree	VU
47	Solanaceae	<i>Solanum indicum</i>	Shrub	LC
48	Theaceae	<i>Schima wallichii</i>	Tree	LC

3.6.1.3 Vegetation Profile along the route of T&D Lines

During the field surveys vegetation profile of the study area i.e., areas along the transmission and distribution lines were studied. Based upon these observations the information of vegetation along the transmission/ distribution lines is discussed below:

1. LILO of Golaghat – Bokajan 132 kV S/C line at Sarupathar

Line route was going along the paddy fields.

2. LILO of Jorhat (Gormur) – Nazira 132 kV S/S on D/C at Teok

Route of the line is mainly passing through the paddy fields. The vegetation in some stretch was represented by the tree species *Lagerstroemia speciosa*, *Chukrasia tabularis* and *Areca*

catechu. *Ageratum conyzoides* was the only herb species found in the area. Bamboo species consisted of *Dendrocalamus hamiltonii* growing on the private farms of local people.

3. 33 kV line from 132/33 kV Shankardeo Nagar (existing) S/S to 33/11 kV Mailu (new) S/S

The tree species recorded along the line from 132/33 kV Shankardeo Nagar (existing) sub-station to 33/11 kV Mailu (new) sub-station were *Tectona grandis*, *Delonix regia*, *Litchi chinensis*, *Bombax ceiba*, *Cassia abbreviate*, *Albizia lebbeck*, *Ficus religiosa*, *Azadirachta indica*, *Areca catechu*, *Moringa oleifera* and *Albizia procera*. *Lantana camara* and *Ageratum conyzoides* were only shrub and herb species, respectively, found along the line. Some stretch of the line was also going along with the sugarcane and paddy fields.

4. 33 kV line from 132/33 kV Samaguri (existing) S/S to 33/11 kV Hatimurah-II (new) S/S

The line between 132/33 kV Samaguri (existing) sub-station to 33/11 kV Hatimurah-II (new) sub-station comprised mainly of tea gardens. Among tree species, *Cassia abbreviate*, *Ficus reliogosa* and *Lagerstroemia speciosa* were recorded along the line. *Maranta arundinacea* was also found as a herb species in the area.

5. 33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Teok (existing) S/S

The area between 132/33 KV Teok new sub-station to existing 33/11 KV sub-station was surveyed. Most of the area along 132/33 KV Teok new sub-station to existing 33/11 KV substation were comprised of paddy fields. Vegetation in the area along the lines was mainly represented by tree species like *Bobmax ceiba*, *Ficus roxburghii*, *Alstonia scholaris*, *Ailanthus excels*, *Duabanga grandiflora* and *Delonix regia*. *Melastoma affine* and *Chromolaena odorata* were the only shrub species occurred in the area.

6. 33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Kakojaan (existing) S/S

The lines between 33 KV Teok sub-station and 33/11 KV Kakojan sub-station comprised mainly of paddy field, private lands and tea garden. The tree species were mostly grown on private lands and in tea gardens. Vegetation along the line mainly represented by the tree species like *Ficus reliogosa*, *Tectona grandis*, *Ailanthus excelsa*, *Delonix regia*, *Acacia auriculiformis*, *Ficus bengalensis*, *Bombax ceiba*, *Moringa oleifera*, *Alstonia scholaris*, *Lagerstroemia speciosa*, *Alstonia scholaris* and *Mangifera indica*. Shrub species within the lines represented *Lantana camara* and *Chromolaena odorata*. *Musa acuminata* was the only herb species recorded along the line.

7. 33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV ZANJI (existing) S/S

The line is mostly passing through paddy fields and poles are erected on the bunds.

8. 33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Amguri (existing) S/S

The line is passing through paddy fields and some part of residential area. The poles are erected on the bunds in paddy fields.

9. 33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Barapathar (existing) S/S

The 33 KV line from 132/33 kV Sarupathar (new) sub-station to 33/11 kV Barapathar (existing) sub-station mainly represented by paddy fields and residential area. *Acacia auriculiformis*,

Actinodaphne obovata, *Dillenia pentagyna* and *Cassia abbreviate* were few tree species recorded along the line. The area was also represented by a few bamboo species like *Dendrocalamus hamiltonii* and *Bambusa balcooa*. The herbs constituted the species like *Andrographis paniculata*, *Ageratum conyzoides*, *Cyanthillium cinereum* and *Acalypha indica*.

10. 33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Sarupathar (existing) S/S

The area along the line between 132/33 kV Sarupathar (new) sub-station to 33/11 kV Sarupathar (existing) sub-station comprised mainly of paddy fields, private lands and tea gardens. The tree species recorded along the line are: *Cassia abbreviate*, *Areca catechu*, *Acacia auriculiformis*, *Phoenix dactylifera*, *Terminalia arjuna* and *Ziziphus mauritiana*. *Lantana camara* and *Vitex negundo* represented the shrub species of the area. *Ageratum conyzoides* and *Aerva lanata* was only herb species found along the line. Bamboo species along the route was mainly represented by *Dendrocalamus hamiltonii*.

11. 33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Sariahjan (existing) S/S

The line from 132/33 kV Sarupathar (new) sub-station to 33/11 kV Sariahjan (existing) sub-station was going along the paddy fields and roadsides. The vegetation along the line was represented by the tree species like *Areca catechu*, *Delonix regia*, *Lagerstroemia speciosa* & *Chukrasia tabularis*; shrub species like *Desmodium cephalotes* and *Lantana camara*; herb and grasses like *Xanthium strumarium*, *Vernonia cinera*, *Musa acuminata* and *Sachharum spontaneum*.

3.6.1.4 Economically Important Plant Species

Forest and forest products are integral part of the people in the area. Along with the cultivated crops, people of the area also use wild plants as fodder, fuel wood, fibre, timber, vegetables, fruits, medicine, and various minor forest products. According to Agro-Ecological Sub Region (ICAR) classification, the study area falls under North-Eastern Hills (Purvachal), Warm Perhumid Eco-Region. (17.1) Assam and Bengal Plain, Hot Subhumid to Humid (Inclusion of Perhumid) Eco-Region (15.2). As per the Agro Climatic Zone (NARP) and Agro Climatic zone classification of the Planning Commission it falls in Eastern Himalayan Division.

Major food crops are Rice, Maize soybean, and rapeseed/mustard are main crops cultivated. Potato, Ginger, Turmeric, Black Pepper, Areca nut, and Ginger, etc. are some of the important cash crops in the study area. Besides food crops, the state is also renowned for its horticultural crops like Orange, Lemon, and Pineapple.

Medicinal Plants

Plant species are used for various medicinal purposes for treating various ailments by local tribals. In order to collect the information on medicinal plants used in the area, published literature on ethnomedicinal plants of the region by Das et al. (2008), Sarkar and Devi (2017), Gogoi and Nath (2021) were consulted.

Based upon the studies quoted above and information gathered during interaction with local people while conducting field surveys a list of important medicinal plant species used for treating various ailments was prepared and the same is given in **Table 3.7**.

Table 3.7: Plant Species Used for Medicinal Purposes in the Study Area

S. No.	Species Name	Common Name	Family	Parts Used	Disease/ailment treated
1	<i>Acacia auricorlifomis</i>	Australian Babool	Fabaceae	Entire plant	Diuretic
2	<i>Achyranthes aspera</i>	chaff-flower	Amaranthaceae	Stem and leaf	Jaundice and also used in menstruation trouble
3	<i>Adhatoda vesica</i>	Malabar nut	Acanthaceae	Leaves & flower	Cough, fever, dysentery
4	<i>Aegle marmelose</i>	Bel	Rutaceae	Leaves and Fruit	Leaf Juice with black pepper is used to get relief form piles.
5	<i>Ageratum conyzoides</i>	Billygoat weed	Asteraceae	Leaves, roots	Leaves in cuts & sores; roots anthelmintic, anti- allergic
6	<i>Albizia lebbeck</i>	Siris	Fabaceae	Leaves, seeds	Improves womb weakness
7	<i>Alstonia scholaris</i>	Saptparni	Apocynaceae	Stem, Bark	Toothache, Malaria
8	<i>Azadirachta india</i>	Neem	Meliaceae	Leaves	Heart problems
9	<i>Bombax ceiba</i>	Semal	Bombacaceae	Seed	Liver and stomach trouble
10	<i>Carica papaya</i>	Papaya	Caricaceae	Whole plant	Fruit used in dysentery; Flower in ear trouble; Leaf is used against toothache; seeds are used fro deworming
11	<i>Chromolaena odorata</i>	Devil weed	Asteraceae	Leaves	Cuts, wounds
12	<i>Colocasia esculenta</i>	Pindalu	Araceae	Leaves, stem, rhizome	Vermifuge, laxative
13	<i>Delonix regia</i>	Gulmohar	Fabaceae	Bark	Cough
14	<i>Emblica officinalis</i>		Phyllanthaceae	Fruits	Cough; source of vitamin improving eye sight
15	<i>Ficus bengalensis</i>	Banyan Tree	Moraceae	Leaves, Bark and Latex	Rheumatism, diarrhoea, dysentery, diabetes;
16	<i>Gmelina arborea</i>		Lamiaceae	Leaves	wound-healing and antidiarrheal properties
17	<i>Lantana camara</i>	Lantana	Verbenaceae	Leaves	Tetanus; insect repellent
18	<i>Mangifera indica</i>	Mango	Anacardiaceae	Leaves	Jaundice, stomach ache
19	<i>Mesua ferrea</i>	Ceylon ironwood	Calophyllaceae	Bark	Fever, vomiting, urinary tract disorders, migraine
20	<i>Moringa oleifera</i>	Drumstick	Moringaceae	Whole plant	Reducing rheumatic pain
21	<i>Murraya koenigii</i>	Kari Patta	Rutaceae	Leaves	Anemia, stomachic, arthritis, piles
22	<i>Musa acuminata</i>	Banana	Musaceae	Fruit & Flower	Dysentery
23	<i>Terminalia bellerica</i>	Bahera	Combretaceae	Fruit	Protect the liver and to treat respiratory conditions
24	<i>Toona ciliata</i>	Toon	Meliaceae	Leaves	Skin diseases & poxes
25	<i>Vitex negundo</i>	five-leaved chaste tree	Lamiaceae	Leaves	Reduce rheumatic pain
26	<i>Ziziphus mauritiana</i>	Ber	Rhamnaceae	Fruits	Pneumonia, fever, cough, Toothache, piles

Wild Edible Plants

List of wild edible plants used by villagers in the study area was prepared with consultation of published literature by Nath (2015); Dutta et al (2017); Komor and Devi, Assam State Biodiversity Board (2016) and the same is given at **Table 3.8**.

Table 3.8: Wild Edible Plant Species Used by Tribes in the Study Area

S. No.	Name of species	Family	Common Name	Parts used
1	<i>Acalypha indica</i>	Euphorbiaceae	Indian acalypha	shoots and leaves
2	<i>Achyranthes aspera</i>	Amaranthaceae	chaff-flower	Leaves
3	<i>Adhatoda vesica</i>	Acanthaceae	Malabar nut	Flowers
4	<i>Aegle marmelose</i>	Rutaceae	Bel	Fruit
5	<i>Aerva lanata</i>	Amaranthaceae	The mountain knotgrass	Leaves
6	<i>Agave cantala</i>	Agavaceae	Bombay Aloe	Stem
7	<i>Amaranthus viridis</i>	Amaranthaceae	Green amaranth / Khutura	Tender shoots
8	<i>Areca catechu</i>	Arecaceae	Areca Palm	Nut, Seed
9	<i>Artocarpus chama</i>	Moraceae	Jackfruit	Fruit
10	<i>Bambusa balcooa</i>	Poaceae	Bhaluka bamboo	Tender shoots
11	<i>Bambusa cacharensis</i>	Poaceae	Bamboo	Tender shoots
12	<i>Bambusa tulda</i>	Poaceae	Jati Bamboo	Tender shoots
13	<i>Bombax ceiba</i>	Bombacaceae	Semal	Flowers, fleshy calyx
14	<i>Carica papaya</i>	Caricaceae	Papaya	Fruit
15	<i>Colocasia esculenta</i>	Araceae	Pindalu	Leaves, Rhizomes
16	<i>Crassocephalum crepidioides</i>	Asteraceae	Ebolo	Leaves
17	<i>Dendrocalamus hamiltonii</i>	Poaceae	Koko bamboo	Young shoots
18	<i>Emblica officinalis</i>	Phyllanthaceae	Amla	Fruits
19	<i>Erythrina variegata</i>	Fabaceae	Indian Coral Tree	Young leaves and sproutes
20	<i>Ficus religiosa</i>	Moraceae	Pipal	Fruits
21	<i>Ficus roxburghii</i>	Moraceae	Fig tree	Fruits
22	<i>Gmelina arborea</i>	Lamiaceae	Beechwood	Fruits and Flower
23	<i>Litchi chinensis</i>	Sapindaceae	Litchi	Fruit
24	<i>Mangifera indica</i>	Anacardiaceae	Mango	Fruit
25	<i>Murraya koenigii</i>	Rutaceae	Kari Patta	Leaves
26	<i>Musa acuminata</i>	Musaceae	Banana	Fruit
27	<i>Phoenix dactylifera</i>	Arecaceae	Date Palm	Fruit
28	<i>Scoparia dulcis</i>	Plantaginaceae	Goatweed	Leaves
29	<i>Solanum indicum</i>	Solanaceae	Bari kateri	Fruits
30	<i>Vitex negundo</i>	Lamiaceae	five-leaved chaste tree	Leaves
31	<i>Xanthium strumarium</i>	Asteraceae	rough cocklebur	Young shoots
32	<i>Ziziphus mauritiana</i>	Rhamnaceae	Ber	Fruits

Timber yielding Tree species

A total number of 17 timber yielding tree species were found in the study area, illustrated in **Table 3.9**.

Table 3.9: Important Timber Yielding Tree Species

S. No.	Species Name	Family
1	<i>Aglaia spectabili</i>	Meliaceae
2	<i>Ailanthus excelsa</i>	Simaroubaceae
3	<i>Albezia chinensis</i>	Fabaceae
4	<i>Albezia procera</i>	Fabaceae
5	<i>Albizia lebbeck</i>	Fabaceae
6	<i>Alstonia scholaris</i>	Apocynaceae
7	<i>Areca catechu</i>	Arecaceae
8	<i>Duabanga grandiflora</i>	Lythraceae
9	<i>Ficus bengalensis</i>	Moraceae
10	<i>Gmelina arborea</i>	Lamiaceae
11	<i>Lagerstroemia speciosa</i>	Lyrthaceae
12	<i>Mangifera indica</i>	Anacardiaceae
13	<i>Mesua ferrea</i>	Calophyllaceae
14	<i>Phoenix dactylifera</i>	Arecaceae
15	<i>Tectona grandis</i>	Lamiaceae
16	<i>Terminalia arjuna</i>	Combretaceae
17	<i>Toona ciliata</i>	Meliaceae

3.6.2 Faunal Elements

Assam harbors a variety of wildlife distributed throughout the state due to the forest as well as extensive network of river systems and swamps, marshes and wetlands which provide ideal conditions and suitable habitat for sustenance of wide variety of fauna. The fauna of the state has been compiled with the help of secondary sources. Data was compiled from published literatures.

For management and preservation of wildlife in the State, the Department of Forests, Environment & Ecology and Wildlife has a full-fledged wildlife Wing under the Chief Wildlife Warden.

3.6.2.1 Mammals

As per the data compiled, 50 species of mammals belonging 20 families of 9 orders are reported from the districts belonging to study area.

As per the International Union for Conservation of Nature (IUCN) Red List of Threatened Species, 2021.3, 1 species is Critically Endangered (CR), 9 species are in Endangered (EN) category, 3 species are in Near Threatened (NT) category, 13 species are in Vulnerable (VU) category, 23 species are in Least Concerned (LC) category and 1 species is in Data deficient (DD) category. List of important mammals found in the districts belonging to study area along with their conservation status is given in **Table 3.10**. The classification and nomenclature of mammals is as per <https://www.iucnredlist.org/>.

Table 3.10: List of Mammals

S. No.	Order/ Family	Scientific Name	Common Name	Conservation Status (IUCN 2021.3)
Order- Cetartiodactyla				
1	Bovidae	<i>Bos gaurus</i>	Gaur	VU
2	Bovidae	<i>Bubalus arnee arnee</i>	Wild Asiatic Water Buffalo	EN
3	Cervidae	<i>Muntiacus muntjak</i>	Barking Deer	LC
4	Cervidae	<i>Rucervus duvaucelii</i>	Eastern Swamp Deer	VU
5	Cervidae	<i>Axis porcinus</i>	Hog Deer	EN
6	Cervidae	<i>Muntiacus vaginalis</i>	Indian Muntjac	LC
7	Cervidae	<i>Rusa unicolor</i>	Sambar	VU
8	Suidae	<i>Porcula salvania</i>	Pigmy Hog	EN
9	Suidae	<i>Sus scrofa</i>	Indian Wild Boar	LC
Order-Carnivora				
10	Felidae	<i>Neofelis nebulosa</i>	Clouded Leopard	VU
11	Felidae	<i>Prionailurus viverrinus</i>	Fishing Cat	VU
12	Felidae	<i>Pardofelis temminckii</i>	Golden Cat	NT
13	Felidae	<i>Felis chaus</i>	Jungle Cat	LC
14	Felidae	<i>Panthera pardus</i>	Leopard	VU
15	Felidae	<i>Prionailurus bengalensis</i>	Leopard Cat	LC
16	Felidae	<i>Pardofelis marmorata</i>	Marbled cat	NT
17	Felidae	<i>Panthera tigris</i>	Tiger	EN
18	Viverridae	<i>Arctictis binturong</i>	Binturong	VU
19	Viverridae	<i>Paradoxurus hermaphroditus</i>	Common Palm Civet	LC
20	Viverridae	<i>Paguma larvata</i>	Himalayan Palm Civet	LC
21	Viverridae	<i>Viverra zibetha</i>	Large Indian Civet	LC
22	Viverridae	<i>Viverricula indica</i>	Small Indian Civets	LC
23	Herpestidae	<i>Urva urva urva</i>	Crab eating mongoose	LC
24	Herpestidae	<i>Herpestes edwardsii</i>	Indian Gray Mongoose	LC
25	Herpestidae	<i>Herpestes javanicus</i>	Small Indian Mongooses	LC
26	Canidae	<i>Vulpes bengalensis</i>	Bengal Fox	LC
27	Canidae	<i>Canis aureus</i>	Golden Jackal	LC
28	Canidae	<i>Cuon alpinus</i>	Wild Dog (Dhole)	EN
29	Ursidae	<i>Ursus thibetanus thibetanus</i>	Himalayan Black Bear	VU
30	Ursidae	<i>Melursus ursinus ursinus</i>	Sloth Bear	VU
31	Mustelidae	<i>Arctonyx collaris</i>	Hog Badger	VU
32	Mustilidae	<i>Melogale personata</i>	Burmese Ferret Badger	LC
33	Mustilidae	<i>Melogale moschata</i>	Chinese Ferret Badgers	LC
34	Mustilidae	<i>Martes foina toufoeus</i>	Stone marlin	LC
35	Prionodontidae	<i>Prionodon pardicolor</i>	Spotted linsang	LC
Order-Pholidota				
36	Manidae	<i>Manis pentadactyla</i>	Chinese Pangolin	CR
37	Manidae	<i>Manis crassicaudata</i>	Indian Pangolins	EN
Order-Primates				
38	Cercopithecidae	<i>Macaca assamensis</i>	Assamese Macaque	NT
39	Cercopithecidae	<i>Macaca mulatta</i>	Rhesus Macaque	LC
40	Cercopithecidae	<i>Trachypithecus pileatus</i>	Capped Langur	VU
41	Hylobatidae	<i>Hoolock hoolock</i>	Western Hoolock Gibbon	VU
Order-Rodentia				
42	Sciuridae	<i>Hylopetes alboniger</i>	Parti-coloured Flying Squirrel	LC
43	Sciuridae	<i>Belomys pearsonii</i>	Hairy-footed Flying Squirrel	DD

S. No.	Order/ Family	Scientific Name	Common Name	Conservation Status (IUCN 2021.3)
44	Hystriidae	<i>Atherurus macrourus</i>	Asiatic Brush-Tailed Porcupine	LC
45	Spalacidae	<i>Cannomys badius</i>	Bay bamboo rat	LC
46	Spalacidae	<i>Rhizomys pruinosus</i>	Hoary bamboo rat	LC
Order-Lagomorpha				
47	Leporidae	<i>Caprolagus hispidus</i>	Hispid Hare (rare)	EN
Order-Artiodactyla				
48	Platanistidae	<i>Platanista gangetica gangetica</i>	Gangetic Dolphin	EN
Order-Perissodactyla				
49	Rhinocerotidae	<i>Rhinoceros unicornis</i>	Great Indian One-Horned Rhinoceros	VU
Order-Proboscidea				
50	Elephantidae	<i>Elephas maximus indicus</i>	Asian Elephant	EN

Source: http://asmenvi.nic.in/database/animal_diversity_844.aspx

Talukdar et al. (2021): Mammals of Northeastern India: An updated checklist. *Journal of Threatened Taxa*, 13(4): 18059–18098, <https://doi.org/10.11609/jott.6010.13.4.18059-18098>

3.6.2.2 Avifauna

As per the data compiled, 54 species of avifauna belonging to 29 families of 11 orders are reported from the districts falling within study area. As per the IUCN Red List of Threatened species, 2021.3, all other bird species reported from the study area fall under the Least Concern category of IUCN. List of important avifauna found in the districts belonging to study area along with their conservation status is given in **Table 3.11**.

Table 3.11: List of Avifauna

S. No.	Order/ Family	Scientific Name	Common Name	Conservation Status (IUCN 2021.3)
Apodiformes				
1	Apodidae	<i>Aerodramus brevirostris</i>	Himalayan Swiftlet	LC
2	Apodidae	<i>Apus affinis</i>	House Swift	LC
3	Apodidae	<i>Apus affinis</i>	House Swift	LC
Charadriiformes				
4	Charadriidae	<i>Vanellus indicus</i>	Red-wattled Lapwing	LC
Columbiformes				
5	Columbidae	<i>Chalcophaps indica</i>	Emerald Dove	LC
6	Columbidae	<i>Columba livia</i>	Rock Pigeon	LC
7	Columbidae	<i>Streptopelia chinensis</i>	Spotted Dove	LC
8	Columbidae	<i>Streptopelia orientalis</i>	Oriental Turtle Dove	LC
9	Columbidae	<i>Treron apicauda</i>	Pintailed Green Pigeon	LC
Coraciiformes				
10	Alcedinidae	<i>Alcedo atthis</i>	Common Kingfisher	LC
11	Alcedinidae	<i>Halcyon smyrnensis</i>	White-throated Kingfisher	LC
12	Coraciidae	<i>Coracias benghalensis</i>	Indian Roller	LC
13	Meropidae	<i>Merops orientalis</i>	Green Bee-eater	LC
Cuculiformes				
14	Cuculidae	<i>Phaenicophaeus tristis</i>	Green-billed Malkoha	LC
15	Cuculidae	<i>Eudynamis scolopaceus</i>	Asian Koel	LC
Galliformes				
16	Phasianidae	<i>Gallus gallus</i>	Red Jungle Fowl	LC

S. No.	Order/ Family	Scientific Name	Common Name	Conservation Status (IUCN 2021.3)
	Passeriformes			
17	Campephagidae	<i>Pericrocotus ethologus</i>	Long-tailed Minivet	LC
18	Corvidae	<i>Cissa chinensis</i>	Green Magpie	LC
19	Corvidae	<i>Corvus macrorhynchos</i>	Large-billed Crow	LC
20	Corvidae	<i>Urocissa flavirostris</i>	Yellow-billed Blue magpie	LC
21	Dicaeidae	<i>Dicaeum cruentatum</i>	Scarlet-backed flowerpecker	LC
22	Dicruridae	<i>Dicrurus macrocercus</i>	Black Drongo	LC
23	Lanidae	<i>Lanius schach</i>	Grey Backed Shrike	LC
24	Leiothrichidae	<i>Turdoides striata</i>	Jungle Babbler	LC
25	Motacillidae	<i>Dendronanthus indicus</i>	Forest Wagtail	LC
26	Muscicapidae	<i>Chaimarrornis leucocephalus</i>	White-capped Water-redstart	LC
27	Muscicapidae	<i>Cyornis concretus</i>	White-tailed Flycatcher	LC
28	Muscicapidae	<i>Cyornis rubeculoides</i>	Blue-throated Flycatcher	LC
29	Muscicapidae	<i>Enicurus immaculatus</i>	Black-backed Forktail	LC
30	Muscicapidae	<i>Monticola cinclorhynchus</i>	Blue caped rock thrush	LC
31	Muscicapidae	<i>Rhyacornis fuliginosus</i>	Plumbeous Water Redstart	LC
32	Muscicapidae	<i>Saxicoloides fulicata</i>	Indian Robin	LC
33	Muscicapidae	<i>Saxicola maurus</i>	Siberian stonechat	LC
34	Nectariniidae	<i>Cinnyris asiaticus</i>	Purple Sunbird	LC
35	Passeridae	<i>Motacilla alba</i>	White wagtail	LC
36	Passeridae	<i>Passer domesticus</i>	House sparrow	LC
37	Passeridae	<i>Passer montanus</i>	Eurasian Tree Sparrow	LC
38	Phylloscopidae	<i>Phylloscopus fuscatus</i>	Dusky Warbler	LC
39	Ploceidae	<i>Ploceus philippinus</i>	Baya weaver	LC
40	Pycnonotidae	<i>Pycnonotus cafer</i>	Red Vented Bulbul	LC
41	Rhipiduridae	<i>Rhipidura aureola</i>	White brown fantail	LC
42	Sturnidae	<i>Sturnia malabarica</i>	Chestnut tailed starling	LC
43	Sturnidae	<i>Acridotheres fuscus</i>	Jungle myna	LC
44	Sturnidae	<i>Acridotheres tristis</i>	Common Myna	LC
	Pelecaniformes			
45	Ardeidae	<i>Bubulcus ibis</i>	Cattle egret	LC
46	Ardeidae	<i>Ardea alba</i>	Great egret	LC
47	Phalacrocoracidae	<i>Phalacrocorax fuscicollis</i>	Indian Cormorant	LC
	Piciformes			
48	Picidae	<i>Dendrocopos macei</i>	Fulvous breasted Woodpecker	LC
49	Picidae	<i>Sasia ochracea</i>	White browed piculet	LC
50	Ramphastidae	<i>Psilopogon asiaticus</i>	Blue throated barbet	LC
51	Megalaimidae	<i>Psilopogon lineatus</i>	Lineated barbet	LC
	Psittaciformes			
52	Psittaculidae	<i>Psittacula alexandri</i>	Red breasted parakeet	LC
	Strigiformes			
53	Strigidae	<i>Athene brama</i>	Spotted Owlet	LC
54	Strigidae	<i>Strix leptogrammica</i>	Brown wood owl	LC

Source: Field Survey; Devi et al (2014); <https://avibase.bsc-eoc.org/checklist.jsp?region=INneml&list=howardmoore;>
<https://ebird.org/region/IN-ML>

3.6.2.3 Butterflies

As per the data compiled, 29 species of butterflies belonging 6 families are reported from the districts belonging to study area. Of which, 12 species belong to Nymphalidae family,

Lycaenidae by 6 species, Pieridae by 5 species and Hesperidae family were represented by 3 species. List of butterflies found in the districts belonging to study area is given in **Table 3.12**.

Table 3.12: List of Butterflies

S. No.	Family	Scientific Name	Common Name
1	Nymphalidae	<i>Junonia atlites atlites</i>	Grey Pansy
2	Nymphalidae	<i>Paltoporia paraka paraka</i>	Perak Lascar
3	Nymphalidae	<i>Ypthima baldus</i>	Common Five ring
4	Nymphalidae	<i>Mycalesis perseus blasius</i>	Common Brushbrown
5	Nymphalidae	<i>Tanaecia lepidea lepidea</i>	Grey Count
6	Nymphalidae	<i>Cirrochroa aoris aoris</i>	Large Yeoman
7	Nymphalidae	<i>Lethe mekara</i>	Common Red forester
8	Nymphalidae	<i>Danaus genutia</i>	Striped Tiger
9	Nymphalidae	<i>Neptis hylas varmona</i>	Common Sailor
10	Nymphalidae	<i>Phalanta phalantha</i>	Common Leopard
11	Nymphalidae	<i>Acraea terpsicore</i>	Tawny Coaster
12	Nymphalidae	<i>Melanitis leda leda</i>	Common Evening brown
13	Lycaenidae	<i>Castalius rosimon</i>	Common Pierrot
14	Lycaenidae	<i>Arhopala rama rama</i>	Dark Himalayan oak blue
15	Lycaenidae	<i>Surendra quercetorum quercetorum</i>	Common Acacia blue
16	Lycaenidae	<i>Catochrysops strabo</i>	Forget me-not
17	Lycaenidae	<i>Zizeeria karsandra</i>	Dark Grass blue
18	Lycaenidae	<i>Pseudozizeeria maha maha</i>	Pale Grass blue
19	Riodinidae	<i>Abisara echerius suffusa</i>	Plum Judy
20	Pieridae	<i>Leptosia nina nina</i>	Psyche
21	Pieridae	<i>Eurema hecabe hecabe</i>	Common Grass yellow
22	Pieridae	<i>Delias descombesi descombesi</i>	Red spot Jezebel
23	Pieridae	<i>Pieris canidia indica</i>	Indian Cabbage white
24	Pieridae	<i>Catopsilia pomona</i>	Common Emigrant
25	Papilionidae	<i>Papilo demoleus demoleus</i>	Lime swallow tail
26	Papilionidae	<i>Graphium agamemnon agamemnon</i>	Tailed jay
27	Hesperidae	<i>Tagiades japetus rav</i>	Common Snow flat
28	Hesperidae	<i>Matapa aria</i>	Common Red eye
29	Hesperidae	<i>Artiopterus jama olivascens</i>	Forest Hopper

Source: Field Survey; Buragohain et al. (2018). A preliminary checklist of butterfly diversity in the vicinity of IIT Guwahati Campus, Guwahati, Assam, India. *Journal of Entomology and Zoology Studies*, 6(3): 1845-1852

3.6.3 Protected Areas

The Protected Area (PA) network in Assam occupies 4069.25 km² area, which constitute about 5.19% of the state's geographical area. The Protected Area Network includes 5 National Park (NP) and 20 Wildlife Sanctuaries (WLS). The State has four Tiger Reserves (TR) namely Kaziranga, Manas, Orang and Nameri. Manas TR has also been declared as a Biosphere Reserve (BR), the other BR of the state is Dibru Saikhowa WLS. Kaziranga NP and Manas WLS are also included in the World Heritage sites. Out of these, 9 protected areas i.e. Kaziranga NP, Nambor - Doigrung WLS, Hollongapar Gibbon WLS, Laokhowa WLS, Panidehing WLS, Garampani WLS, East Karbi Anglong WLS, Marat Longri WLS and Nambor WLS falls in district belonging to study area. In addition, North Karbi Anglong WLS has also been proposed by the state govt. in Karbi Anglong district. However, **the proposed transmission and distribution lines do not pass through this protected area.** In the instant scheme, all such areas are

completely avoided through careful route selection. Details of the protected area is presented below in **Table 3.13**. Map showing location of protected areas w.r.t sub project location in the Golaghat, Nagaon, Jorhat, Sibsagar and Karbi Anglong districts is given at **Figure 3.1** and **Figure 3.5** respectively.

Table 3.13: Protected Area Network in Districts Belonging to Study Area

S. No.	Protected Areas	District	Area (km ²)	Year of Notification	ESZ Area (km ²)	Year of ESZ Notification
1	Kaziranga National Park	Golaghat & Nagaon	858.98	1974	Not Applicable	
2	Nambor - Doigrung Wildlife Sanctuary	Golaghat	97.15	2003	Yet to be finalized	
3	Hollongapar Gibbon Wildlife Sanctuary	Jorhat	20.99	1997	264.62	2019
4	Laokhowa Wildlife Sanctuary	Nagaon	70.13	1979	Yet to be finalized	
5	Panidehing Wildlife Sanctuary	Sibsagar	33.93	1999	Yet to be finalized	
6	Garampani Wildlife Sanctuary	Karbi Anglong	6.05	Data Not Available		
7	East Karbi Anglong Wildlife Sanctuary	Karbi Anglong	221.81	2000	Yet to be finalized	
8	Marat Longri Wildlife Sanctuary	Karbi Anglong	451.00	2003	Yet to be finalized	
9	Nambor Wildlife Sanctuary	Karbi Anglong	37.00	2000	Yet to be finalized	
10	North Karbi Anglong Wildlife Sanctuary (Proposed)	Karbi Anglong	Data Not Available			

Source: <https://moef.gov.in/en/rules-and-regulations/esz-notifications-2/>

From the map given at **Figure 3.1** it is evident that the nearest protected area to any of the sub project in Golaghat district is Nambor - Doigrung WLS. The nearest component of the sub project to the Nambor - Doigrung WLS is the existing 33/11 kV Barapathar substation, the aerial distance of the substation from the boundary of WLS is approx. 6.5 km (refer **Figure 3.6**). Similarly, from the map given at **Figure 3.2** it is evident that the nearest protected area to any of the sub project in Nagaon district is Laokhowa WLS. The nearest component of the sub project to the IBA is the Pole No AP-6 of the 33 kV line from 220/132 kV Samaguri substation to the 33/11 kV Hatimurah-II substation. The aerial distance of the Pole from the boundary of IBA is approx. 10.6 km (refer **Figure 3.7**).

From the map given at **Figure 3.3** it is evident that the nearest component of the sub project to the only protected area in the Jorhat district i.e. Hollongapar Gibbon WLS is the existing 33/11 kV Kakojan substation, the aerial distance of the substation from the boundary of WLS is approx. 8.4 km. Similarly, from the map given at **Figure 3.4** it is evident that the nearest component of the sub project to the only protected area in the Sibsagar district i.e. Panidehing WLS is the existing 33/11 kV Zanzi substation, the aerial distance of the substation from the boundary of WLS is approx. 23.20 km.

From the map given at **Figure 3.5** it is evident that the nearest protected area to any of the sub project in Karbi Anglong district is Marat Longri WLS. The nearest component of the sub project to the Marat Longri WLS is the existing 33/11 kV Sariahjan substation, the aerial distance of the substation from the boundary of WLS is approx. 43.72 km (refer **Figure 3.8**).

In view of above, it is concluded that there will not be any impact of any magnitude on the PA as the proposed subprojects are located far away from the PA.

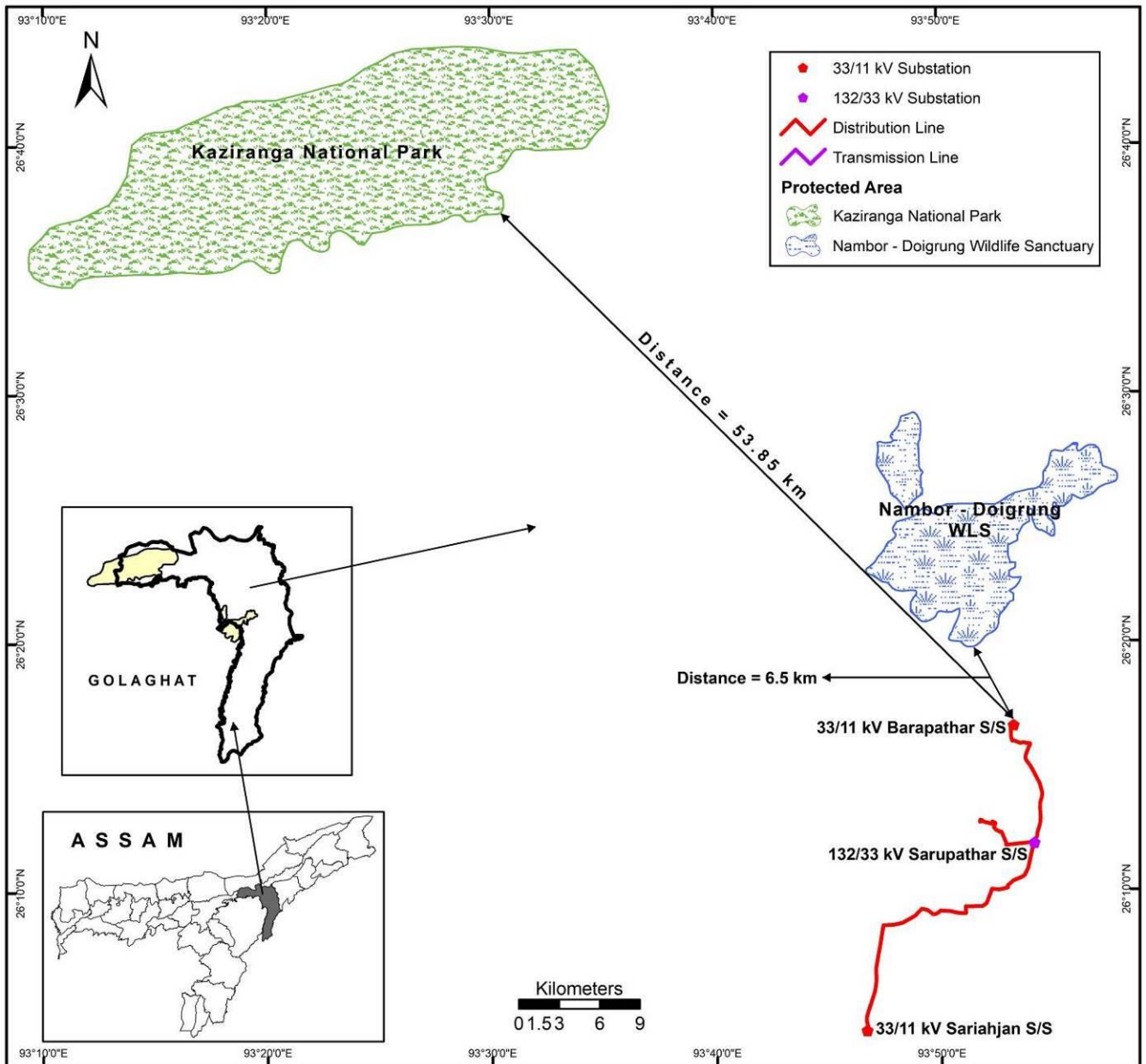


Figure 3.1: Map Showing Protected Area w.r.t. Sub Project Locations in Golaghat District

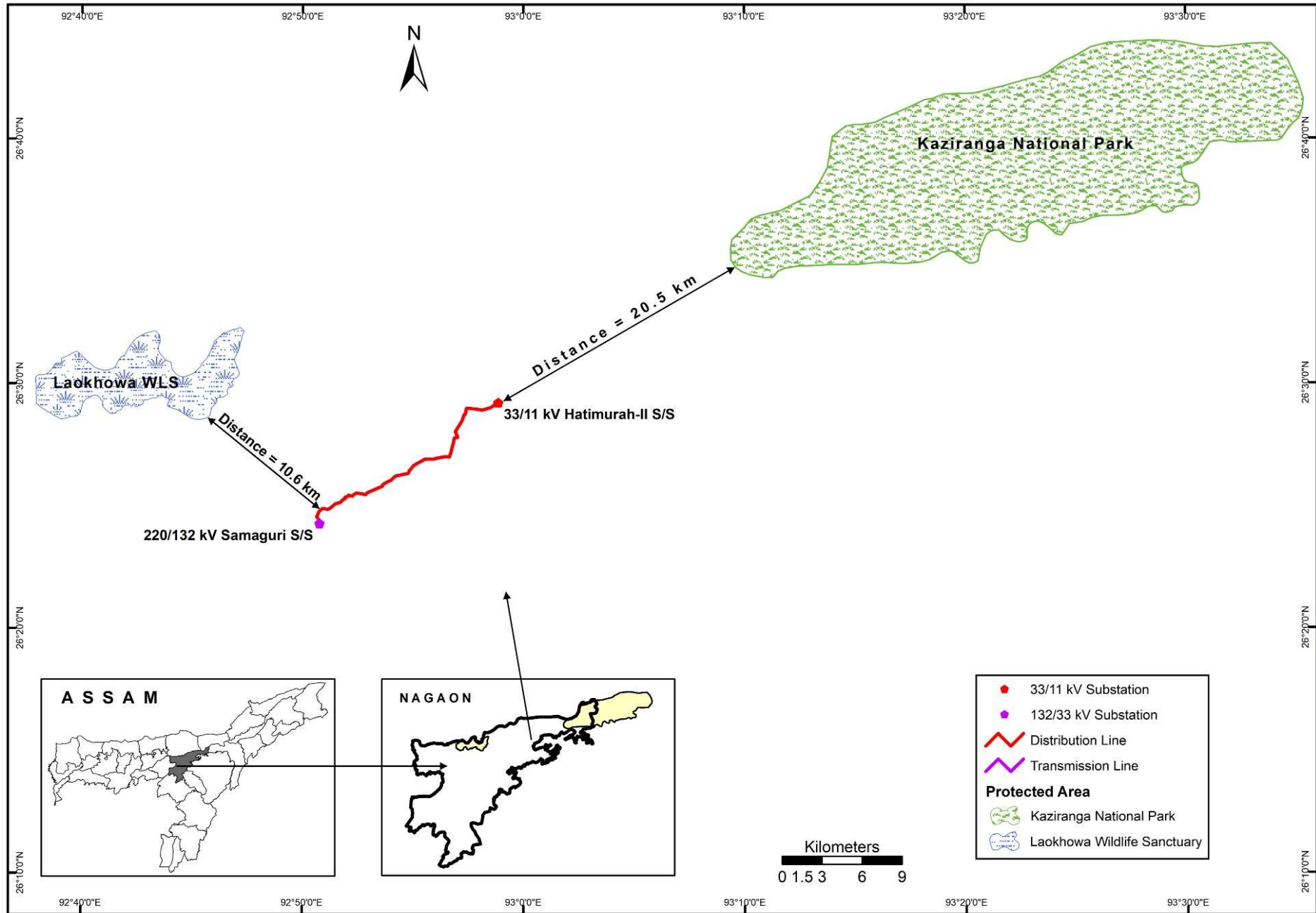


Figure 3.2: Map Showing Protected Area w.r.t. Sub Project Locations in Nagaon District

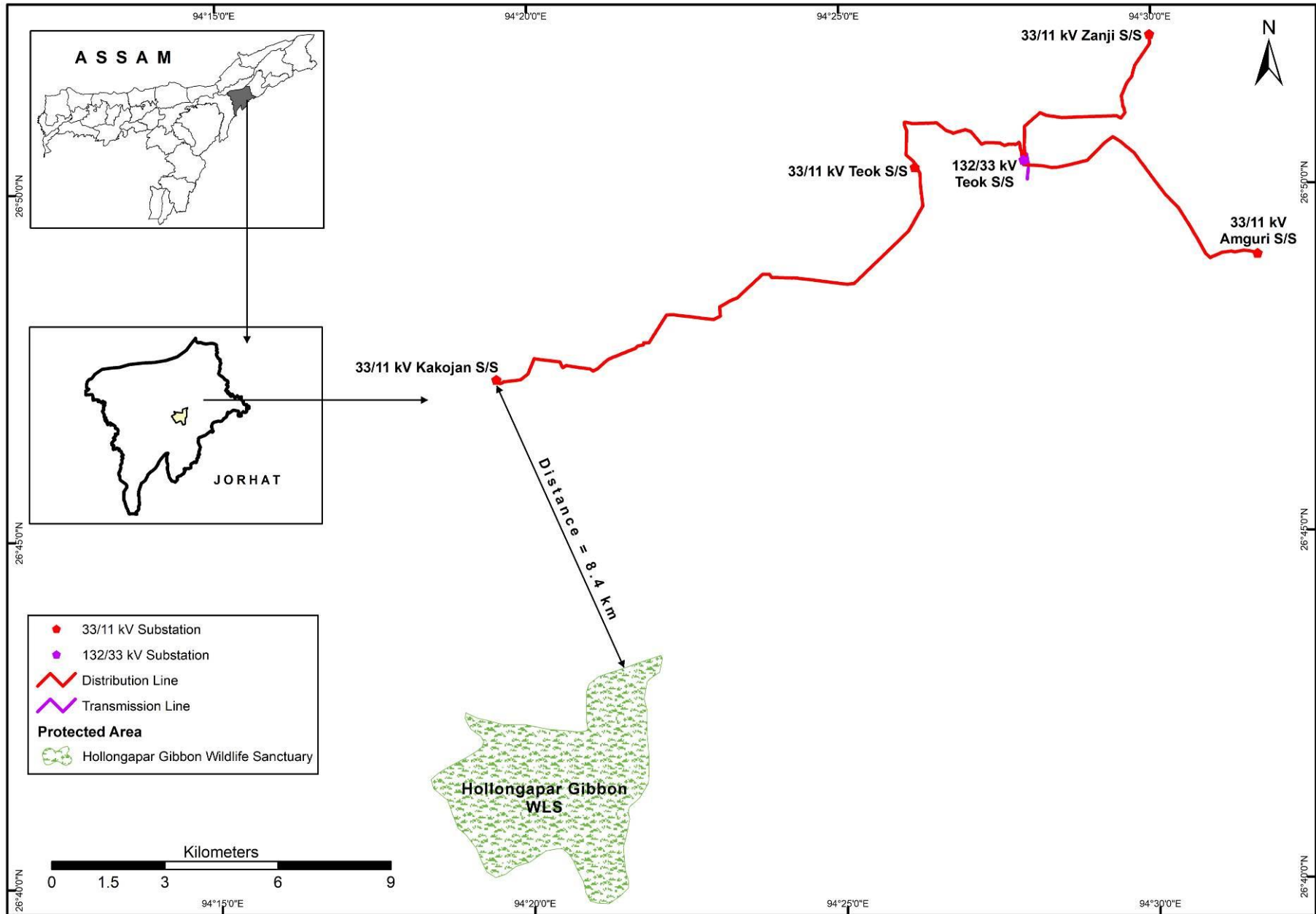


Figure 3.3: Map Showing Protected Area w.r.t. Sub Project Locations in Jorhat District

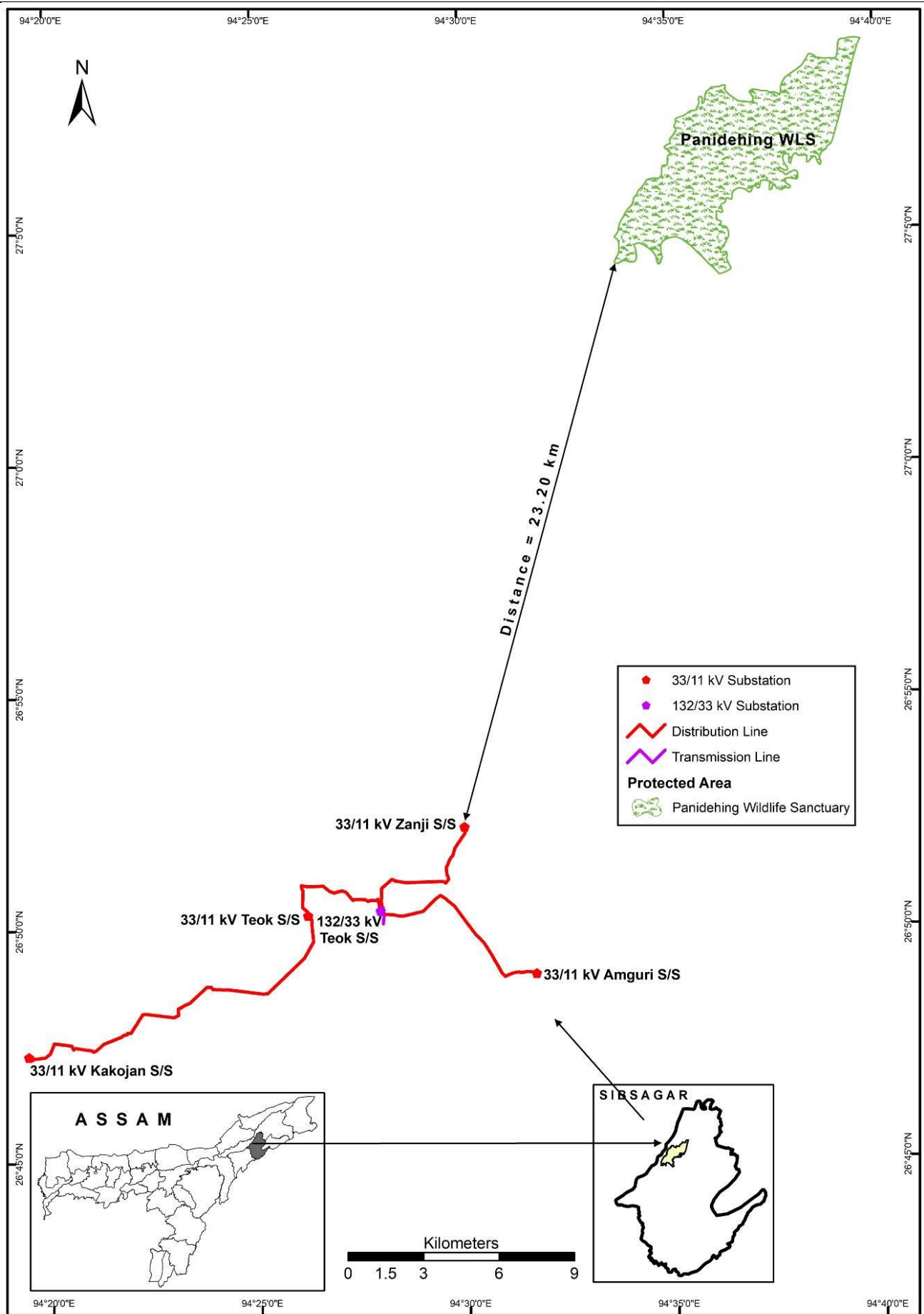


Figure 3.4: Map Showing Protected Area w.r.t. Sub Project Locations in Sibsagar District

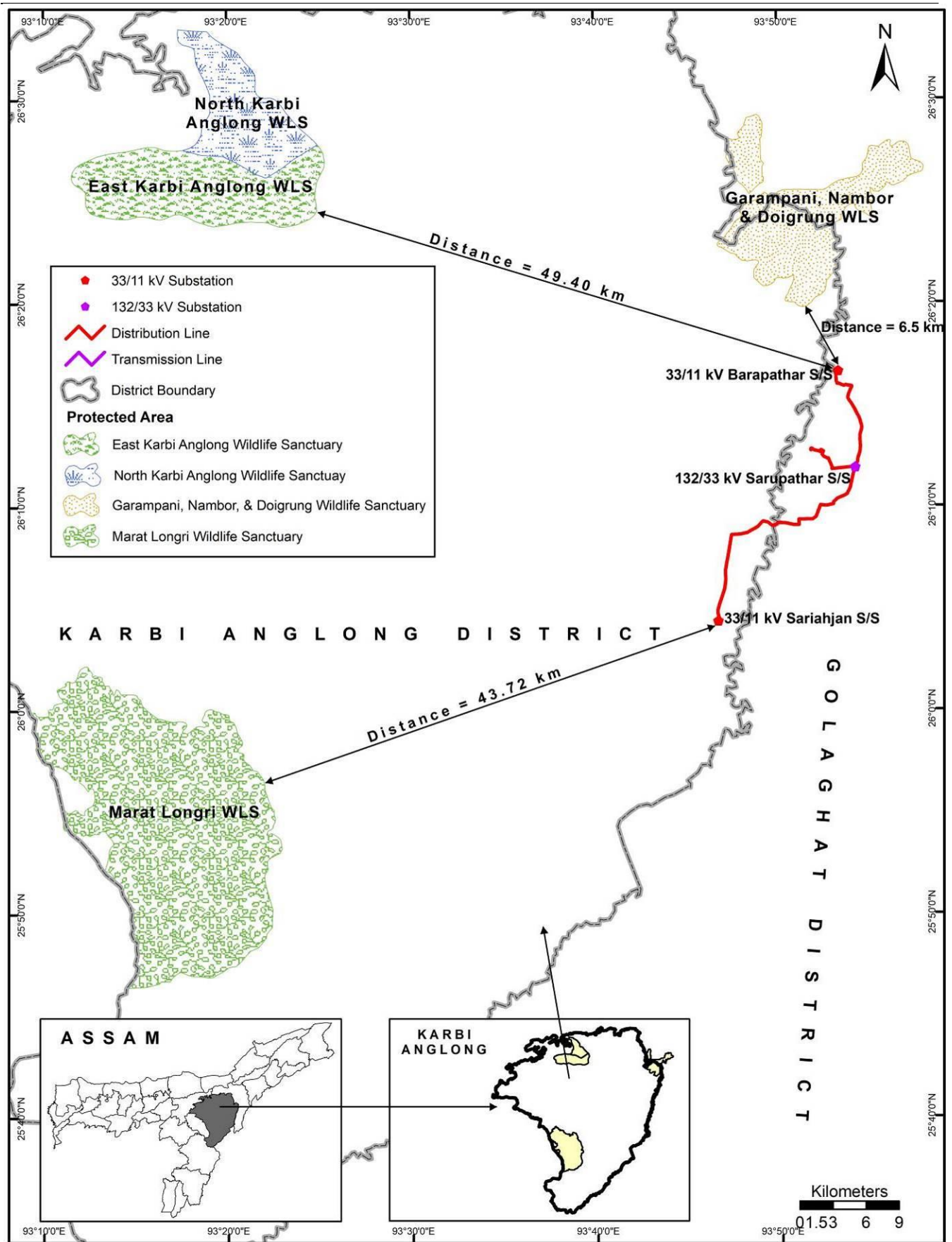


Figure 3.5: Map Showing Protected Area w.r.t. Sub Project Locations in Karbi Anglong District

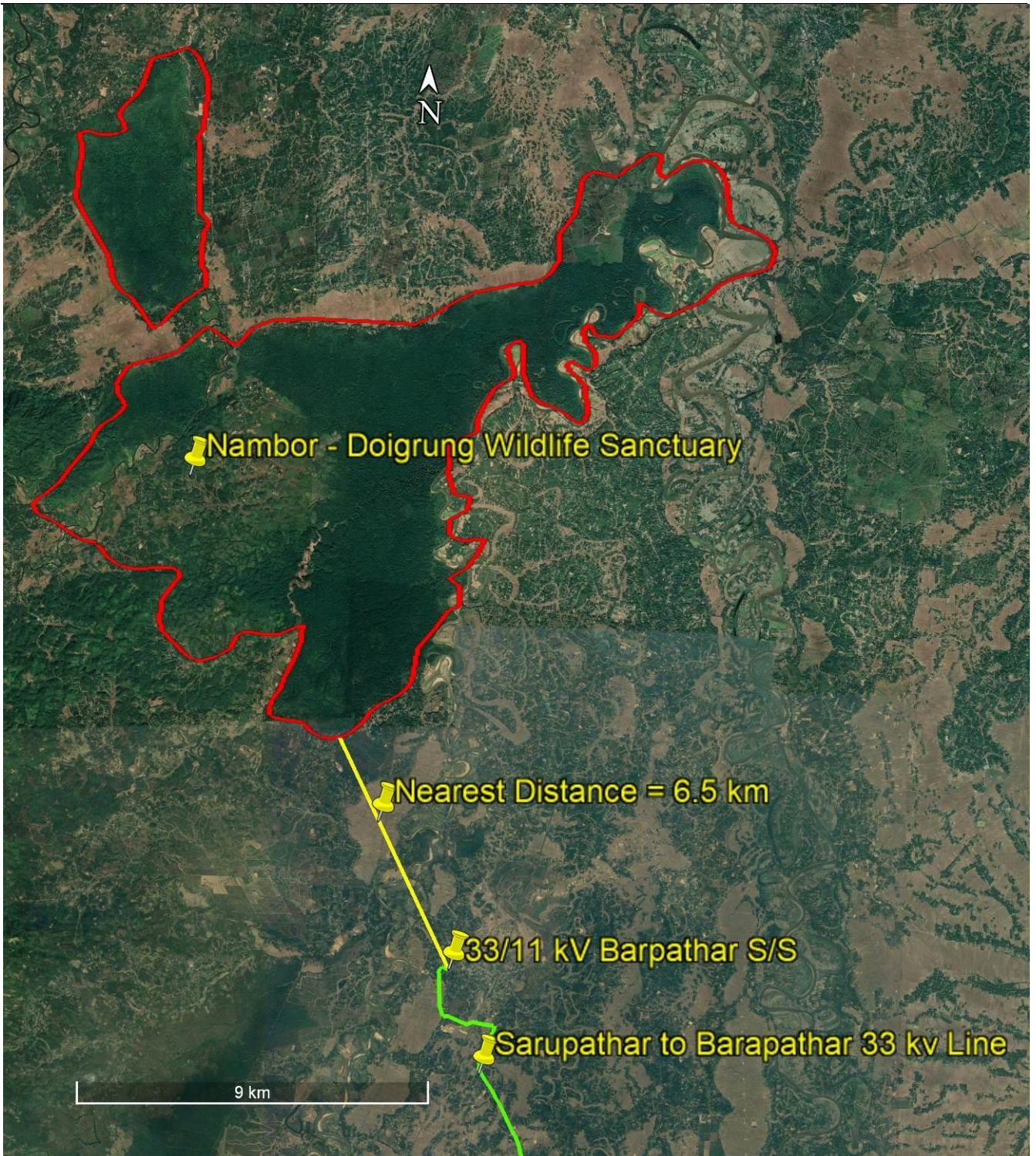


Figure 3.6: Google Imagery Showing Protected Area w.r.t. Sub Project Locations in Golaghat District

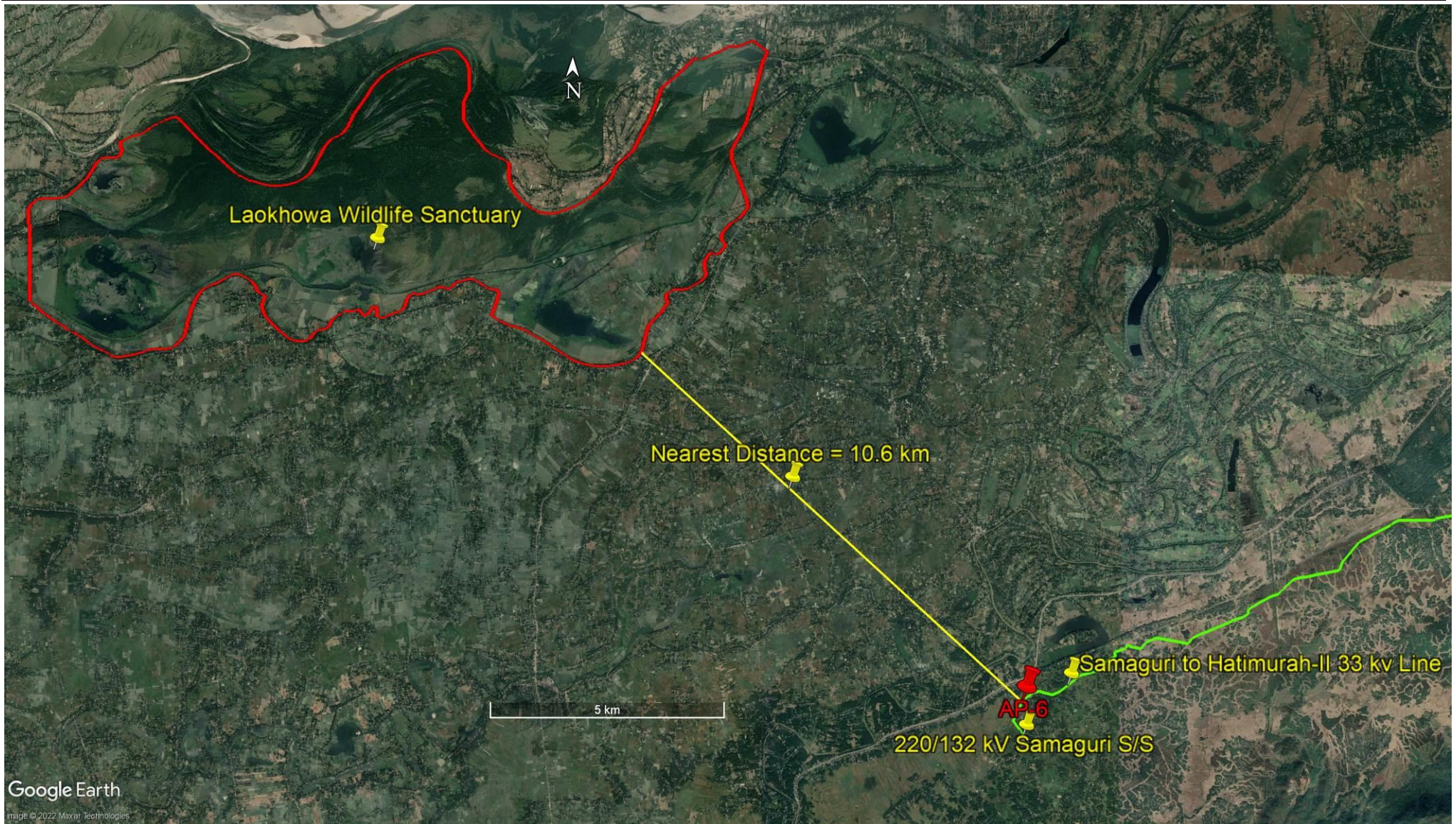


Figure 3.7: Google Imagery Showing Protected Area w.r.t. Sub Project Locations in Nagaon District

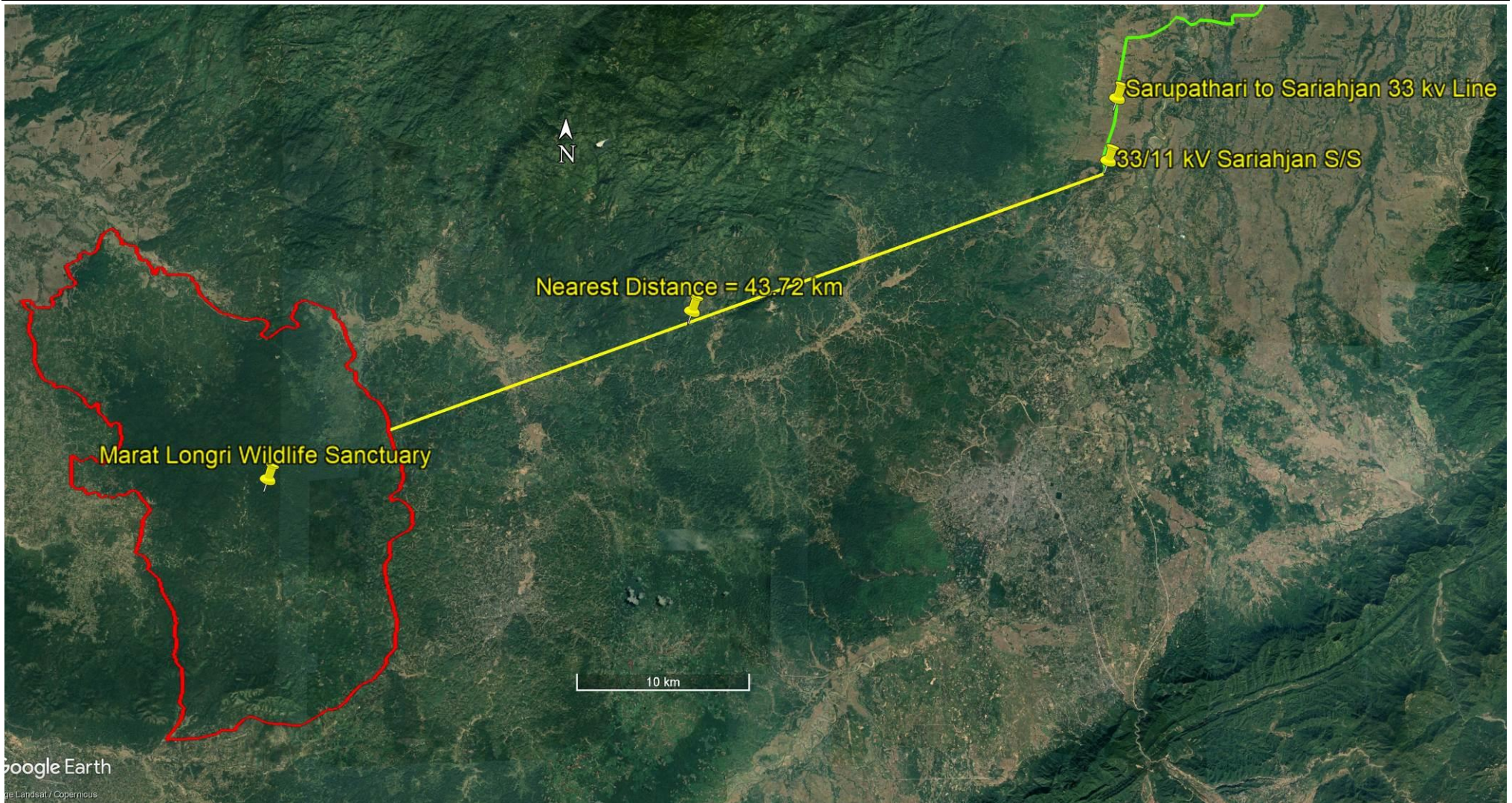


Figure 3.8: Google Imagery Showing Protected Area w.r.t. Sub Project Locations in Karbi Anglong District

3.6.4 Elephant Reserves

The Elephant Reserves (ER) in the state comprises of Chirang-Ripu ER, Sonitpur ER, Diding Patkai ER, Kaziranga-Karbi Anglong ER and Dhansiri-Lungding ER (refer **Figure 3.9**). Total area of these ERs is 10,967 sq km. Nearest ERs from the project location are Kaziranga-Karbi Anglong ER and Dhansiri-Lungding ER. **The nearest subprojects from the Kaziranga-Karbi Anglong ER are existing 33/11 kV Barapathar substation at an aerial distance of approx. 2.8 km, existing 33/11 kV Sariahjan substation at an aerial distance of approx. 6.8 km and Pole No. AP-39 of Samaguri to Hatimurah-II 33 kV line at an aerial distance of approx. 6.0 km.** The nearest subproject from the Dhansiri-Lungding ER is the new 33/11 kV Mailu substation at an aerial distance of approx. 5.3 km (refer **Figure 3.9**). Since the subprojects are located away from the ER, therefore, there will not be any impact of any magnitude on the ERs due to the construction of subprojects.

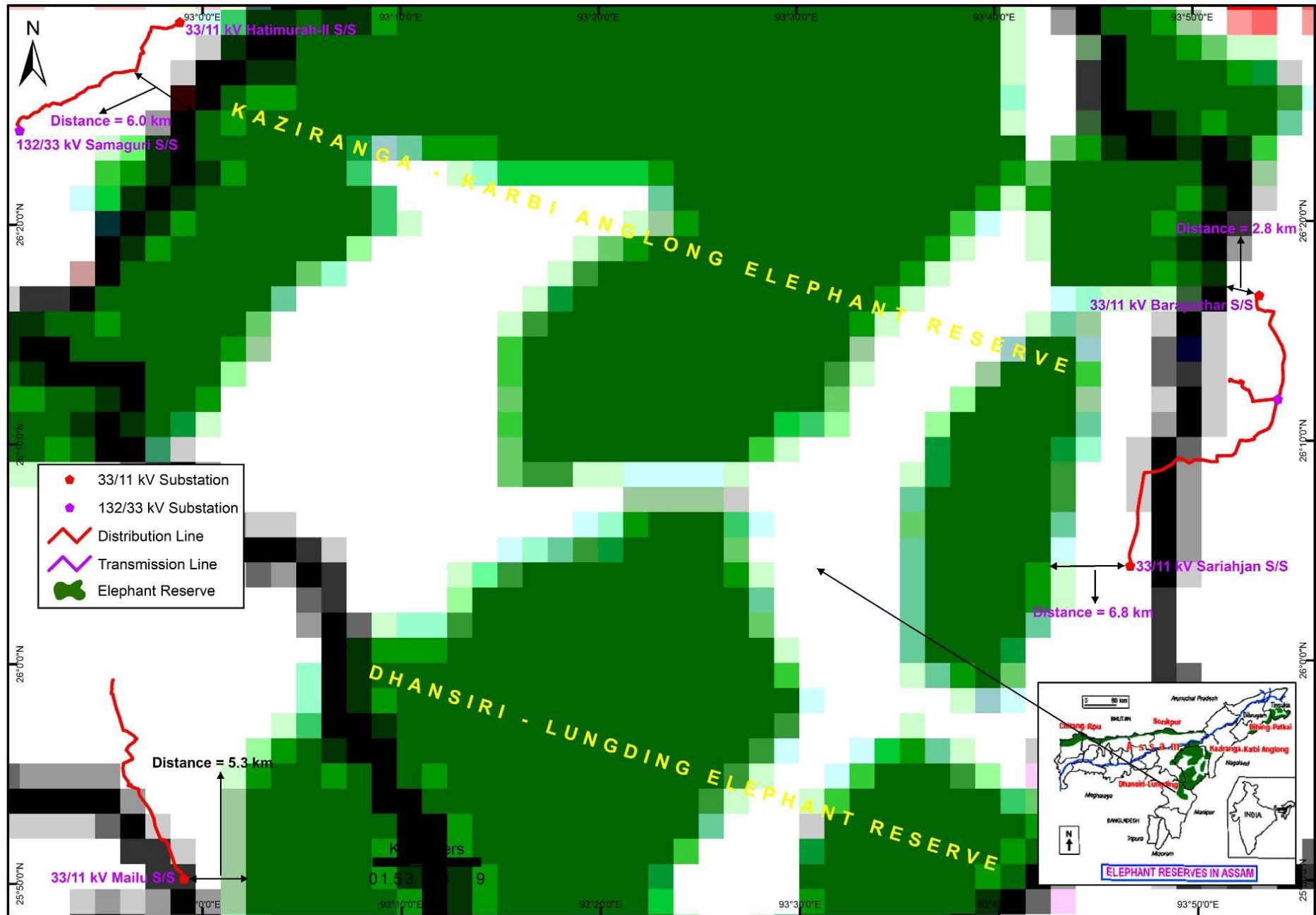


Figure 3.9: Map Showing Elephant Reserves w.r.t. Sub Project Locations

3.6.5 Important Bird & Biodiversity Areas (IBAs)

Bird Life International (www.birdlife.org) has identified 55 Important Bird & Biodiversity Areas (IBAs) in Assam. These IBAs cover 815.92 sq km area, which constitute about 3.6% of the state's geographical area. Out of these 55 IBAs, below mentioned 12 IBAs falls in project districts. Details of the IBAs are presented below in **Table 3.14**. Map showing location of IBAs w.r.t sub project location in the Golaghat, Nagaon, Jorhat, Sibsagar, Karbi Anglong and Karbi Anglong West & Hojai districts is given at **Figure 3.10** and **Figure 3.15** respectively.

Table 3.14: Important Bird & Biodiversity Areas in Districts Belonging to Study Area

S. No.	IBA Code	IBA Name	District	Criteria	Important Species	Area (sq km)
1	IN376	Deobali Jalah, Sialmari, Haibargaon, Khutikatia (Nagaon)	Nagaon	A1, A4i	<i>Francolinus gularis, Houbaropsis bengalensis, Leptoptilos dubius, Leptoptilos javanicus, Schoenicola striatus</i>	10.00
2	IN377	Dhansiri Reserve Forest	Karbi Anglong	A1, A4i	<i>Pavo muticus, Asarcornis scutulata, Leptoptilos dubius, Leptoptilos javanicus, Gyps bengalensis, Gyps tenuirostris, Aceros nipalensis</i>	770.00
3	IN381	East & North Karbi Anglong Wildlife Sanctuaries	Karbi Anglong	A1	<i>Asarcornis scutulata, Columba punicea, Leptoptilos javanicus, Gyps bengalensis, Gyps tenuirostris, Aceros nipalensis</i>	317.81
4	IN382	Garampani, Nambor, & Doigrung	Karbi Anglong, Golaghat	A1	<i>Asarcornis scutulata, Leptoptilos javanicus</i>	150.00
5	IN383	Hollongapar Gibbon Sanctuary	Jorhat	A1	<i>Asarcornis scutulata, Leptoptilos javanicus, Gyps bengalensis, Gyps tenuirostris</i>	20.98
6	IN384	Habang	Karbi Anglong West	A4ii	<i>Falco amurensis</i>	10.00
7	IN389	Jhanjimukh – Kokilamukh	Jorhat	A1, A4i	<i>Francolinus gularis, Aythya baeri, Leptoptilos dubius, Leptoptilos javanicus, Pelecanus philippensis, Gyps bengalensis, Gyps tenuirostris, Clanga clanga</i>	25.00
8	IN390	Kaziranga National Park	Nagaon, Golaghat	A1, A2, A4i, A4iii	<i>Francolinus gularis, Anser indicus, Marmaronetta angustirostris, Aythya baeri, Columba punicea, Houbaropsis bengalensis, Leptoptilos dubius, Leptoptilos javanicus, Ardea insignis, Pelecanus crispus, Pelecanus philippensis, Tringa guttifer, Rynchops albicollis, Gyps bengalensis, Gyps tenuirostris, Clanga clanga, Aquila heliacal, Haliaeetus leucoryphus, Falco naumanni, Chrysomma altirostre, Paradoxornis flavirostris, Pelloroneum palustre, Argya longirostris, Saxicola insignis, Ploceus</i>	849.80

S. No.	IBA Code	IBA Name	District	Criteria	Important Species	Area (sq km)
					<i>megarhynchus, Waterbirds</i>	
9	IN393	Laokhowa & Burhachapori Sanctuaries	Nagaon, Sonitpur	A1, A2	<i>Francolinus gularis, Aythya baeri, Houbaropsis bengalensis, Leptoptilos dubius, Leptoptilos javanicus, Tringa guttifer, Gyps bengalensis, Gyps tenuirostris, Clanga clanga, Haliaeetus leucoryphus, Pellorneum palustre</i>	114.17
10	IN394	Lumding Reserve Forest & Marat Longri Wildlife Sanctuary	Hojai, Karbi Anglong	A1	<i>Asarcornis scutulata, Leptoptilos javanicus, Gyps bengalensis, Gyps tenuirostris</i>	674.00
11	IN401	Pani-Dihing Bird Sanctuary	Sibsagar, Majuli	A1, A2 A4iii	<i>Francolinus gularis, Aythya baeri, Leptoptilos dubius, Leptoptilos javanicus, Pelecanus philippensis, Gyps bengalensis, Gyps tenuirostris, Clanga clanga, Haliaeetus leucoryphus, Paradoxornis flavirostris, Waterbirds</i>	40.00
12	IN403	Sibsagar Tanks	Sibsagar	A1, A4i	<i>Anser indicus, Anser anser, Aythya baeri, Leptoptilos dubius, Leptoptilos javanicus, Gyps bengalensis, Gyps tenuirostris</i>	1.50

Source: <http://www.birdlife.org/datazone/country/india>

International Bird Areas are achieved through the application of quantitative ornithological criteria, grounded in up-to-date knowledge of the sizes and trends of bird populations. The Global criteria are as follows:

A1. Globally threatened species

Criterion: The site is known or thought regularly to hold significant numbers of a globally threatened species, or other species of global conservation concern.

A2. Restricted-range species

Criterion: The site is known or thought to hold a significant component of a group of species whose breeding distributions define an Endemic Bird Area (EBA) or Secondary Area (SA).

A4. Congregations

- i. The site is known or thought to hold, on a regular basis, $\geq 1\%$ of a biogeographic population of a congregatory waterbird species.
- ii. The site is known or thought to hold, on a regular basis, $\geq 1\%$ of the global population of a congregatory seabird or terrestrial species.
- iii. The site is known or thought to hold, on a regular basis, $\geq 20,000$ waterbirds or $\geq 10,000$ pairs of seabird of one or more species.

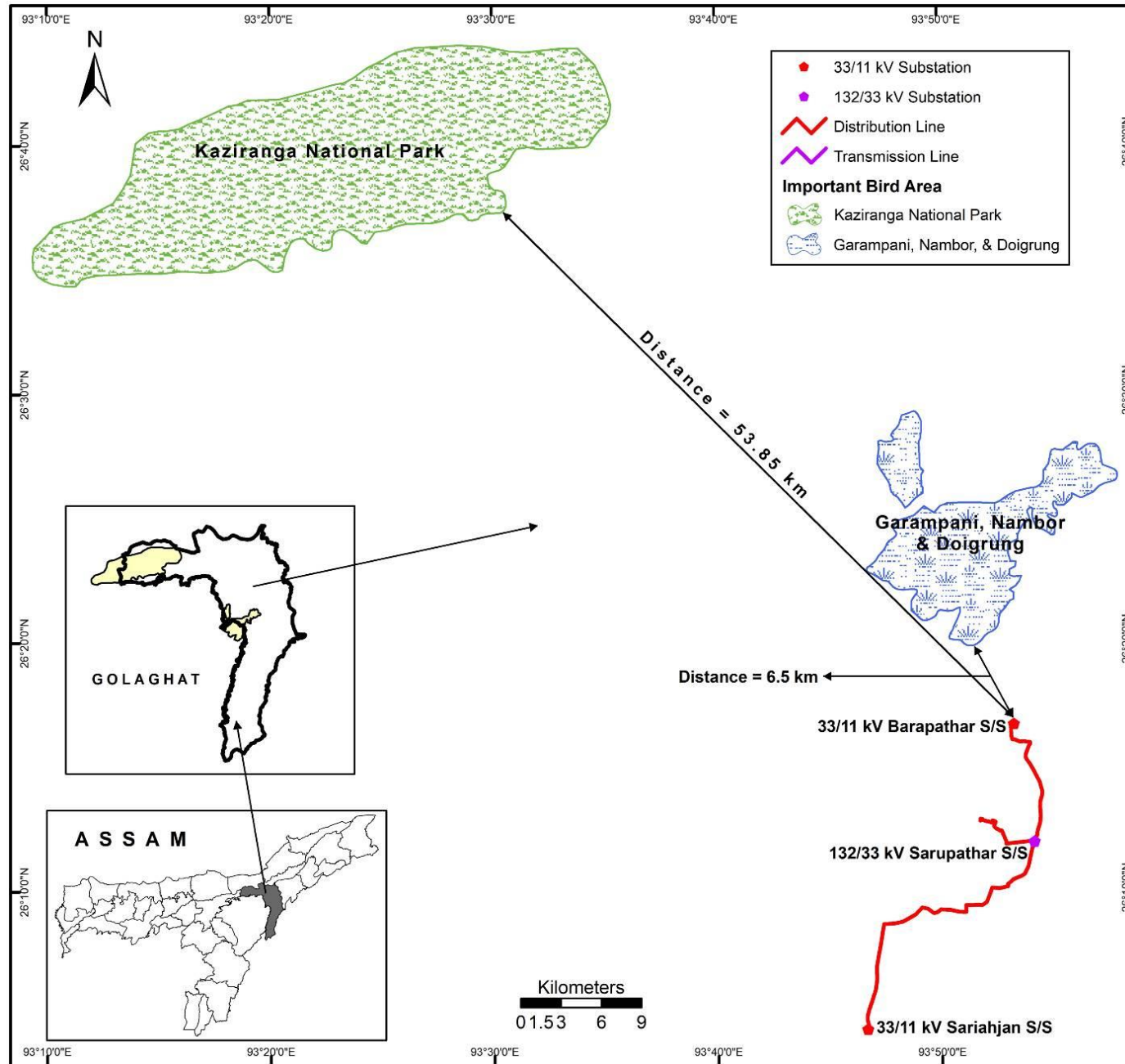


Figure 3.10: Map Showing IBAs w.r.t. Sub Project Locations in Golaghat District

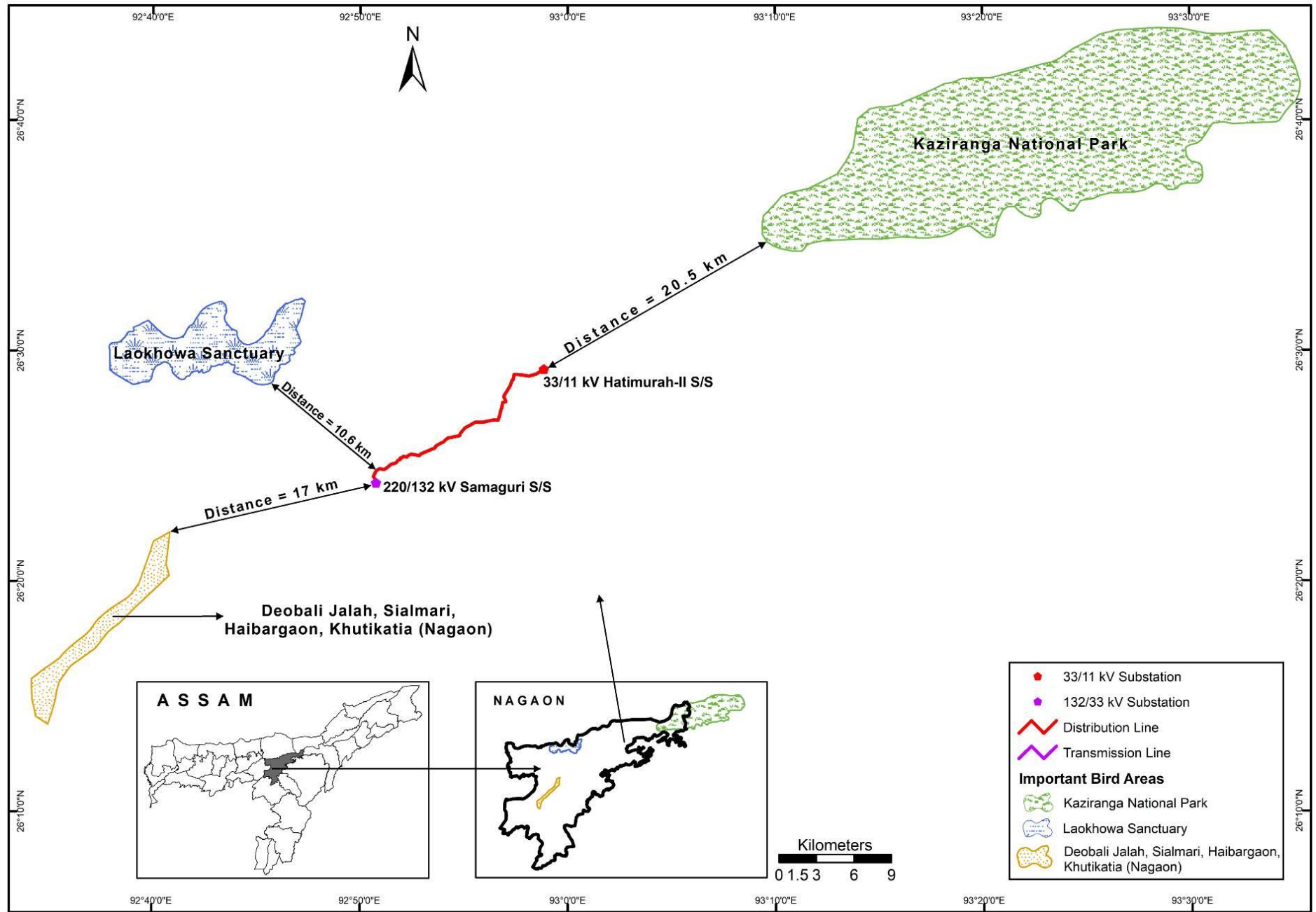


Figure 3.11: Map Showing IBAs w.r.t. Sub Project Locations in Nagaon District

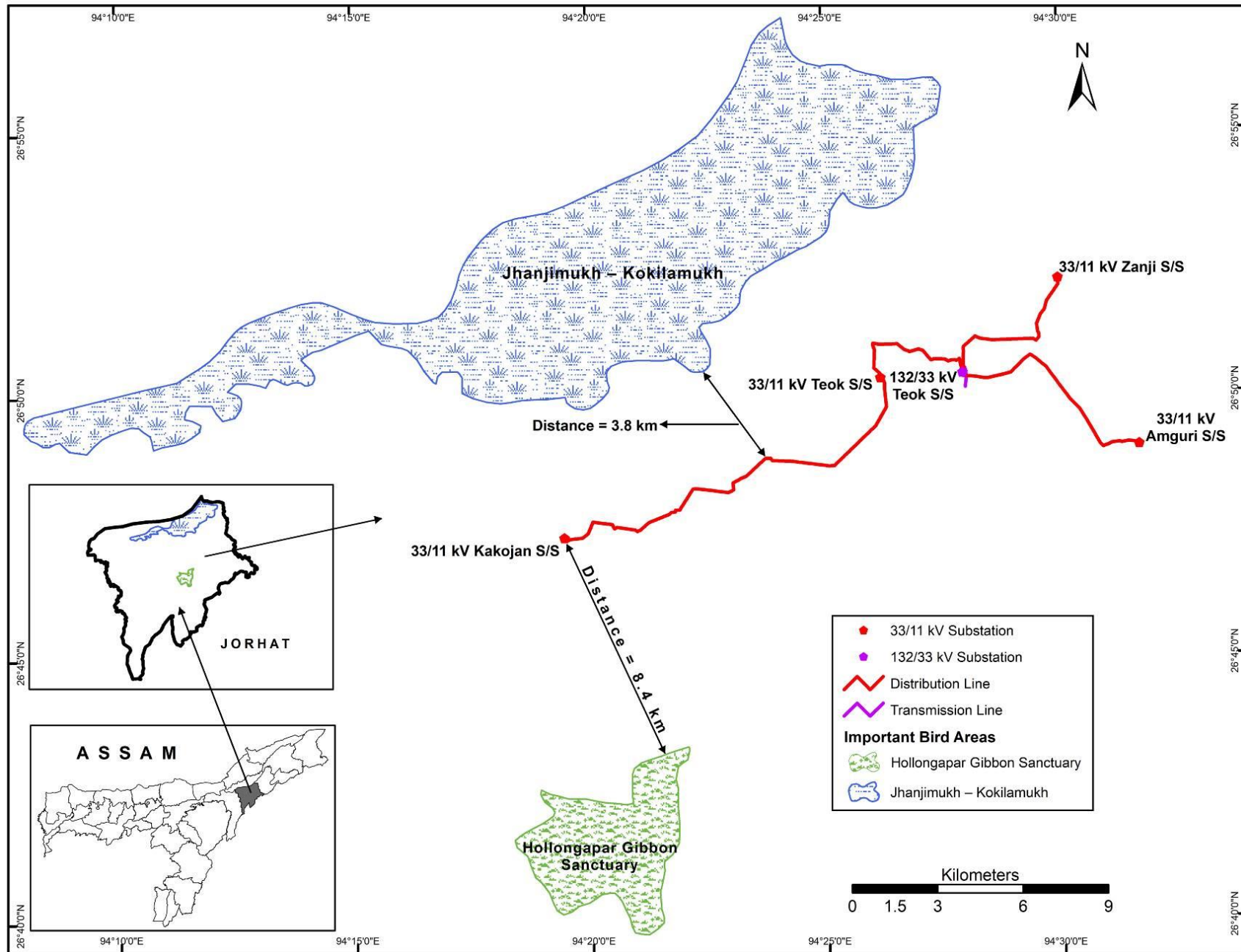


Figure 3.12: Map Showing IBAs w.r.t. Sub Project Locations in Jorhat District

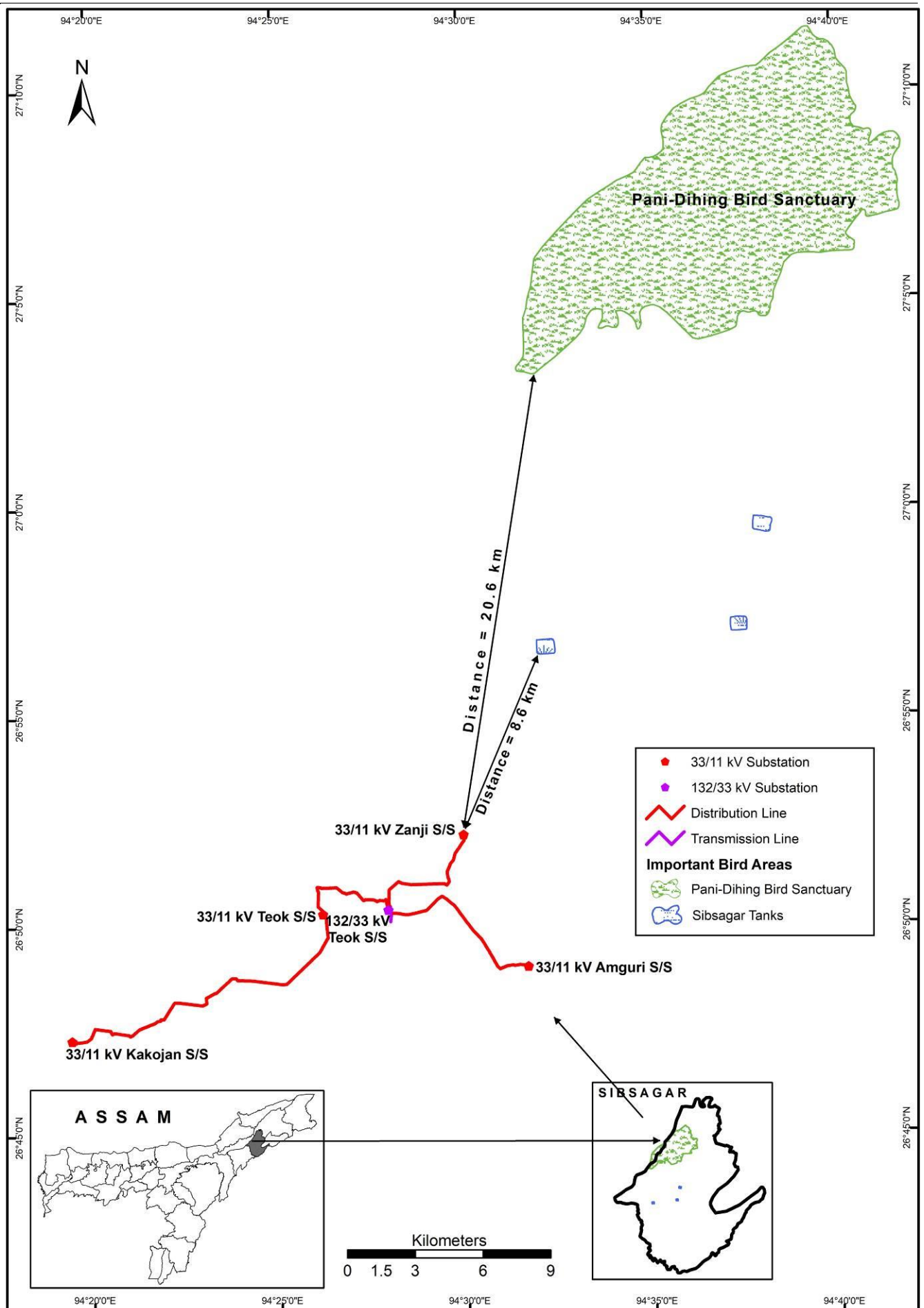


Figure 3.13: Map Showing IBAs w.r.t. Sub Project Locations in Sibsagar District

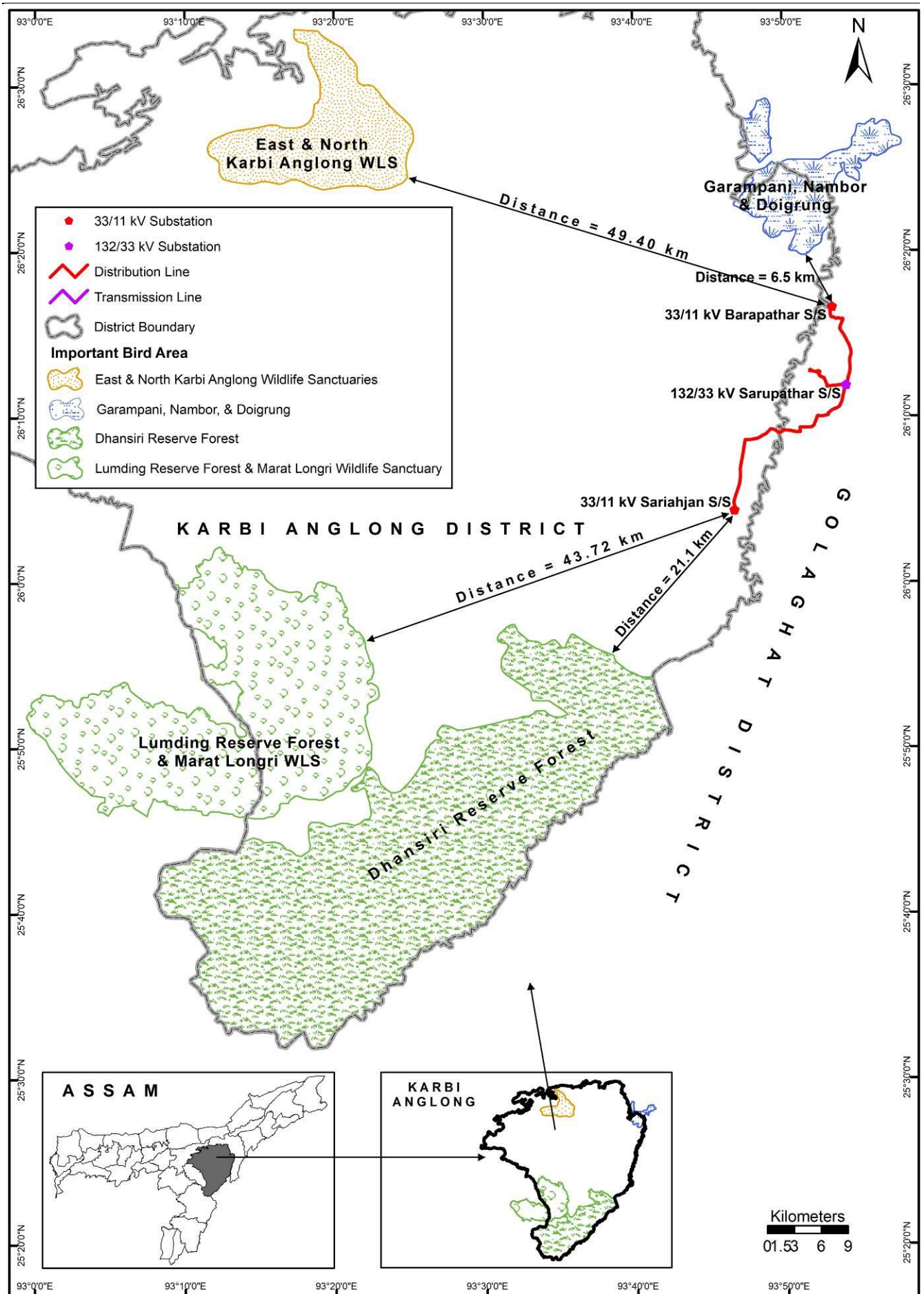


Figure 3.14: Map Showing IBAs w.r.t. Sub Project Locations in Karbi Anglong District

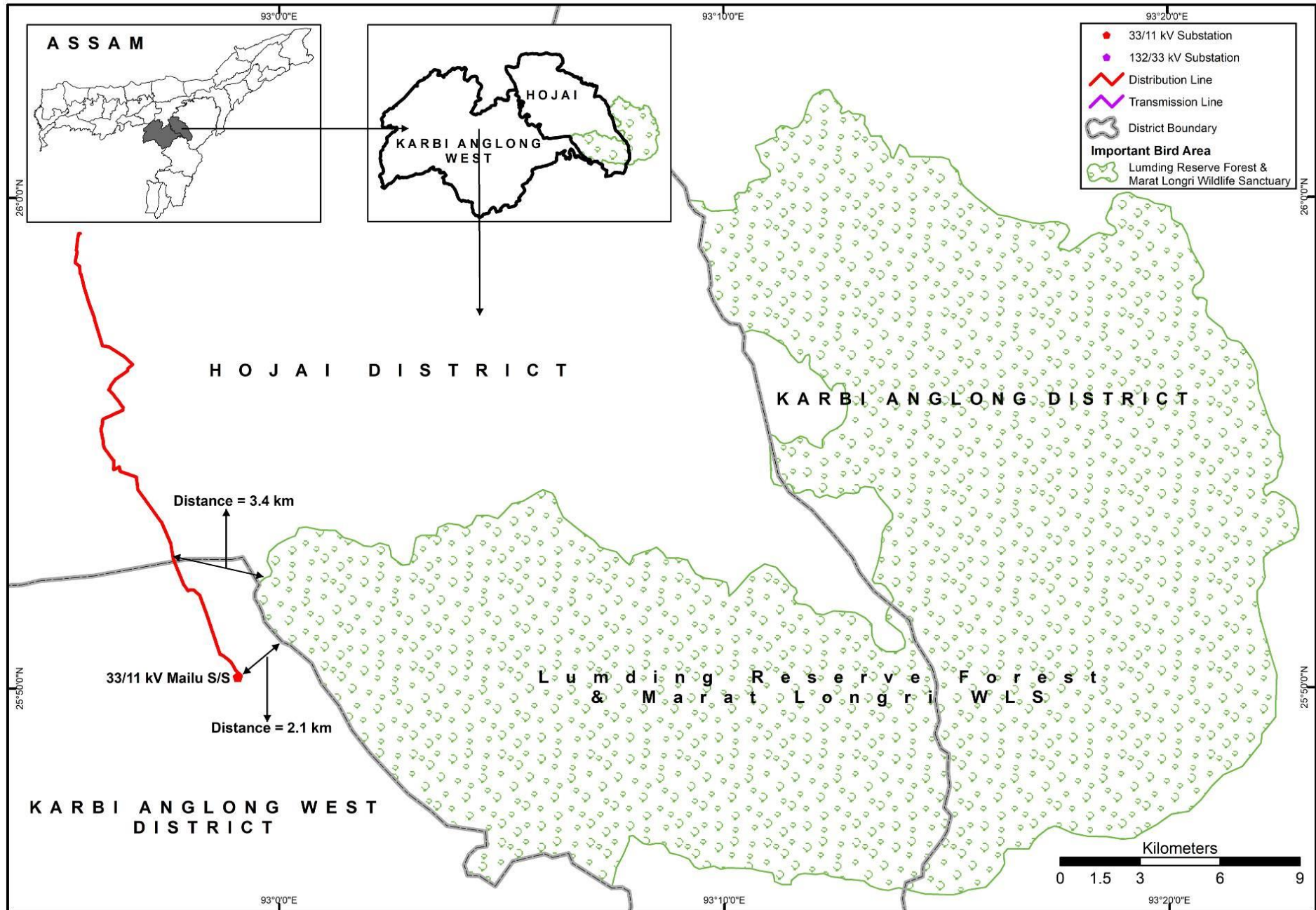


Figure 3.15: Map Showing IBAs w.r.t. Sub Project Locations in Karbi Anglong West and Hojai Districts

From the map given at **Figure 3.10** it is evident that the nearest IBA to any of the sub project in Golaghat district is Garampani, Nambor, & Doigrung IBA. The nearest component of the sub project to the IBA is the existing 33/11 kV Barapathar substation, the aerial distance of the substation from the boundary of IBA is approx. 6.5 km (refer **Figure 3.6**).

From the map given at **Figure 3.11** it is evident that the nearest IBA to any of the sub project in Nagaon district is Laokhowa Sanctuary. The nearest component of the sub project to the IBA is the Pole No AP-6 of the 33 kV line from 220/132 kV Samaguri substation to the 33/11 kV Hatimurah-II substation. The aerial distance of the Pole from the boundary of IBA is approx. 10.6 km (refer **Figure 3.7**).

From the map given at **Figure 3.12** it is evident that the nearest IBA to any of the sub project in Jorhat district is Jhanjimukh – Kokilamukh IBA. The nearest component of the sub project to the IBA is the Pole No. DP-21 of the 33 kV line from 132/33 kV Teok substation to the 33/11 kV Kakojan substation. The aerial distance of the Pole from the boundary of IBA is approx. 3.8 km (refer **Figure 3.16**).

From the map given at **Figure 3.13** it is evident that the nearest IBA to any of the sub project in Sibsagar district is Sibsagar Tanks IBA. The nearest component of the sub project to the IBA is the existing 33/11 kV Zanji substation, the aerial distance of the substation from the boundary of IBA is approx. 8.6 km (refer **Figure 3.17**).

From the map given at **Figure 3.14** it is evident that the nearest IBA to any of the sub project in Karbi Anglong district is Dhansari Reserve Forest IBA. The nearest component of the sub project to the IBA is the existing 33/11 kV Sariahjan substation, the aerial distance of the substation from the boundary of IBA is approx. 21.1 km (refer **Figure 3.18**).

From the map given at **Figure 3.15** it is evident that the nearest IBA to any of the sub project in Karbi Anglong West district is Lumding Reserve Forest & Marat Longri Wildlife Sanctuary IBA (the IBA lies in Hojai and Karbi Anglong districts). The nearest component of the sub project to the IBA is the proposed 33/11 kV Mailu substation, the aerial distance of the substation from the boundary of IBA is approx. 2.1 km (refer **Figure 3.19**). Similarly, from the map given at **Figure 3.15** it is evident that the nearest IBA to any of the sub project in Hojai district is also Lumding Reserve Forest & Marat Longri Wildlife Sanctuary IBA. The nearest component of the sub project to the IBA is the Pole No. AP-33 of the 33 kV line from 33/11 kV Shankardeo Nagar substation to the 33/11 kV Mailu substation. The aerial distance of the Pole from the boundary of IBA is approx. 3.4 km (refer **Figure 3.19**).

In view of above, it is concluded that there will not be any impact of any magnitude on the IBAs as the proposed subprojects are located far away from the IBAs.

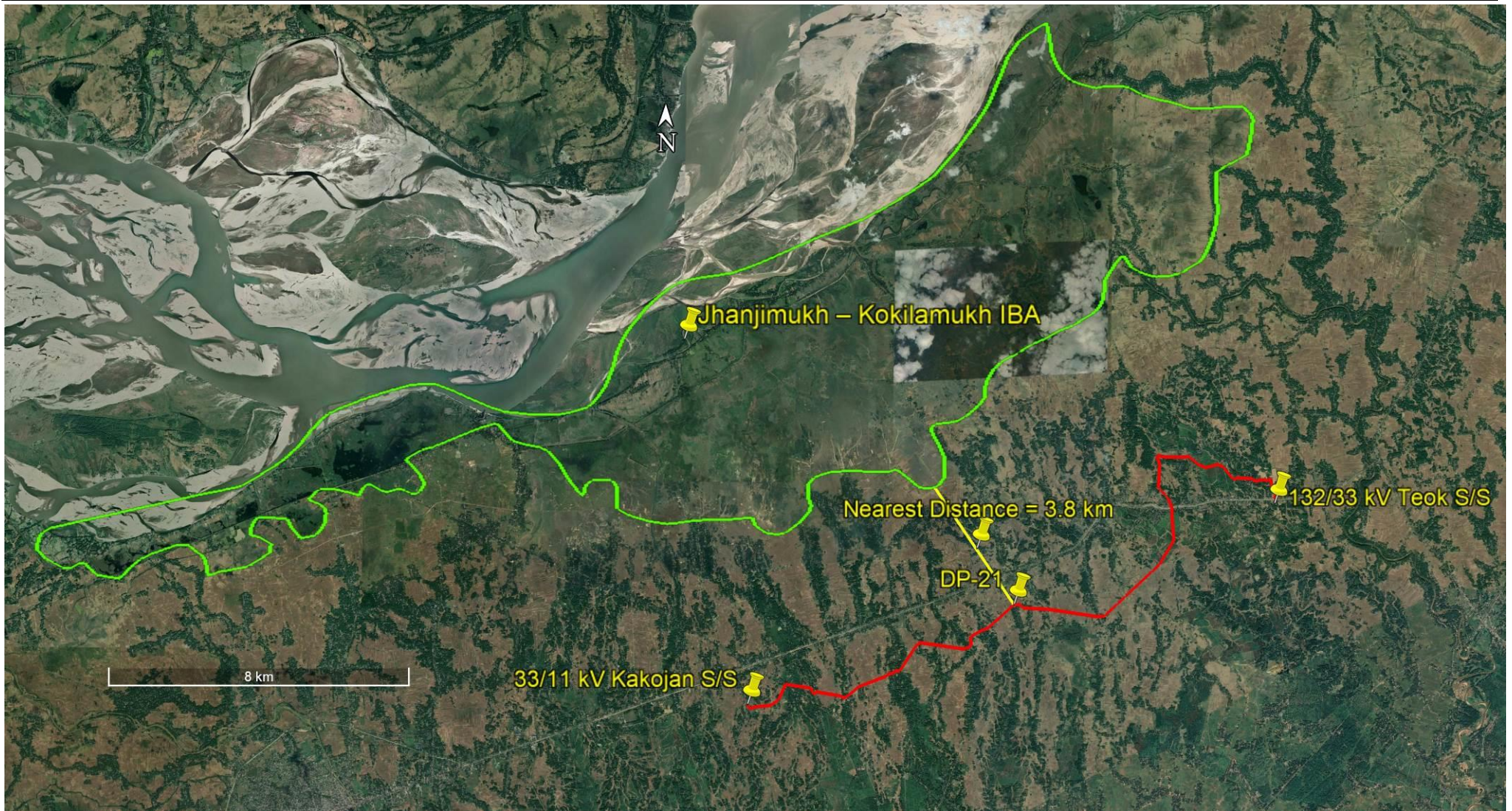


Figure 3.16: Google Imagery Showing IBA w.r.t. Sub Project Locations in Jorhat District

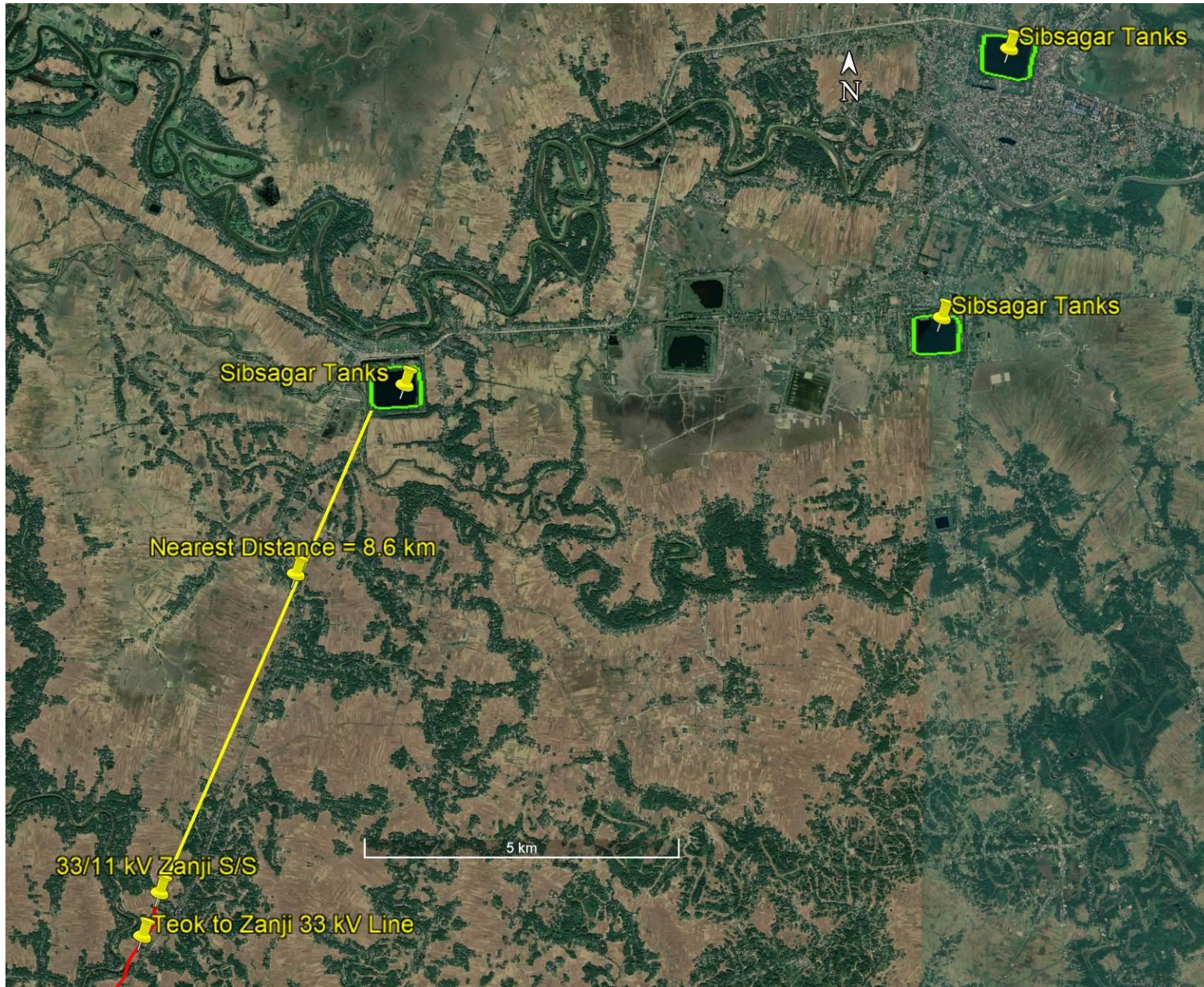


Figure 3.17: Google Imagery Showing IBA w.r.t. Sub Project Locations in Sibsagar District

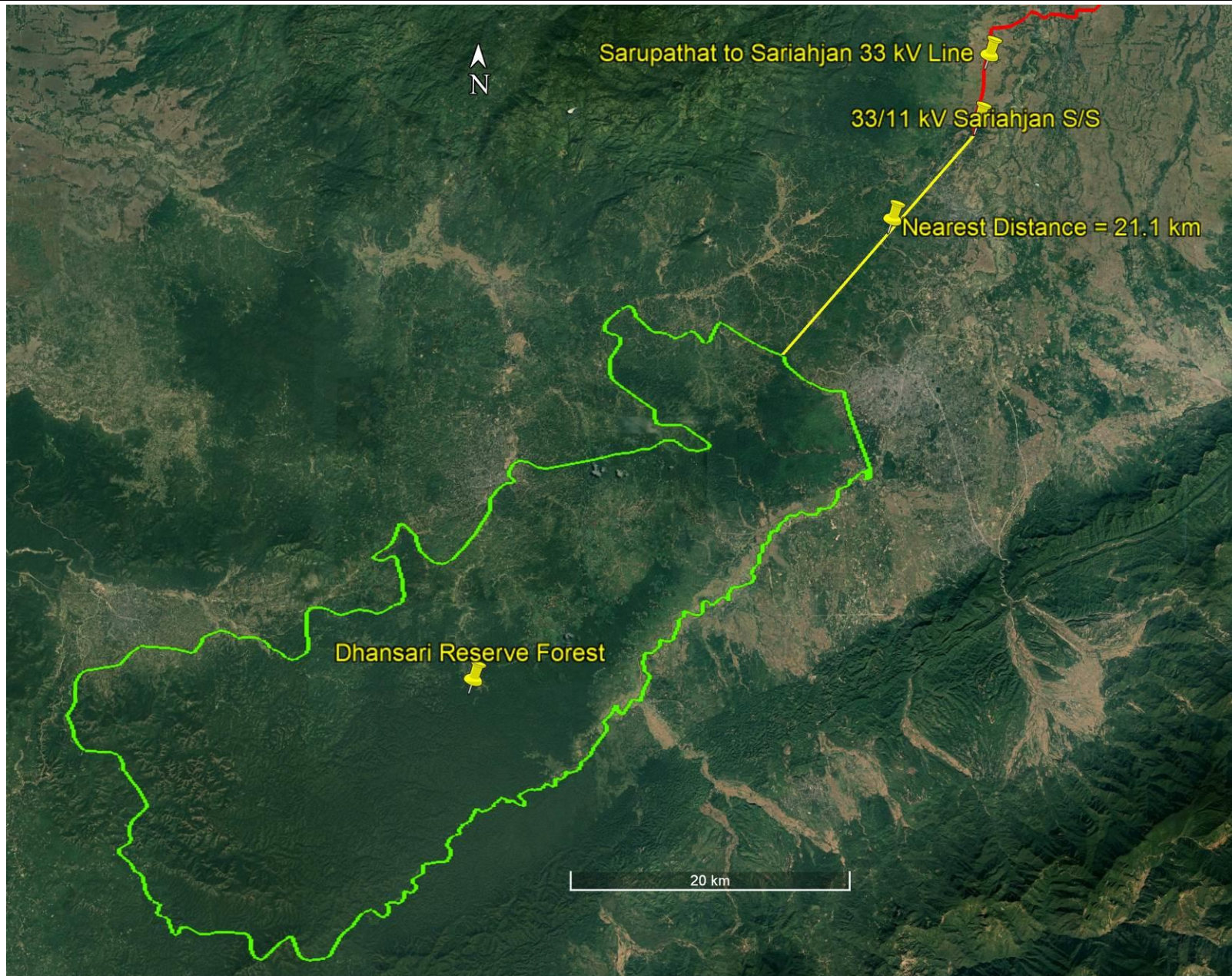


Figure 3.18: Google Imagery Showing IBA w.r.t. Sub Project Locations in Karbi Anglong District

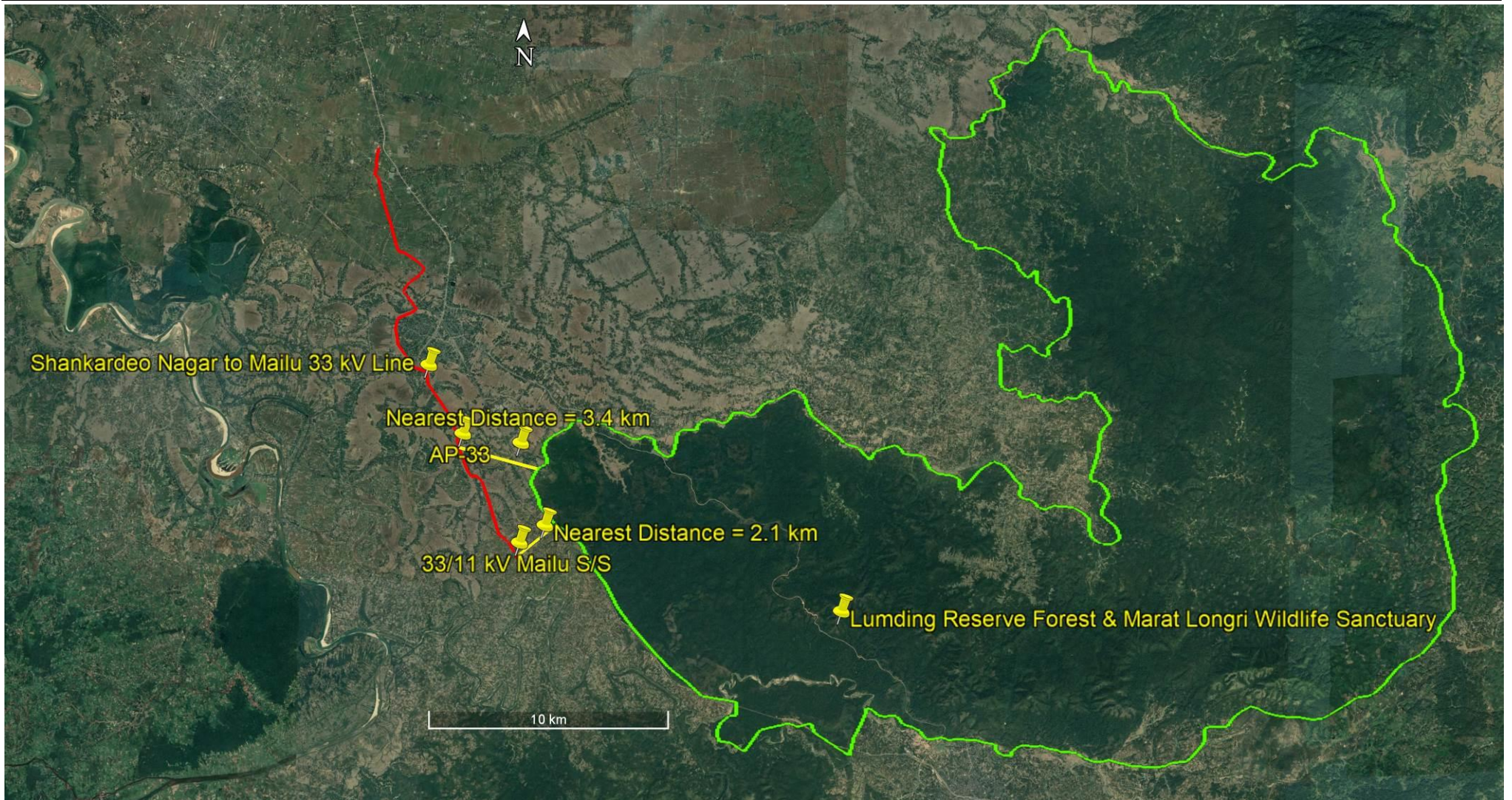


Figure 3.19: Google Imagery Showing IBA w.r.t. Sub Project Locations in Karbi Anglong West and Hojai Districts

3.6.6 Wetland

As per the National Wetland Atlas of Assam, there are total 5097 wetlands in the state. In addition, 6081 small wetlands (< 2.25 ha) have also been identified. Total wetland area estimated is 764372 ha that is around 9.74 per cent of the geographic area of the state. Natural wetlands dominate the state. The major wetland types are River/Stream accounting for 84% of the wetlands (637164 ha), Lake/Ponds (51257 ha), waterlogged (47141 ha) and Ox-bow lakes (14173 ha). There are two Reservoir/Barrages mapped with 2833 ha area, which is the major man made wetland type.

Important wetlands of the state include, Deepor beel, Dhir beel, Sareswar beel, Sone beel, Tamaranga beel and Sonai beel. None of the important wetlands falls in the study area districts. Hence, there will not be any impact of any magnitude on the wetlands due to the construction of subprojects.

3.7 SOCIO-ECONOMIC ENVIRONMENT

For sustainable development, it is important to understand social and economic conditions of the community in the region, impacts of development on the community, measures to mitigate negative impacts and enhance the positive impacts. For new development initiatives, socio economic assessment plays an important role to ensure community participation and their acceptance of the development activity. It also helps in planning the activities for local area development. The population of Assam as per census 2011 was 3,12,05,576 out of which 1,59,39,443 were males and 1,52,66,133 were females.

Nagaon & Hojai district has a population of 28,23,768. The district has a sex ratio of 962 female per 1000 male. The population of Schedule Caste and Schedule Tribes constitute 9.4% and 4.1% respectively of the total population. The literacy rate of the district stands at 72.4%, male and female literacy rate stands at 76.5% and 68.1% respectively (**Table 3.15**). Work participation rate is about 34.7%. Among the total work force, 75.0% are Main Workers and 25.0% are Marginal Workers. Among main workers, 39.1% are cultivators and 14.6% are agricultural labourers, about 2.7% are household industrial workers and about 43.5% of work force is engaged in other than agricultural activities. Of the total population, 65.3% are non workers (**Table 3.16**).

Sibsagar district has a population of 11,51,050. The district has a sex ratio of 954 female per 1000 male. The population of Schedule Caste and Schedule Tribes constitute 3.7% and 4.3% respectively of the total population. The literacy rate of the district stands at 80.4%, male and female literacy rate stands at 85.8% and 74.7% respectively (**Table 3.15**). Work participation rate is about 42.2%. Among the total work force, 65.7% are Main Workers and 34.3% are Marginal Workers. Among main workers, 22.0% are cultivators and 4.4% are agricultural labourers, about 1.9% are household industrial workers and about 71.7% of work force is engaged in other than agricultural activities. Of the total population, 57.8% are non workers (**Table 3.16**).

Jorhat district has a population of 10,92,256. The district has a sex ratio of 962 female per 1000 male. The population of Schedule Caste and Schedule Tribes constitute 8.1% and 12.8%

respectively of the total population. The literacy rate of the district stands at 82.1%, male and female literacy rate stands at 87.6% and 76.5% respectively (**Table 3.15**). Work participation rate is about 45.7%. Among the total work force, 67.9% are Main Workers and 32.1% are Marginal Workers. Among main workers, 29.1% are cultivators and 6.0% are agricultural labourers, about 4.3% are household industrial workers and about 60.6% of work force is engaged in other than agricultural activities. Of the total population, 54.3% are non workers (**Table 3.16**).

Golaghat district has a population of 10,66,888. The district has a sex ratio of 964 female per 1000 male. The population of Schedule Caste and Schedule Tribes constitute 5.8% and 10.5% respectively of the total population. The literacy rate of the district stands at 77.4%, male and female literacy rate stands at 83.6% and 71.1% respectively (**Table 3.15**). Work participation rate is about 45.0%. Among the total work force, 69.0% are Main Workers and 31.0% are Marginal Workers. Among main workers, 40.4% are cultivators and 7.6% are agricultural labourers, about 2.3% are household industrial workers and about 49.7% of work force is engaged in other than agricultural activities. Of the total population, 55.0% are non workers (**Table 3.16**).

Karbi Anglong and Karbi Anglong West districts has a population of 9,56,313. The district has a sex ratio of 951 female per 1000 male. The population of Schedule Caste and Schedule Tribes constitute 4.7% and 56.3% respectively of the total population. The literacy rate of the district stands at 69.3%, male and female literacy rate stands at 76.1% and 62.0% respectively (**Table 3.15**). Work participation rate is about 40.1%. Among the total work force, 67.9% are Main Workers and 32.1% are Marginal Workers. Among main workers, 62.9% are cultivators and 7.9% are agricultural labourers, about 2.0% are household industrial workers and about 27.3% of work force is engaged in other than agricultural activities. Of the total population, 59.9% are non workers (**Table 3.16**).

Table 3.15: Demographic & Literacy Profile of the Districts Belonging to Study Area

District	No. of HH	Population				Sex Ratio	Population (above 6 Years)			Schedule Caste				Schedule Tribe				Literate			Literacy Rate		
		Total	Male	Female	Total		Male	Female	Total	Male	Female	%	Total	Male	Female	%	Total	Male	Female	Total	Male	Female	
		1	2	3	4		5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Nagaon & Hojai	Total	559340	2823768	1439112	1384656	962	2363828	1204909	1158919	266350	136473	129877	9.4	115153	57759	57394	4.1	1710716	921850	788866	72.4	76.5	68.1
	Rural	480399	2454234	1250985	1203249	962	2033421	1036737	996684	228530	117173	111357	9.3	109549	54926	54623	4.5	1422500	769517	652983	70.0	74.2	65.5
	Urban	78941	369534	188127	181407	964	330407	168172	162235	37820	19300	18520	10.2	5604	2833	2771	1.5	288216	152333	135883	87.2	90.6	83.8
Sibsagar	Total	248367	1151050	589216	561834	954	1011670	518114	493556	42347	21568	20779	3.7	49039	24989	24050	4.3	813505	444767	368738	80.4	85.8	74.7
	Rural	222136	1040954	531286	509668	959	912665	465889	446776	34483	17526	16957	3.3	47274	24078	23196	4.5	723490	396272	327218	79.3	85.1	73.2
	Urban	26231	110096	57930	52166	901	99005	52225	46780	7864	4042	3822	7.1	1765	911	854	1.6	90015	48495	41520	90.9	92.9	88.8
Jorhat	Total	236262	1092256	556805	535451	962	967662	493377	474285	88665	45194	43471	8.1	139971	70795	69176	12.8	794929	432335	362594	82.1	87.6	76.5
	Rural	184642	871722	442968	428754	968	768328	390423	377905	72434	36973	35461	8.3	134361	67932	66429	15.4	614748	336698	278050	80.0	86.2	73.6
	Urban	51620	220534	113837	106697	937	199334	102954	96380	16231	8221	8010	7.4	5610	2863	2747	2.5	180181	95637	84544	90.4	92.9	87.7
Golaghat	Total	227197	1066888	543161	523727	964	932095	474499	457596	62298	31807	30491	5.8	111765	56420	55345	10.5	721764	396475	325289	77.4	83.6	71.1
	Rural	204860	969152	493125	476027	965	844032	429474	414558	56152	28636	27516	5.8	108974	55035	53939	11.2	640978	354039	286939	75.9	82.4	69.2
	Urban	22337	97736	50036	47700	953	88063	45025	43038	6146	3171	2975	6.3	2791	1385	1406	2.9	80786	42436	38350	91.7	94.2	89.1
Karbi Anglong & Karbi Anglong West	Total	177646	956313	490167	466146	951	804632	412739	391893	44961	23436	21525	4.7	538738	272460	266278	56.3	557214	314253	242961	69.3	76.1	62.0
	Rural	153957	843347	431924	411423	953	704940	361365	343575	39936	20798	19138	4.7	491856	249022	242834	58.3	470110	267214	202896	66.7	73.9	59.1
	Urban	23689	112966	58243	54723	940	99692	51374	48318	5025	2638	2387	4.4	46882	23438	23444	41.5	87104	47039	40065	87.4	91.6	82.9

Source: Census of India, 2011

Table 3.16: Occupational Pattern of the Districts Belonging to Study Area

District	Population	Working Population																								
		Total Worker																				Non Worker				
		Main Worker																Marginal Worker								
		Cultivator				Agricultural Labour				Household Industry Labour				Other Worker												
Total	Male	Female	%	Total	Male	Female	%	Total	Male	Female	%	Total	Male	Female	%	Total	Male	Female	%	Total	Male	Female	%			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		
Nagaon & Hojai	Total	2823768	287452	266560	20892	39.1	107649	93032	14617	14.6	20130	13560	6570	2.7	319762	263381	56381	43.5	245005	130195	114810	25.0	1843770	672384	1171386	65.3
	Rural	2454234	283801	263062	20739	45.6	105522	91152	14370	17.0	17330	11452	5878	2.8	215549	173515	42034	34.6	227203	118988	108215	26.7	1604829	592816	1012013	65.4
	Urban	369534	3651	3498	153	3.2	2127	1880	247	1.9	2800	2108	692	2.5	104213	89866	14347	92.4	17802	11207	6595	13.6	238941	79568	159373	64.7
Sibsagar	Total	1151050	70255	59184	11071	22.0	14008	9654	4354	4.4	6143	4513	1630	1.9	228544	164239	64305	71.7	166767	87481	79286	34.3	665333	264145	401188	57.8
	Rural	1040954	69941	58914	11027	24.8	13681	9386	4295	4.8	5470	3935	1535	1.9	193167	134332	58835	68.4	162652	84969	77683	36.6	596043	239750	356293	57.3
	Urban	110096	314	270	44	0.9	327	268	59	0.9	673	578	95	1.8	35377	29907	5470	96.4	4115	2512	1603	10.1	69290	24395	44895	62.9
Jorhat	Total	1092256	98667	73535	25132	29.1	20176	12529	7647	6.0	14432	8304	6128	4.3	205360	154653	50707	60.6	159983	71725	88258	32.1	593638	236059	357579	54.3
	Rural	871722	97267	72339	24928	36.4	18840	11656	7184	7.0	11898	6536	5362	4.4	139440	100879	38561	52.1	142635	62188	80447	34.8	461642	189370	272272	53.0
	Urban	220534	1400	1196	204	2.0	1336	873	463	1.9	2534	1768	766	3.6	65920	53774	12146	92.6	17348	9537	7811	19.6	131996	46689	85307	59.9
Golaghat	Total	1066888	133659	107677	25982	40.4	25086	15757	9329	7.6	7778	4671	3107	2.3	164687	118981	45706	49.7	148718	62018	86700	31.0	586960	234057	352903	55.0
	Rural	969152	132984	107079	25905	44.3	24727	15446	9281	8.2	6859	4192	2667	2.3	135863	94742	41121	45.2	143923	58894	85029	32.4	524796	212772	312024	54.2
	Urban	97736	675	598	77	2.2	359	311	48	1.2	919	479	440	3.0	28824	24239	4585	93.7	4795	3124	1671	13.5	62164	21285	40879	63.6
Karbi Anglong & Karbi Anglong West	Total	956313	163800	128566	35234	62.9	20595	12631	7964	7.9	5085	2422	2663	2.0	71002	57346	13656	27.3	122959	45228	77731	32.1	572872	243974	328898	59.9
	Rural	843347	160292	125626	34666	70.0	19568	12013	7555	8.5	4379	1983	2396	1.9	44867	35680	9187	19.6	117267	41969	75298	33.9	496974	214653	282321	58.9
	Urban	112966	3508	2940	568	11.2	1027	618	409	3.3	706	439	267	2.3	26135	21666	4469	83.3	5692	3259	2433	15.4	75898	29321	46577	67.2

Source: Census of India, 2011

**Chapter
4****MAJOR FEATURES OF FINAL ROUTE****4.1 INTRODUCTION**

Environmental impact of transmission and distribution (T&D) line projects are not far reaching and are mostly localized to RoW. However, T&D project has some effects on natural and socio-culture resources. These impacts can be minimized by careful route selection. To minimize these possible impacts, AEGCL/APDCL & IA at the system planning stage itself try to avoid ecological sensitive areas. Wherever such infringements are substantial, different alternative options are considered to select most viable route alignment. For further optimization of route modern survey techniques/tools like GIS, GPS aerial photography is also applied. Introduction of GIS and GPS in route selection result in access to updated/latest information, through satellite images and further optimization of route having minimal environmental impact. Moreover, availability of various details, constraints like topographical and geotechnical details, forest and environmental details etc. help in planning the effective mitigate measures including engineering variations depending upon the site situation/location. The route/site selection criteria followed is detailed below in the ensuing paragraphs.

4.2 ENVIRONMENTAL CRITERIA FOR ROUTE SELECTION

For selection of optimum route, the following points are taken into consideration:

- i. The route of the proposed lines does not involve any human rehabilitation.
- ii. Any monument of cultural or historical importance is not affected by the route of the line.
- iii. The proposed route does not create any threat to the survival of any community with special reference to Tribal Community.
- iv. The proposed route does not affect any public utility services like playgrounds, schools, other establishments etc.
- v. The line route does not pass through any sanctuaries, National Park etc.
- vi. The line route does not infringe with area of natural resources.

In order to achieve this, AEGCL/APDCL undertook route selection for individual transmission & distribution lines in close consultation with representatives of concerned Forest Department and the Department of Revenue. Although under National law, AEGCL/APDCL has the right of eminent domain, yet alternative alignments are considered keeping in mind the above-mentioned factors during site selection, with minor alterations often added to avoid environmentally sensitive areas and settlements at execution stage.

- As a rule, alignments are generally cited away from major towns, whenever possible, to account for future urban expansion (refer **Figure 4.1 to Figure 4.11**) for final route of all T&D network).
- Similarly, forests are avoided to the extent possible, and when it is not possible, a route is selected in consultation with the local Divisional Forest Officer, that causes minimum damage to existing forest resources.

- Alignments are selected to avoid wetlands and unstable areas for both financial and environmental reasons.

In addition, care is also taken to avoid National Parks, Sanctuaries, Eco-sensitive zones, Tiger reserves, Biosphere reserves, Elephant corridors and IBA sites etc. Keeping above in mind the routes of proposed lines under the project have been so aligned that it takes care of above factors. As such, different alternatives for transmission lines were studied with the help of Govt. published data like Forest atlas, Survey of India etc. and Google Maps to arrive at the most optimum route, which can be taken up for detailed survey and assessment of environmental & social impacts for their proper management.

Similarly, the TOR for detailed survey using modern tool like GIS/GPS also contained parameters to avoid/reduce environmental impact while deciding the final route alignment. The major objectives for detailed survey that are part of contract are summarized below:

- (i) The alignment of transmission line shall be most economical from the point of view of construction and maintenance.
- (ii) Routing of transmission line through protected and reserved forest area should be avoided. In case it is not possible to avoid the forest or areas having large trees completely then keeping in view of the overall economy, the route should be aligned in such a way that cutting of trees is minimum.
- (iii) The route should have minimum crossing of major rivers, railway lines, and national/state highways, overhead EHP power lines and communication lines.
- (iv) The number of angle point shall be kept to a minimum.
- (v) The distance between the terminal points specified shall be kept shortest possible, consistent with the terrain that is encountered.
- (vi) Marshy and low line areas, river beds and earth slip zones shall be avoided to minimum risk to the foundations.
- (vii) It would be preferable to utilize level ground for the alignment.
- (viii) Crossing of power line shall be minimal. Alignment will be kept at a minimum distance of 300 meters from power lines to avoid induction problems on the lower voltage lines.
- (ix) Crossings of communication lines shall be minimized and it shall be preferably at right angle, proximity and paralyses with telecom lines shall be eliminated to avoid danger of induction to them.
- (x) Area subjected to flooding searches streams shall be avoided.
- (xi) Restricted areas such as civil and military airfield shall be avoided. Care shall also be taken to avoid the aircraft landing approaches.
- (xii) All alignment should be easily accessible both in dry and rainy seasons to enable maintenance throughout the year.
- (xiii) Certain areas such as quarry sites, tea, tobacco and saffron fields and rich plantation, gardens and nurseries that will present the owner problems in of right of way and leave clearance during construction and maintenance should be avoided.
- (xiv) Angle point should be selected such that shifting of the point within 100 m radius is possible at the time of construction of the line.
- (xv) The line routing should avoid large habitation densely populated areas to the extent possible.

- (xvi) The area requires special foundations and those prone to flooding should be avoided.
- (xvii) For examination of the alternatives and identification of the most appropriate route, besides making use of information/data/details available/extracted through survey of India topographical maps and computer aided processing of NRSA satellite imagery, the contractor shall also carry out reconnaissance/preliminary survey as may be required for the verification and collection of additional information/data/details.
- (xviii) The contractor shall submit his preliminary observation and suggestion along with various information/data/details collected and also processed satellite imagery data, topographical map data marked with alternative routes etc. The final evaluation of the alternative routes shall be conducted by the contractor in consultation with owners' representatives and optimal route alignment shall be proposed by the contractor. Digital terrain modeling using contour data from topographical maps as well as processed satellite data shall be done by the contractor for the selected route. A flythrough perspective using suitable software(s) shall be developed or further refinement of the selected route. If required site visit and field verification shall be conducted by the contractor jointly with the owners' representatives for the proposed route alignment.
- (xix) Final digitized route alignment drawing with the latest topographical and other details/features including all river railway lines, canals, roads etc. up to 8 Kms on both side of selected route alignment shall be submitted by the contractors for owner's approval along with report containing other information / details as mentioned above.

The route finalized after detailed survey by contractor follows all the environmental criteria laid down for consideration of route selection. The major features encountered in the finalized route are elaborated in the ensuing paragraphs.

4.2.1 Transmission Line

The transmission line scope includes following subproject:

- i. LILO of Golaghat – Bokajan 132 kV S/C line at Sarupathar – 0.270 km
- ii. LILO of Jorhat (Gormur) – Nazira 132 kV S/S on D/C at Teok – 0.944 km

In the instant project also, criteria for route selection as mentioned above, has been duly adhered to and all the proposed lines have been selected from analysis of three (03) alternatives routes as described in the IEAR. Subsequently, the proposed route was considered for detail survey by Contractor Agency (after awarding of contract).

During detailed survey some minor alterations as well as geometrical corrections of the route have been carried out which seems inevitable due to actual ground conditions with prime objective of avoiding/ minimizing forest/private plantation areas, settlements, Common Property Resource (CPR), and also considering the technical feasibility of the route from operation and maintenance point of view in consultation with the local village councils prevalent in the project area. Efforts of IA/ AEGCL/APDCL in effectively integrating safeguard and engineering measures successfully minimized environmental and social impacts. For changes in scope of work with respect to IEAR scope i.e. changes in the route alignment based upon alternatives studies and detailed survey for transmission line is given is **Table 4.1**. Final route alignment of all transmission lines are given at **Figure 4.1** to **Figure 4.2**.

Table 4.1: Change in Scope of Work of Transmission Lines w.r.t. IEAR

S. No.	Scope as per IEAR	Current Status	Justification/ Remarks
1	LILO of Golaghat – Bokajan 132 kV S/C line at Sarupathar – 1 km	LILO of Golaghat – Bokajan 132 kV S/C line at Sarupathar – 0.270 km	<p>Change in current status is due to the change in route as location of 132/33 kV Sarupathar substation has been changed as land owner & AEGCL/APDCL could not reach a common agreement.</p> <p>With the change in substation location length of line was drastically decreased by 0.73 km.</p> <p>All the criteria for route selection as mentioned above, has been duly adhered to during finalization of this new route.</p>
2	LILO of Jorhat (Gormur) – Nazira 132 kV S/S on D/C at Teok – 1 km	LILO of Jorhat (Gormur) – Nazira 132 kV S/S on D/C at Teok – 0.944 km	<p>Change in current status is due to the change in route as location of 132/33 kV Teok substation has been slighted changed as land owner & AEGCL/APDCL could not reach a common agreement.</p> <p>With the change in substation location length of line was decreased by 0.056 km.</p> <p>All the criteria for route selection as mentioned above, has been duly adhered to during finalization of this new route.</p>

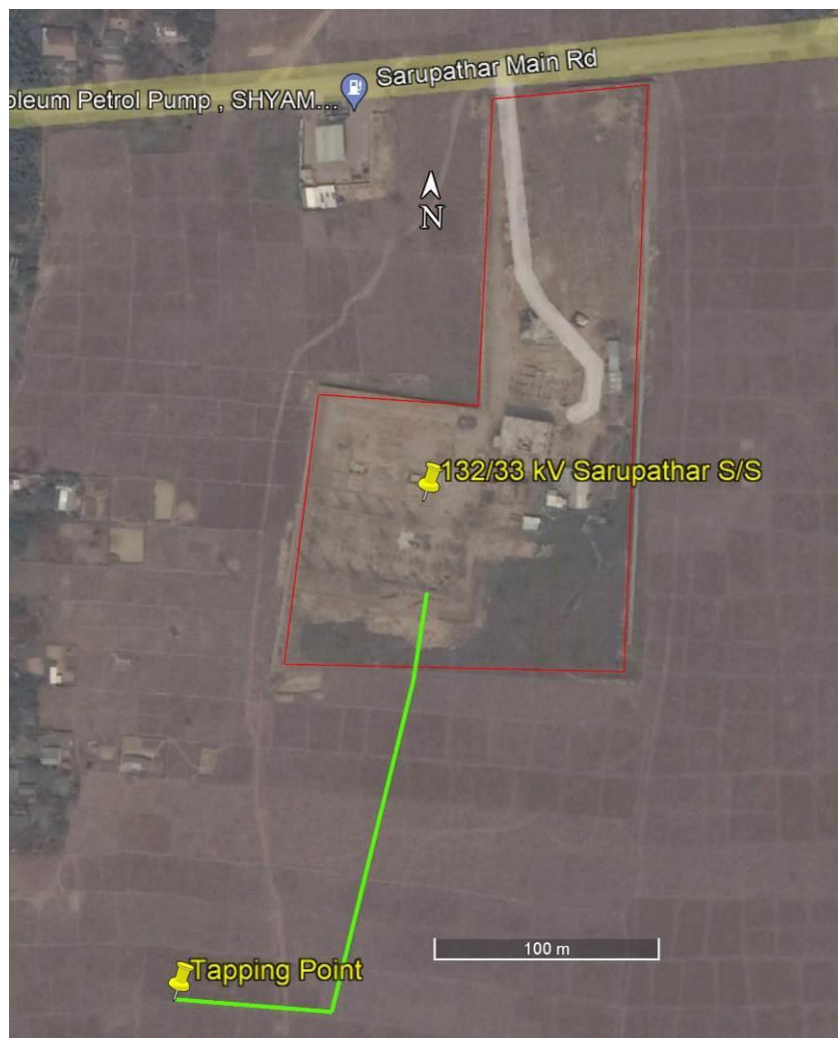


Figure 4.1: Satellite Imagery Showing Route of LILO of Golaghat – Bokajan 132 kV S/C line at Sarupathar

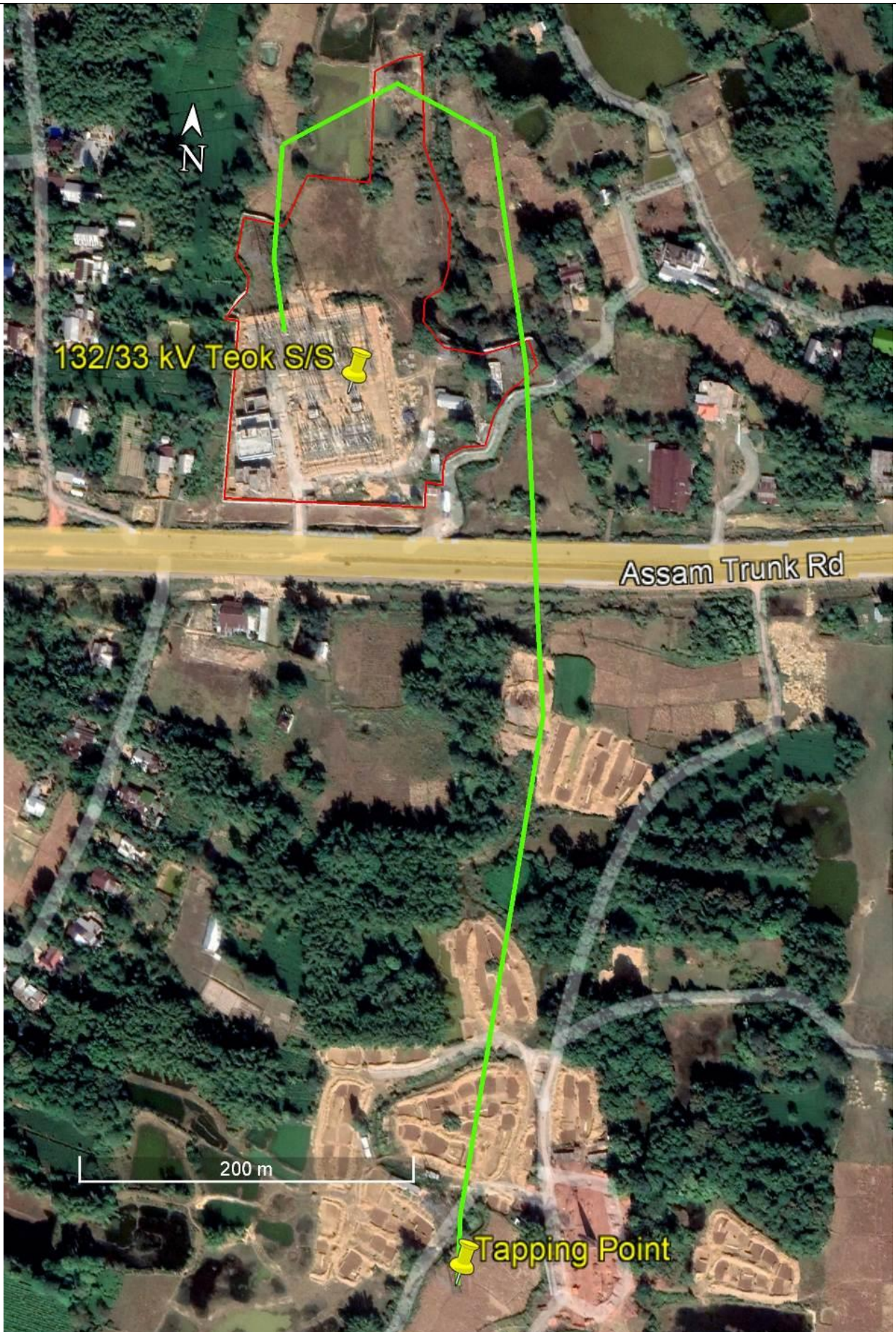


Figure 4.2: Satellite Imagery Showing Route of LILo of Jorhat (Gormur) – Nazira 132 kV S/S on D/C at Teok

4.2.2 Distribution Lines

The distribution line scope includes following subprojects:

- i. 33 kV line from 132/33 kV Shankardeo Nagar (existing) S/S to 33/11 kV Mailu (new) S/S – 20.572 km;
- ii. 33 kV line from 132/33 kV Samaguri (existing) S/S to 33/11 kV Hatimurah-II (new) S/S – 19.19 km;
- iii. 33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Teok (existing) S/S – 5.35 km;
- iv. 33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Kakojaan (existing) S/S – 20.53 km;
- v. 33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Zangi (existing) S/S – 6.281 km;
- vi. 33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Amguri (existing) S/S – 8.2 km;
- vii. 33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Barapathar (existing) S/S – 10.835 km;
- viii. 33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Sarupathar (existing) S/S – 5.763 km;
- ix. 33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Sariahjan (existing) S/S – 23.449 km;

Distribution lines not exceeding 10 kms and intending for providing power supply to the predestined areas have negligible environmental and social impacts. Hence alternative analysis study is not required for these lines. However, for distribution lines having line length of more than 10 kms, details of alternative route alignment study has been carried out. Here also, criteria for route selection as mentioned above, has been duly adhered to and the proposed distribution lines having length of more than 10 km have been selected from analysis of three (03) alternatives routes as described in the IEAR. Subsequently, the proposed route was considered for detail survey by Contractor Agency (after awarding of contract). For changes in scope of work with respect to IEAR scope i.e. changes in the route alignment based upon alternatives studies and detailed survey for distribution line is given in **Table 4.2**. Final route alignment of all distribution lines are given in **Figure 4.3** to **Figure 4.11**.

Table 4.2: Change in Scope of Work of Distribution Lines w.r.t. IEAR

S. No.	Scope as per IEAR/ CPTD	Current Status	Justification/ Remarks
1	33 kV line from 132/33 kV Shankardeo Nagar (existing) S/S to 33/11 kV Mailu (new) S/S – 29.67 km	33 kV line from 132/33 kV Shankardeo Nagar (existing) S/S to 33/11 kV Mailu (new) S/S – 20.572 km	Route of the line was changed so as to avoid the RoW issues and minimize environmental and social impacts. As a result route length was reduced by 9.098 km. Due to this reduction in line length social and environmental footprints have also decreased, also all the criteria for route selection as mentioned above have been duly adhered to during finalization of this new route.
2	33 kV line from 132/33 kV Samaguri (existing) S/S to 33/11 kV Hatimurah-II (new) S/S – 15.82 km	33 kV line from 132/33 kV Samaguri (existing) S/S to 33/11 kV Hatimurah-II (new) S/S – 19.19 km	Change in current status is due to the change in route as location of 33/11 kV Hatimurah-II substation has been changed as land owner & AEGCL/APDCL could not reach a common agreement. Although route length was increased by 3.37 km,

S. No.	Scope as per IEAR/CPTD	Current Status	Justification/ Remarks
			however, all the criteria for route selection as mentioned above, has been duly adhered to.
3	33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Teok (existing) S/S – 0.7 km	33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Teok (existing) S/S – 5.35 km	<p>Change in current status is due to the change in route. Earlier the route was planned along the NH-715, however, during detailed survey it was ascertained that due to the existing distributions lines minimum clearance for line is not available. Also, due to the widening of the NH-715 landowners have received good compensation and their expectations for compensation were same in case of pole erection and stringing operations. A slight shift by approx. 200 m in the 132/33 kV Teok substation also resulted in increase in the line length.</p> <p>Although route length was increased by 4.65 km, all the criteria for route selection as mentioned above, has been duly adhered to.</p>
4	33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Kakojaan (existing) S/S – 8.67 km	33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Kakojaan (existing) S/S – 20.53 km	<p>Change in current status is due to the change in route. This line and line mentioned at S. No. 3 consists of composite pole upto 33/11 kV Teok substation. Therefore, route of the line was changed upto 33/11 kV Teok substation due to the reasons mentioned at S. No. 3. Route of the stretch after 33/11 kV Teok substation was also changed so as to avoid the RoW issues and minimize environmental and social impacts.</p> <p>Although route length was increased by 11.86 km, however, all the criteria for route selection as mentioned above, has been duly adhered to. Moreover, line length was increased to minimize environmental impacts and avoid social issues.</p>
5	33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Zangi (existing) S/S – 6.84 km	33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Zangi (existing) S/S – 6.281 km	<p>Change in current status is due to the change in route as location of 132/33 kV Teok substation has been changed slightly as land owner & AEGCL/APDCL could not reach a common agreement.</p> <p>The change in substation location resulted in reduced line length by 0.559 km. However, all the criteria for route selection as mentioned above, has been duly adhered to.</p>
6	33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Pragati (existing) S/S – 12.2 km	33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Amguri (existing) S/S – 8.2 km	<p>Change in current status is due to the change in route as AEGCL/APDCL changed the scope i.e. changed the 33/11 kV substation from Pragati to Amguri substation. A slight shift by approx. 200 m in the 132/33 kV Teok substation also resulted in change of the line length.</p> <p>The said changes resulted in reduced line length by 4.0 km. However, all the criteria for route selection as</p>

S. No.	Scope as per IEAR/ CPTD	Current Status	Justification/ Remarks
			mentioned above, has been duly adhered to.
7	33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Barapathar (existing) S/S – 9 km	33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Barapathar (existing) S/S – 10.835 km	<p>Change in current status is due to the change in route as location of 132/33 kV Sarupathar substation has been slightly changed as land owner & AEGCL/APDCL could not reach a common agreement. Also, route of the line was changed so as to avoid the RoW issues and minimize environmental and social impacts.</p> <p>The change in substation location and route alignment resulted in increase of line length by 1.835 km. However, all the criteria for route selection as mentioned above, has been duly adhered to.</p>
8		33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Sarupathar (existing) S/S – 5.763 km	This component was not considered in the IEAR.
9	33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Sariahjan (existing) S/S – 20.17 km	33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Sariahjan (existing) S/S – 23.449 km	<p>Change in current status is due to the change in route as location of 132/33 kV Sarupathar substation has been slightly changed as land owner & AEGCL/APDCL could not reach a common agreement. Also, route of the line was changed so as to avoid the RoW issues and minimize environmental and social impacts.</p> <p>The change in substation location and route alignment resulted in increase of line length by 3.279 km. However, all the criteria for route selection as mentioned above, has been duly adhered to.</p>

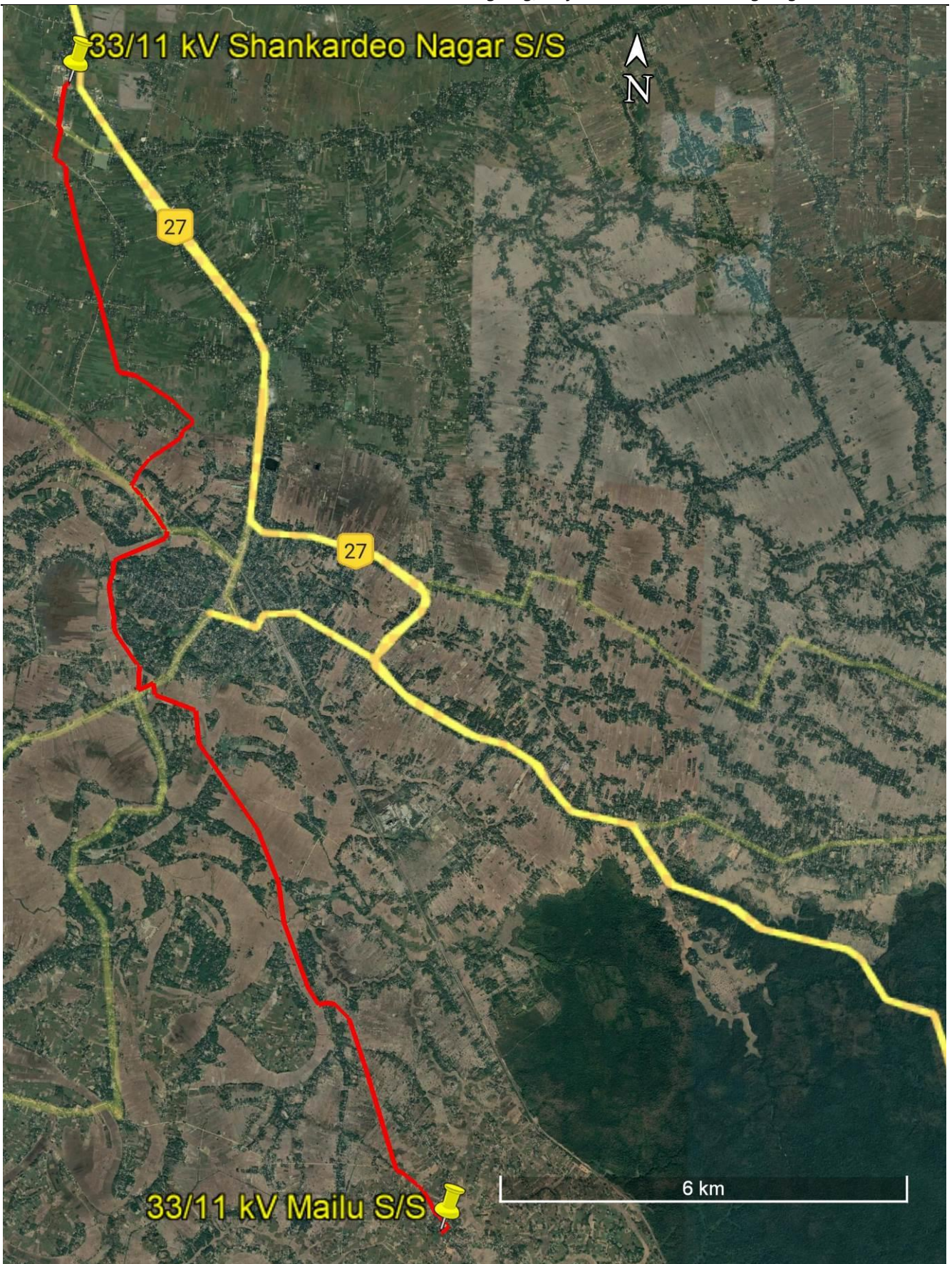


Figure 4.3: Satellite Imagery Showing Route of 33 kV line from 132/33 kV Shankardeo Nagar (existing) S/S to 33/11 kV Mailu (new) S/S

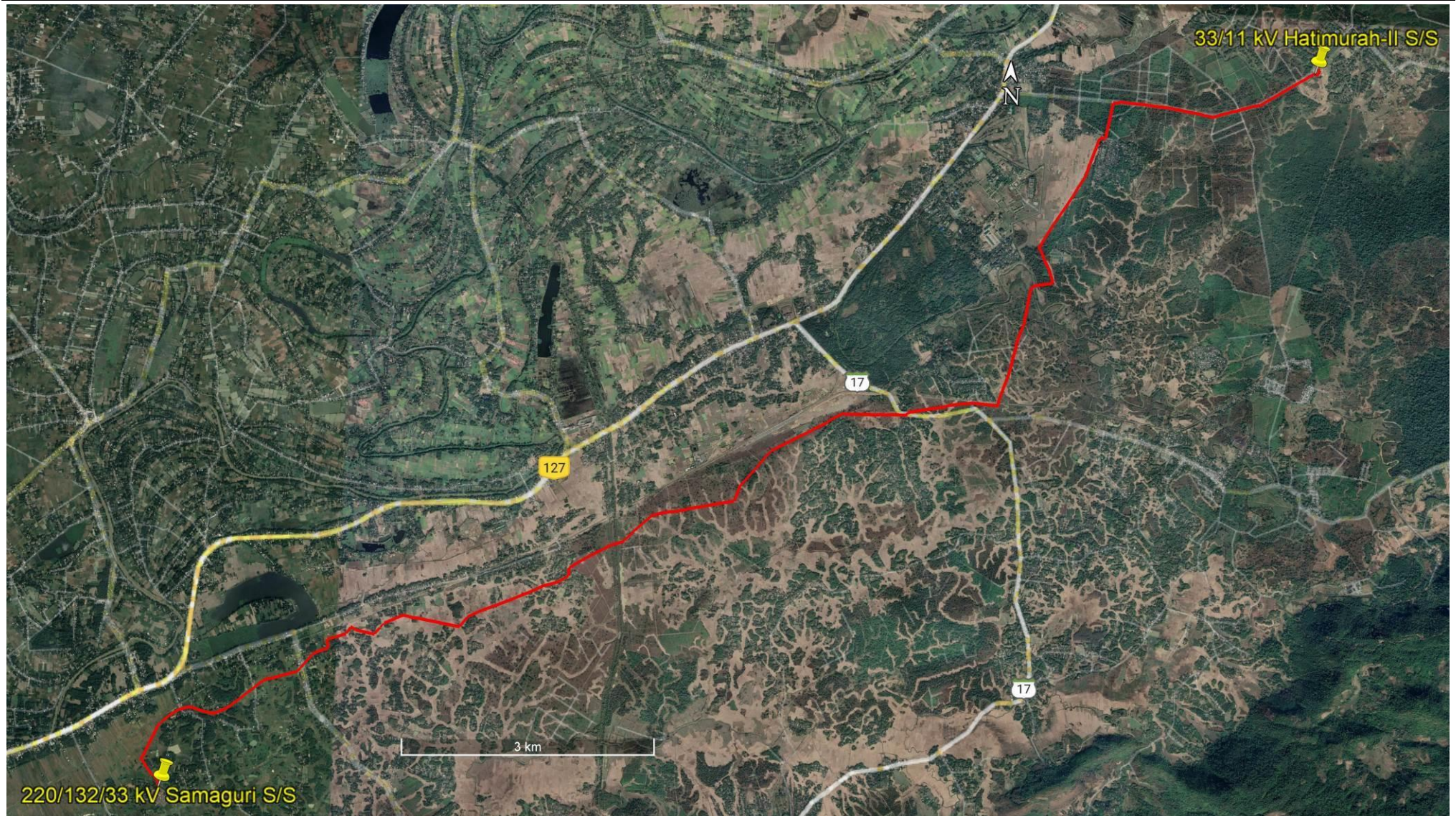


Figure 4.4: Satellite Imagery Showing Route of 33 kV line from 132/33 kV Samaguri (existing) S/S to 33/11 kV Hatimurah-II (new) S/S

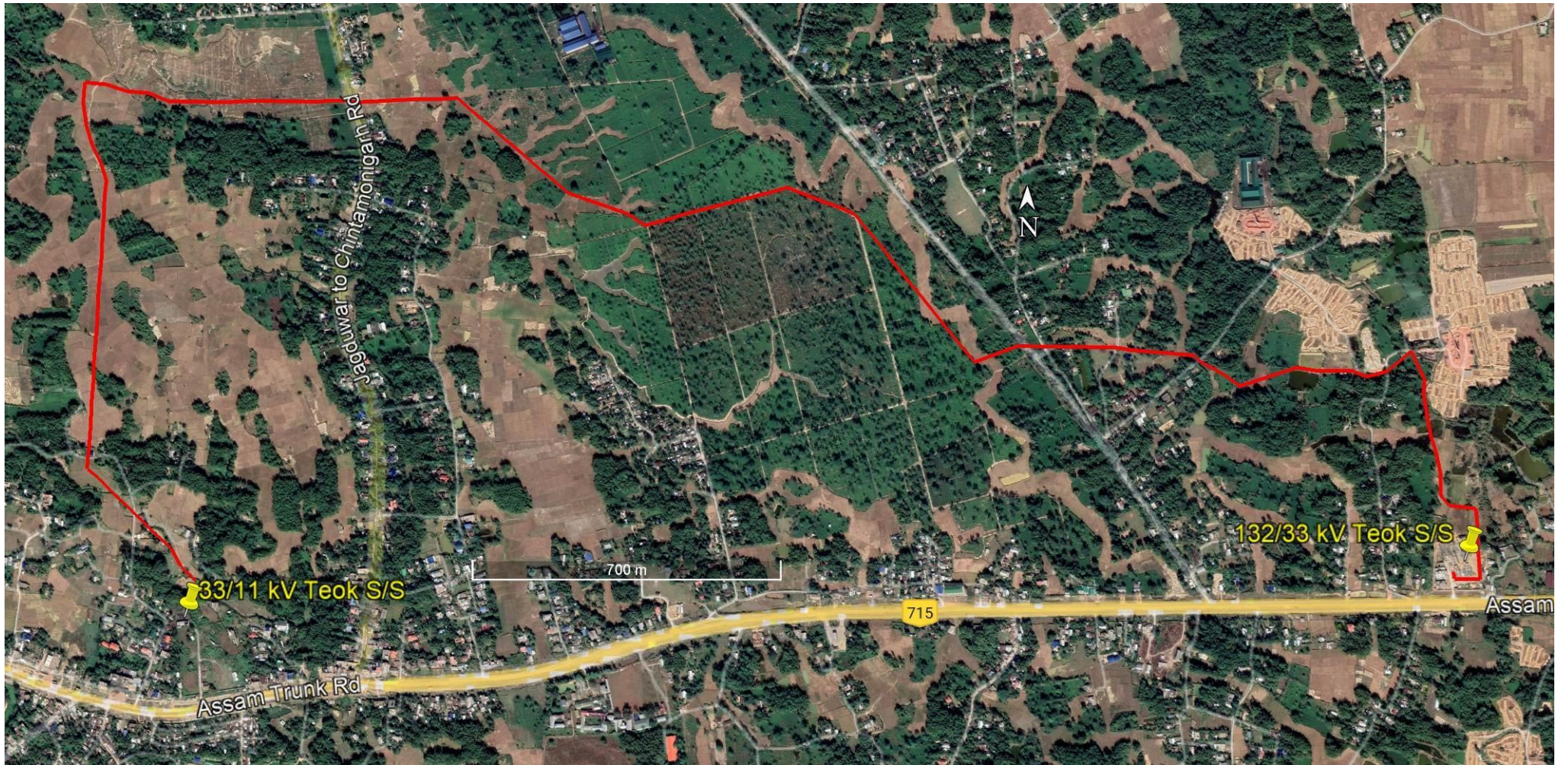


Figure 4.5: Satellite Imagery Showing Route of 33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Teok (existing) S/S



Figure 4.6: Satellite Imagery Showing Route of 33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Kakojan (existing) S/S

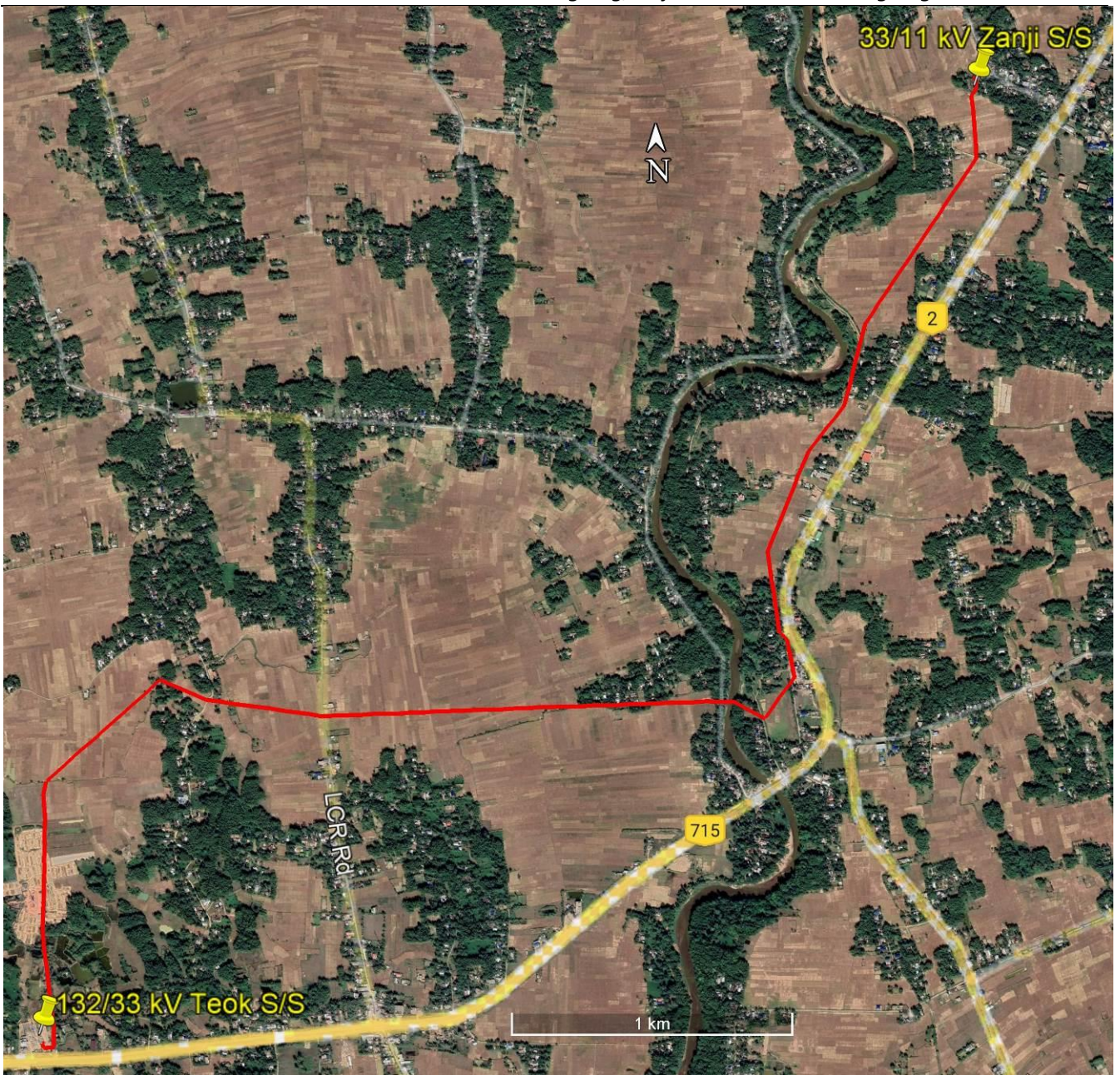


Figure 4.7: Satellite Imagery Showing Route of 33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Zanji (existing) S/S



Figure 4.8: Satellite Imagery Showing Route of 33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Amguri (existing) S/S

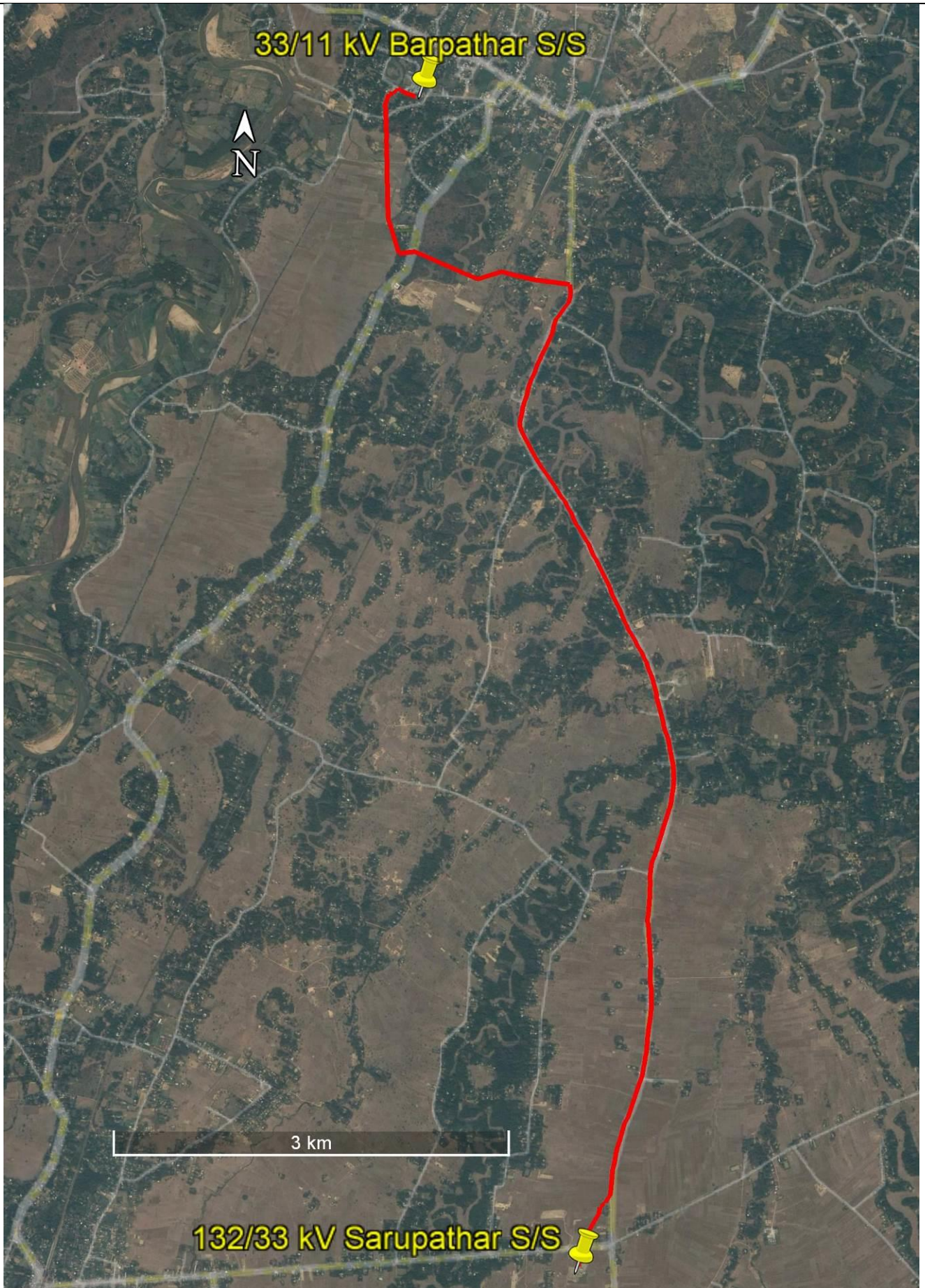


Figure 4.9: Satellite Imagery Showing Route of 33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Barpathar (existing) S/S

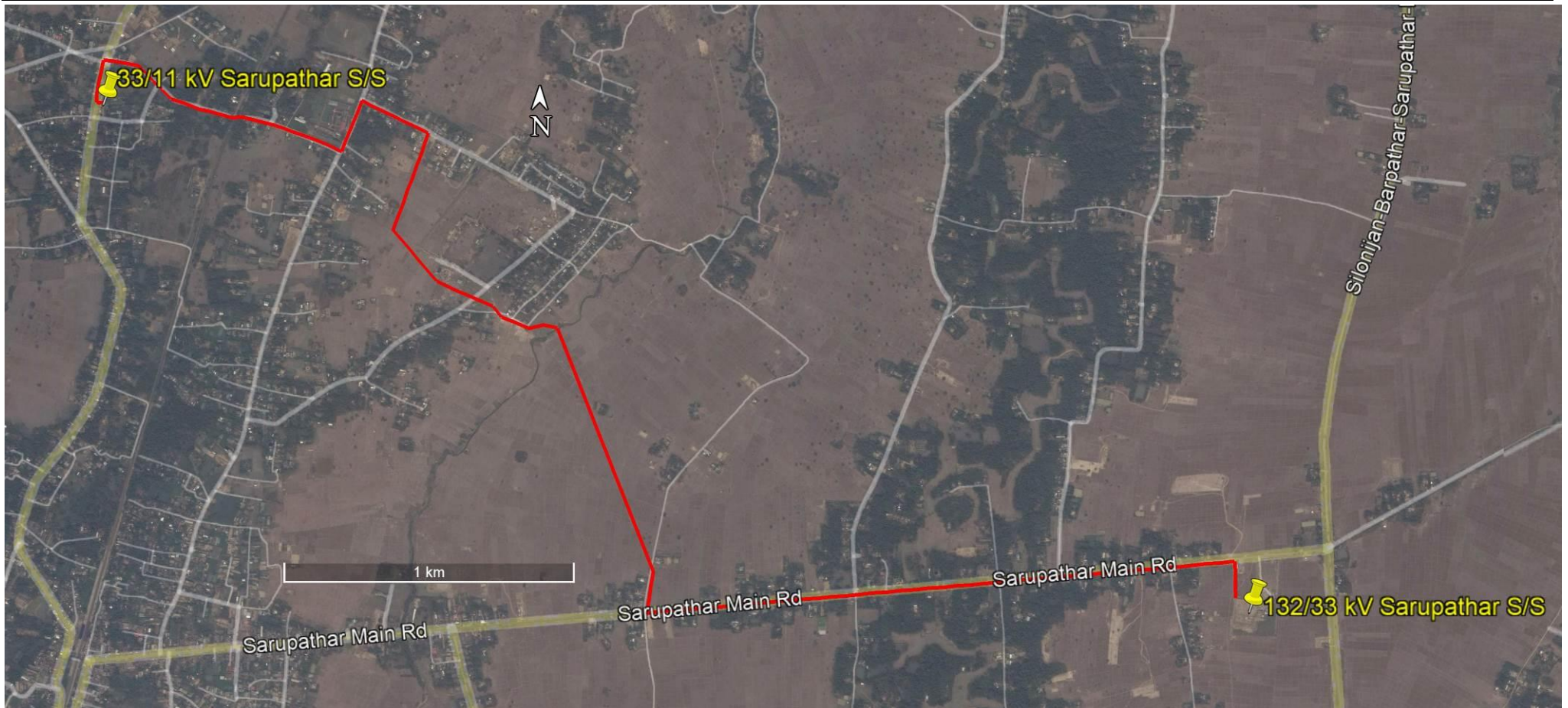


Figure 4.10: Satellite Imagery Showing Route of 33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Sarupathar (existing) S/S

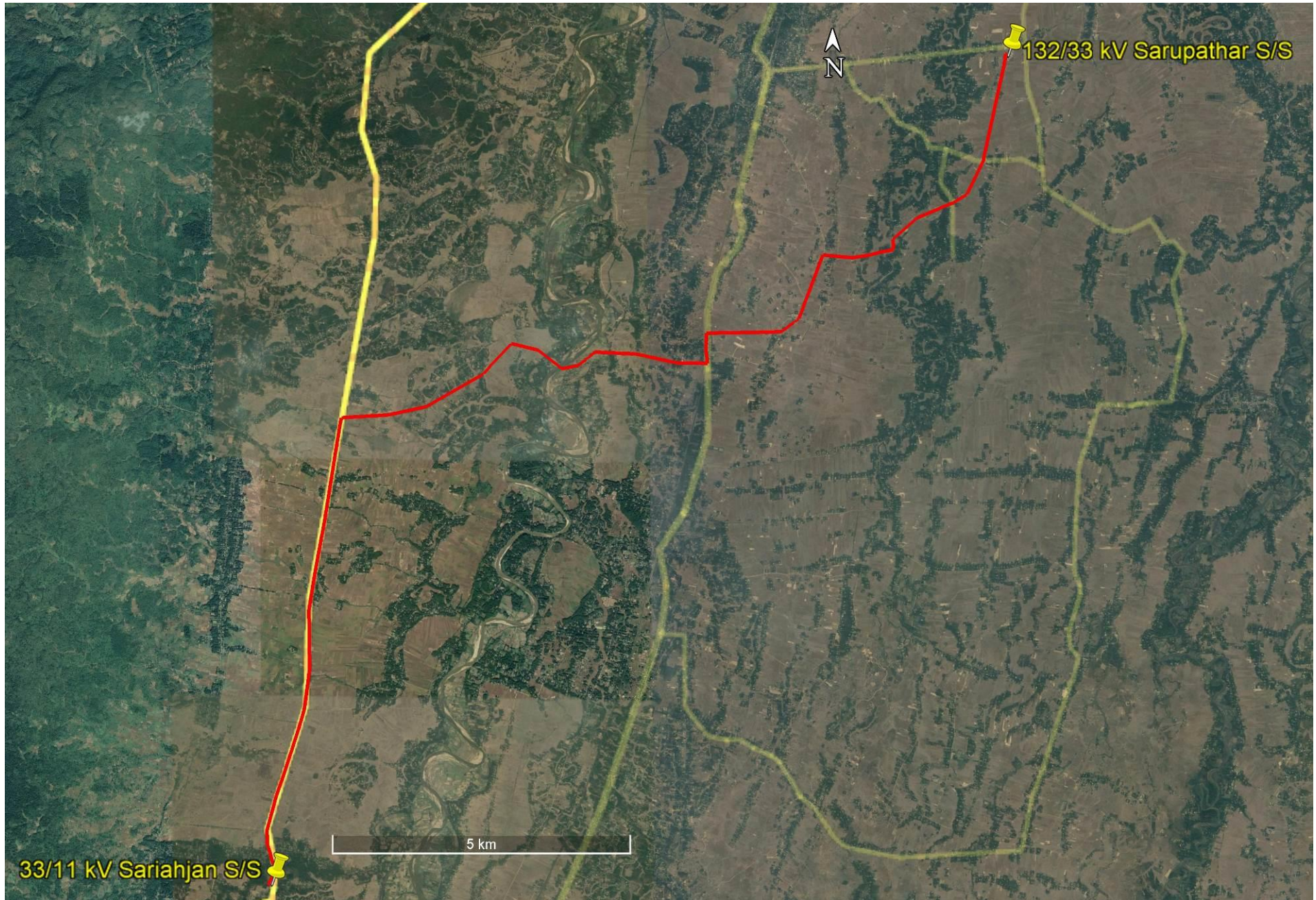


Figure 4.11: Satellite Imagery Showing Route of 33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Sariahjan (existing) S/S

4.2.3 Sub-stations

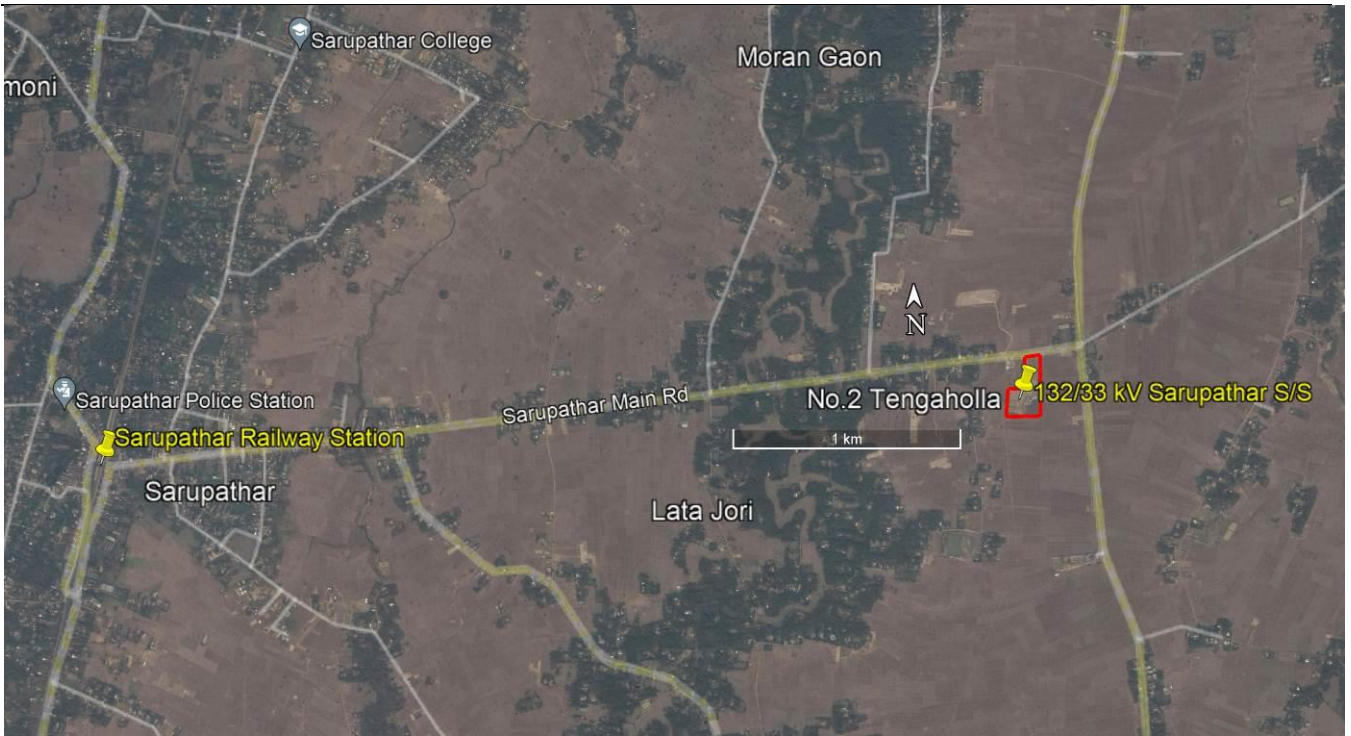
For sub-station, site selection analysis of 2-3 alternatives sites is usually carried out based on environment and social aspects and technical requirement. Such analysis considers various site-specific parameters that include availability of infrastructure facilities such as access roads, water, distance from railheads, type of land (Government/ revenue/private land); social impacts such as number of families getting affected; CPR including feasibility of acquisition. The finalization of substation land is done based on above analysis and site visit/verification. The social aspects are provided due weightage after technical requirement in decision making for selection/finalization of land for substation.

In the instant case also land for all the proposed substations, purchased on willing seller – willing buyer basis were acquired as per above mentioned analysis and site visit/ verification. Also, as per the provisions of ESPPF, all land directly purchased were reviewed/ approved by a broad-based committee comprising representatives of different sections including those from the IA and Govt. of Assam. The finalized location of transmission and distribution substations is given below in **Table 4.3**.

Table 4.3: Finalized Location of Transmission & Distribution Substation

S. No.	Name of Substation	Earlier Identified Land as per IEAR	Finalized Land (Actual)	Reason for Change
A	Transmission Substation			
1	132/33 kV new substation at Sarupathar (New)	Located adjacent to Sarupathar – Uriamghat PWD road and appx. 4.3 km from the Sarupathar Rly Station. The location is at Ekoranee village under Sarupathar Mouza, Dhansiri Revenue Circle of Golaghat District. Co-ordinates: 26°11'46.15" N, 93°54'22.05" E	Located adjacent to Sarupathar Main Road (Gelabil – Sirajuli Road). Approx. 4.0 km from Sarupathar Railway Station. The location is still at Ekoranee village under Sarupathar Mouza, Dhansiri Revenue Circle of Golaghat District. Around 300 m towards Sarupathar Railway Station from earlier location. Co-ordinates: 26°11'49.16"N, 93°54'8.75"E	Land owner & AEGCL/APDCL could not reach a common agreement.
2	132/33 kV new substation at Teok (New)	Located adjacent to NH-715 and appx. 2.5 km from Teok town. The location is at Changmai gaon village under Simoluguri Mouza, Teok Revenue Circle of Jorhat District. Co-ordinates: 26°50'20.30" N,	Still located adjacent to NH-715, however shifted towards east by approx. 200 m. The location is at Changmai gaon village under Simoluguri Mouza, Teok Revenue Circle of Jorhat District. Co-ordinates: 26°50'22.30"N,	Land owner & AEGCL/APDCL could not reach a common agreement.

S. No.	Name of Substation	Earlier Identified Land as per IEAR	Finalized Land (Actual)	Reason for Change
		94°27'48.48" E	94°27'56.71"E	
3	220/132/33 kV substation at Samaguri (Augmentation)	Within the Campus of 220/132/33 kV substation of AEGCL at Samaguri	Within the Campus of 220/132/33 kV substation of AEGCL	No change
B	Distribution Substation			
4	33/11 kV substation at Mailu (New)	In the existing plot of owned by APDCL at Mailu, Karbi Anglong West District. Co-ordinates: 25°50'14.17" N, 92°59'04.04" E	In the existing plot of owned by APDCL at Mailu, Karbi Anglong West District. Co-ordinates: 25°50'14.17" N, 92°59'04.04" E	No change
5	33/11 kV substation at Hatimurah-II (New)	Located adjacent to NH 127 and appx. 1 km from the Misa Rly. Station.	Located adjacent to road leading to Kellyden Tata Tea Packaging Unit. Apprx. 4 km from NH 127. The location is at Longdong Basti village under Anjukpani panchayat, Kaliabor tehsil of Nagaon District. Co-ordinates: 26°29'13.99"N, 92°58'51.95"	Land owner & AEGCL/APDCL could not reach a common agreement.
6	33/11 kV substation at Teok (Strengthening)	Within the Campus of 33/11 kV Teok substation of APDCL	Within the Campus of 33/11 kV Teok substation of APDCL	No change
7	33/11 kV substation at Kakojan (Strengthening)	Within the Campus of 33/11 kV Kakojan substation of APDCL	Within the Campus of 33/11 kV Kakojan substation of APDCL	No change
8	33/11 kV substation at ZANJI (Strengthening)	Within the Campus of 33/11 kV ZANJI substation of APDCL	Within the Campus of 33/11 kV ZANJI substation of APDCL	No change
9	33/11 kV substation at Amguri (Strengthening)	Within the Campus of 33/11 kV Amguri substation of APDCL	Within the Campus of 33/11 kV Amguri substation of APDCL	No change
10	33/11 kV substation at Barapathar (Strengthening)	Within the Campus of 33/11 kV Barapathar substation of APDCL	Within the Campus of 33/11 kV Barapathar substation of APDCL	No change
11	33/11 kV substation at Sariahjan (Strengthening)	Within the Campus of 33/11 kV Sariahjan substation of APDCL	Within the Campus of 33/11 kV Sariahjan substation of APDCL	No change



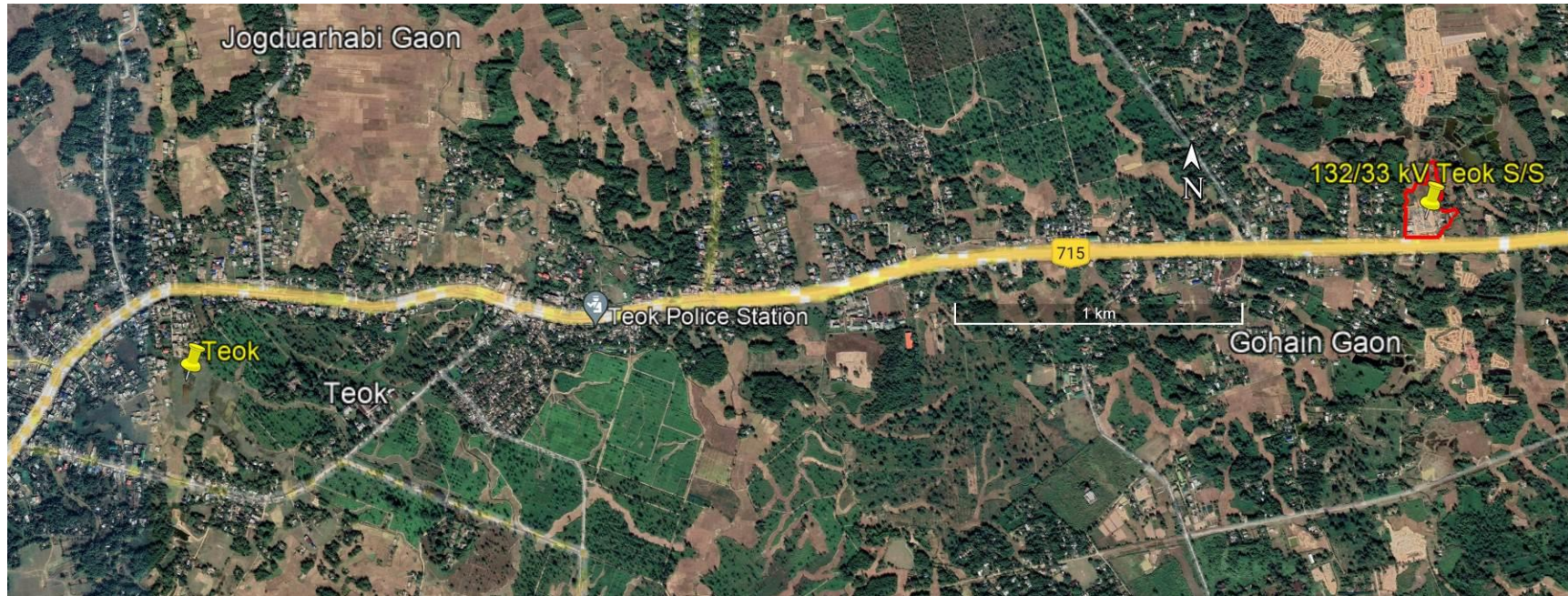
Location of 132/33 kV Sarupathar Substation (New)



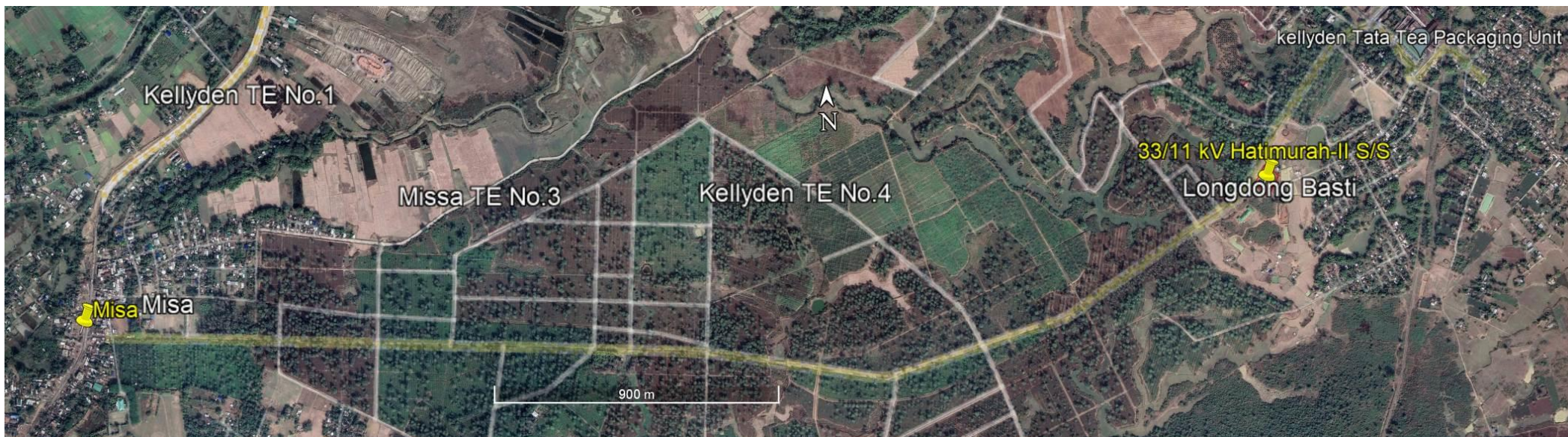
132/33 kV Sarupathar Substation (New)



132/33 kV Teok Substation (New)



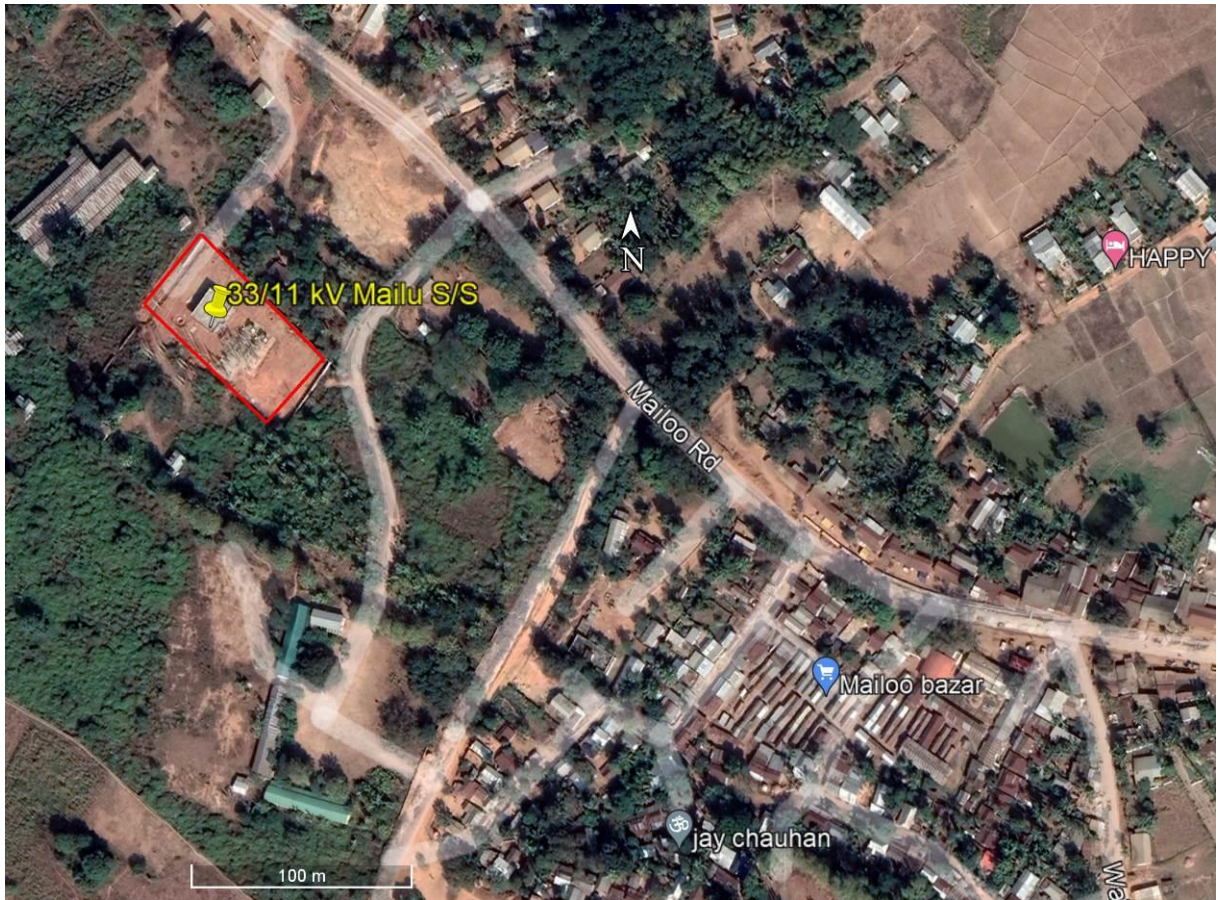
Location of 132/33 kV Teok Substation (New)



Location of 33/11 kV Hatimurah-II Substation (New)



33/11 kV Hatimurah-II Substation (New)



Location of 33/11 kV Mailu Substation (New)



33/11 kV Mailu Substation (New)



220/132/33 kV Samaguri Substation (Augmentation)



33/11 kV Teok Substation (Bay Extension)



33/11 kV Kakojan Substation (Bay Extension)



33/11 kV Zanji Substation (Bay Extension)



33/11 kV Amguri Substation (Bay Extension)



33/11 kV Barapathar Substation (Bay Extension)



33/11 kV Sariahjan Substation (Bay Extension)

4.3 MAJOR FEATURES OF FINAL ROUTE

4.3.1 Transmission Lines

Both the transmission lines are passing through plains. The landuse beneath the lines comprises of agricultural land, private plantation and govt. owned land (refer **Figure 4.1** and **Figure 4.2**). The lines do not pass through any settlement. The lines route doesn't involve any notified forest land which would necessitate forest clearance under Forest (Conservation) Act, 1980. Besides all protected areas like National Parks, Wildlife Sanctuaries, Biosphere Reserve etc.; Natural habitats, IBAs, Sacred groves, Wetlands etc. have been completely avoided. It

has been observed that there are variations in final route length of lines from earlier routes as locations of substations were changed. Due to these changes, length of final routes has been reduced by 0.786 km i.e. from 2.0 km to 1.214 km. These changes have not resulted any change in land use and other base line data, therefore, no additional impacts of any kind apart from earlier identified impacts in IEAR/EMP are anticipated. Moreover, length has been reduced, hence, environmental and social impacts have also been minimized. A total of only 10 towers are erected for both the proposed transmission lines having a total line length of only 1.214 km.

4.3.1.1 LILO of Golaghat – Bokajan 132 kV S/C line at Sarupathar

Total length of the line is 0.270 km and the entire line passes through govt. land. All protected areas like National Parks, Wildlife Sanctuaries, Biosphere Reserve etc.; Natural habitats, IBAs, Sacred groves, Wetlands etc. have been completely avoided. Any type of crossing have also been avoided. Due to the change in the 132/33 kV Sarupathar substation, line length of final route (**Table 4.1**) has been decreased by 0.73 km i.e. from 1.0 km to 0.270 km. Social and environmental impacts have been completely avoided, hence, no additional impacts of any kind apart from earlier identified impacts in IEAR/EMP were found. The line has a total of 3 towers only and the types of towers used are double circuit DD towers. All the tower locations are easily accessible through existing road to carryout construction and maintenance activity and construction of new approach road is not required. Details of tower schedule of final route alignment describing important features of line route are placed as **Annexure II**.



Route of Line Location of all the 3 Towers

4.3.1.2 LILO of Jorhat (Gormur) – Nazira 132 kV S/S on D/C at Teok

Total length of the line is 0.944 km, of which, 0.637 km of the line passes through agricultural land, 0.100 km passes through private plantation and the rest 0.207 km passes through govt. land. All protected areas like National Parks, Wildlife Sanctuaries, Biosphere Reserve etc.; Natural habitats, IBAs, Sacred groves, Wetlands etc. have been completely avoided. Major crossing en route of the line are:

- Nala between Tapping Tower and Tower No. 5/0.
- 33 kV between Tower No. 1/0 and Tower No. 2/0.
- National Highway between Tower No. 2/0 and Tower No. 3/0.

Due to the slight change in the 132/33 kV Teok substation and optimization during ground truthing survey, line length of final route (**Table 4.1**) has been slightly decreased by 0.056 km

i.e. from 1.0 km to 0.944 km. Due to this reduction in line length social and environmental footprints have also decreased, also all the criteria for route selection has been duly adhered to during finalization of this new route. Hence, no additional impacts of any kind apart from earlier identified impacts in IEAR/EMP were found.

The line has a total of 7 towers only and the types of towers used are double circuit DD towers. Due to various type of crossings, height of towers have been increased by 3 m, 6 m and 9 m. All the tower locations are easily accessible through existing road to carryout construction and maintenance activity and construction of new approach road is not required. Details of tower schedule of final route alignment describing important features of line route are placed as **Annexure II**.



Tapping Tower and Tower No. 1/0



Tower No. 2/0



Tower No. 3/0 and 4/0



Tower No. 5/0



Tower No. 6/0 and 7/0



Gantry/ Bay

4.3.2 Distribution Lines

All the distribution lines are passing through plains. The land use beneath the lines comprises of agricultural land, private plantation and govt. owned land and along existing roads and bunds (refer **Figure 4.3** to **Figure 4.11**). It has been observed that there are some slight as well as major variations in final route length of lines from earlier routes as locations of substations were changed, scope i.e. change in substation was changed, additional line was added. At places route has been changed so that environment & social sensitive areas are avoided/minimized and RoW issues are avoided. Due to these changes, length of final routes has been increased by 17.10 km i.e. from 103.070 km to 120.170 km. These changes have not resulted any major change in land use and other base line data, therefore, no additional impacts of any kind apart from earlier identified impacts in IEAR/EMP are anticipated. Moreover, length has also been increased so to avoid any RoW issues, hence, environmental and social impacts have also been minimized to a great extent. A total of around poles 3172 poles are erected for the proposed distribution lines having a total line length of 120.170 km.

4.3.2.1 33 kV line from 132/33 kV Shankardeo Nagar (existing) S/S to 33/11 kV Mailu (new) S/S

Total length of the line is 20.572 km, of which, 18.689 km of the line passes through agricultural land and the rest 1.883 km passes through private plantation. The selected line does not pass through any National Highway, settlement or any other critical environmental area. However, the line is crossing the following:

- 132 kV line between Four Pole (FP) AP-1 and Double Pole (DP) Loc-1/1
- 33 kV line between FP 1 and FP AP-1; between DP Loc-1/5 and DP Loc-1/6; between DP AP-2 and DP AP-3; between DP AP-27 and DP Loc-27/1.
- 11 kV line between DP Loc-5/4_1 and DP Loc-5/5; between DP AP-7 and DP AP-8; between Single Pole (SP) Loc-8/17 and SP Loc-8/18; between DP AP-10 and SP Loc-10/1; between DP AP-18 and FP AP-19; between DP Loc-22/1 and DP Loc-22/2; between DP AP-23 and DP Loc-23/1; between SP Loc-23/11 and SP Loc-23/12; between DP AP-24 and DP AP-25; between SP AP-26 and DP AP-27; between SP Loc-30/7 and SP Loc-30/8; between SP Loc-31/14 and SP Loc-31/15; between SP Loc-31/15 and SP Loc-31/16; between DP Loc-35/1 and DP AP-36; between DP AP-36 and DP Loc-36/1; between DP Loc-38/46 and DP Loc-38/47; between DP Loc-41/14 and DP AP-42.
- Nala between DP Loc-4/7 and FP AP-5; between SP Loc-20/11 and SP Loc-20/12; between SP Loc-28/8 and SP Loc-28/9; between SP Loc-30/11 and SP Loc-30/12; between SP Loc-32/11 and DP AP-33; between SP Loc-38/29 and SP Loc-38/30; between DP Loc-38/45 and DP Loc-38/46.
- Railway line between DP Loc-15/5 and DP AP-16.
- PWD village and village kachha road at several locations.

The line length of final route has been decreased by 9.098 km i.e. from 29.670 km to 20.572 km (refer **Table 4.2**). Due to this reduction in line length social and environmental footprints have also decreased. There is no change on the impacts anticipated on environmental and social aspects as all the criteria for route selection has been duly adhered to. No felling of tree will be required, only lopping of tree branches will suffice for ROW clearance. The line has total 541 poles. The types of poles used are SP, DP and FP. All the pole locations are easily

accessible through existing road to carryout construction and maintenance activity and construction of new approach road is not required. Detail of pole schedule of final route alignment is placed as **Annexure II**.



Route of the Line

4.3.2.2 33 kV line from 132/33 kV Samaguri (existing) S/S to 33/11 kV Hatimurah-II (new) S/S

Total length of the line is 19.19 km, of which, 6.50 km of the line passes through agricultural land, 5.40 km passes through private plantation and the rest 7.290 km passes through govt. land and along the road. The selected line does not pass through any National Highway, settlement or any other critical environmental area. However, the line is crossing the following:

- 220 kV line between DP AP-13 and DP Loc-13/1; between DP AP-20 and DP Loc-20/1; between DP Loc-22/16 and DP AP-23.

- 132 kV line between DP Loc-4/2 and DP Loc-4/3.
- 33 kV line between DP AP-1 and DP Loc-1/1; between DP Loc-1/1 and DP AP-2; between DP AP-3 and DP AP-4; between DP AP-5 and DP Loc-5/1; between DP Loc-5/1 and DP Loc-5/2; between DP Loc-5/2 and DP Loc-5/3; between DP Loc-35/10 and SP Loc-35/11; between SP AP-37 and SP AP-38.
- 11 kV line between DP Loc-6/6 and DP Loc-6/7; between SP Loc-35/14A and DP Loc-35/15; between SP Loc-44/1 and SP AP-45; between DP Loc-47/5 and DP Loc-47/6; between DP Loc-48/6 and DP Loc-48/7.
- Nala between DP AP-27 and DP Loc-27/1; between DP Loc-27/1 and DP AP-28.
- Diyu River between DP AP-40 and DP Loc-40/1.
- Railway line between DP AP-39 and DP Loc-39/1.
- PWD village and village kachha road at several locations.

The line length of final route has been increased by 3.370 km i.e. from 15.82 km to 19.190 km (refer **Table 4.2**). The line length has been increased due to the change in 33/11 Hatimurah-II substation and also to avoid any kind of RoW issues and social impacts and also to minimize environmental impacts. Although the route length has been increased there is no change on the impacts anticipated on environmental and social aspects as all the criteria for route selection has been duly adhered to. No felling of tree will be required, only lopping of tree branches will suffice for ROW clearance. The line has total 511 poles. The types of poles used are SP, DP and FP. All the pole locations are easily accessible through existing road to carryout construction and maintenance activity and construction of new approach road is not required. Detail of pole schedule of final route alignment is placed as **Annexure II**.



Route of the Line

4.3.2.3 33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Teok (existing) S/S

Total length of the line is 5.350 km, of which, 3.210 km of the line passes through agricultural land, 1.710 km passes through private plantation and the rest 0.430 km passes through govt. land. The selected line does not pass through any Railway crossings, National Highway, settlement or any other critical environmental area. However, the line is crossing 11 kV line between DP-9 and DP-10, between DP-24 and DP-25, between DP-28 and DP-29, between DP-81 and DP-82, between DP-99 and DP-100.

The line length of final route has been increased by 4.650 km i.e. from 0.7 km to 5.350 km (refer **Table 4.2**). Earlier the route was planned along the NH-715, however, during detailed survey it was ascertained that due to the existing distributions lines minimum clearance for line is not available. Also, due to the widening of the NH-715 landowners have received good compensation and their expectations for compensation were same in case of pole erection and stringing operations. A slight shift by approx. 200 m in the 132/33 kV Teok substation also resulted in increase in the line length. The line length has been increased to avoid any kind of RoW issues and social impacts and also to minimize environmental impacts. Although the route length has been increased there is no change on the impacts anticipated on environmental and social aspects as all the criteria for route selection has been duly adhered to. No felling of tree will be required, only lopping of tree branches will suffice for ROW clearance. The line has total 264 poles. Since the route of 33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Teok (existing) S/S and 33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Kakojan (existing) S/S is common from 132/33 kV Teok (new) S/S to 33/11 kV Teok (existing) S/S therefore the type of poles used are DP and FP. **All the pole locations are easily accessible through existing road to carryout construction and maintenance activity and construction of new approach road is not required.** Detail of pole schedule of final route alignment is placed as **Annexure II**.



Route of the Line



Route of the Line

4.3.2.4 33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Kakojan (existing) S/S

Total length of the line is 20.53 km, of which, 15.967 km of the line passes through agricultural land, 2.952 km passes through private plantation and the rest 1.611 km passes through govt. land. The selected line does not pass through any Railway crossings, National Highway, settlement or any other critical environmental area. However, the line is crossing 11 kV line between DP-9 and DP-10, between DP-24 and DP-25, between DP-28 and DP-29, between DP-81 and DP-82, between DP-99 and DP-100.

The line length of final route has been increased by 11.860 km i.e. from 8.67 km to 20.530 km (refer **Table 4.2**). The route of 33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Teok (existing) S/S and 33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Kakojan (existing) S/S is common from 132/33 kV Teok (new) S/S to 33/11 kV Teok (existing) S/S, therefore, the reason for change in route upto 33/11 kV Teok S/S is same for both the line. Route of the stretch after 33/11 kV Teok substation was also changed so as to avoid the RoW issues and minimize environmental and social impacts. Also, a slight shift by approx. 200 m in the 132/33 kV Teok substation also resulted in increase in the line length. The line length has been increased to avoid any kind of RoW issues and social impacts and also to minimize environmental impacts. Although the route length has been increased there is no change on the impacts anticipated on environmental and social aspects as all the criteria for route selection has been duly adhered to. **No felling of tree will be required, only lopping of tree branches will suffice for ROW clearance.** The line has total 390 poles. The type of poles used are SP, DP and FP. All the pole locations are easily accessible through existing road to carryout construction and maintenance activity and construction of new approach road is not required. Detail of pole schedule of final route alignment is placed as **Annexure II**.





Route of the Line

4.3.2.5 33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Zangi (existing) S/S

Total length of the line is 6.281 km, of which, 4.904 km of the line passes through agricultural land, 0.500 km passes through private plantation and the rest 0.877 km passes through govt. land. The selected line does not pass through any Railway crossings, National Highway, settlement or any other critical environmental area. However, the line is crossing 11 kV line between SP-38 and SP-39, between SP-66 and SP-67, between SP-108 and SP-109 and Zangi river between DP-7 and DP-8.

The line length of final route has been decreased by 0.559 km i.e. from 6.84 km to 6.281 km (refer **Table 4.2**) as location of the 132/33 kV Teok substation was slightly shifted. Due to this reduction in line length social and environmental footprints have also decreased. There is no change on the impacts anticipated on environmental and social aspects as all the criteria for route selection has been duly adhered to. No felling of tree will be required, only lopping of tree branches will suffice for ROW clearance. The line has total 177 poles. The types of poles used are SP, DP and FP. All the pole locations are easily accessible through existing road to carryout construction and maintenance activity and construction of new approach road is not required. Detail of pole schedule of final route alignment is placed as **Annexure II**.



Route of the Line

4.3.2.6 33 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Amguri (existing) S/S

Total length of the line is 8.20 km, of which, 5.116 km of the line passes through agricultural land, 2.841 km passes through private plantation and the rest 0.243 km passes through govt. land including fallow land/ scrub land and along the road. The selected line does not pass through any Settlement or any other critical environmental area. However, the line is crossing the following:

- National Highway – 715 between DP-1 and DP-2, between DP-20 and DP-21
- 400 kV line between SP-86 and SP-87
- 132 kV line between SP-3 and SP-4, between SP-68 and SP-69, between SP-76 and SP-77, between DP-23 and SP-123
- 11 kV line between SP-20 and SP-21, between DP-8 and SP-39, between SP-57 and SP-58, between Sp-70 and SP-71, between SP-82 and SP-83, between SP-97 and SP-98, between SP-110 and SP-111, between SP-120 and SP-121, between SP-124 and SP-125, between DP-25 and SP-128.
- Zanji River between DP-10 and DP-11.
- Railway line between DP-27 and DP-28.
- PWD village and village kachha road at few locations.

As per IEAR, the scope of work was 33/11 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Pragati (existing) S/S, however, AEGCL/APDCL changed the scope to 33/11 kV line from 132/33 kV Teok (new) S/S to 33/11 kV Amguri (existing) S/S. The changed route length is 8.20 km. Though the scope has changed, however there is no change on the impacts anticipated

on environmental and social aspects as all the criteria for route selection has been duly adhered to. No felling of tree will be required, only lopping of tree branches will suffice for ROW clearance. The line has total 197 poles. The types of poles used are SP, DP and FP. All the pole locations are easily accessible through existing road to carryout construction and maintenance activity and construction of new approach road is not required. Detail of pole schedule of final route alignment is placed as **Annexure II**.



Route of the Line

4.3.2.7 33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Barapathar (existing) S/S

Total length of the line is 10.835 km, of which, 2.230 km of the line passes through agricultural land, 0.529 km passes through private plantation and the rest 8.076 km passes through govt.

land and along the road. The selected line does not pass through any National Highway, settlement or any other critical environmental area. However, the line is crossing Railway line between DP-29 and DP-30, State Highway between DP-32 and DP-33 and 66 kV line between SP-191 and SP-192.

The line length of final route has been increased by 1.835 km i.e. from 9.0 km to 10.835 km (refer **Table 4.2**). The line length has been increased due to the change in 132/33 kV Sarupathar substation and also to avoid any kind of RoW issues and social impacts and also to minimize environmental impacts. Although the route length has been increased there is no change on the impacts anticipated on environmental and social aspects as all the criteria for route selection has been duly adhered to. No felling of tree will be required, only lopping of tree branches will suffice for ROW clearance. The line has total 337 poles. The types of poles used are SP, DP and FP. All the pole locations are easily accessible through existing road to carryout construction and maintenance activity and construction of new approach road is not required. Detail of pole schedule of final route alignment is placed as **Annexure II**.



Route of the Line



Route of the Line

4.3.2.8 33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Sarupathar (existing) S/S

Total length of the line is 5.763 km, of which, 1.944 km of the line passes through agricultural land, 0.778 km passes through private plantation and the rest 3.041 km passes through govt. land including fallow land/ scrub land and along the road. The selected line does not pass through any National Highway, settlement or any other critical environmental area. However, the line is crossing Railway line between DP-11 and DP-12.

Initially this line was not included in the scope of work therefore it was not considered in IEAR. Since all the criteria for route selection has been duly adhered to therefore there major environmental impact is anticipated. Social impacts have been duly avoided. No felling of tree will be required, only lopping of tree branches will suffice for ROW clearance. The line has total 168 poles. The types of poles used are SP, DP and FP. All the pole locations are easily accessible through existing road to carryout construction and maintenance activity and construction of new approach road is not required. Detail of pole schedule of final route alignment is placed as Annexure II.



Route of the Line



Route of the Line

4.3.2.9 33 kV line from 132/33 kV Sarupathar (new) S/S to 33/11 kV Sariahjan (existing) S/S

Total length of the line is 23.449 km, of which, 19.220 km of the line passes through agricultural land, 1.868 km passes through private plantation and the rest 2.361 km passes through govt. land and along the road. The selected line does not pass through any Settlement or any other critical environmental area. However, the line is crossing Railway line between FP-6 and SP-171 and National Highway 129 between FP-9 and SP-305.

The line length of final route has been increased by 3.279 km i.e. from 20.17 km to 23.449 km (refer **Table 4.2**). The line length has been increased due to the change in 132/33 kV Sarupathar substation and also to avoid any kind of RoW issues and social impacts and also to minimize environmental impacts. Although the route length has been increased there is no change on the impacts anticipated on environmental and social aspects as all the criteria for route selection has been duly adhered to. No felling of tree will be required, only lopping of tree branches will suffice for ROW clearance. The line has total 587 poles. The types of poles used are SP, DP and FP. All the pole locations are easily accessible through existing road to carryout construction and maintenance activity and construction of new approach road is not required. Detail of pole schedule of final route alignment is placed as **Annexure II**.



Route of the Line



Route of the Line

Chapter
5**POTENTIAL ENVIRONMENTAL IMPACTS,
EVALUATION AND ITS MANAGEMENT****5.1 INTRODUCTION**

Environmental impacts of Transmission & Distribution (T & D) projects are not far reaching and are mostly localized to RoW (refer **Table 5.1**). However, T & D projects have some effects on natural and socio-culture resources. All possible measures have been taken during the finalization of route alignment as described in the earlier chapter for the proposed transmission/distribution system, however, due to the peculiarity of terrain where project is being implemented, some environmental impacts may be there. The explanations in brief with regard to possible environmental impact and measures taken to minimize the same are given in ensuing paragraph.

Table 5.1: RoW Width

Transmission Voltage	Max RoW (m)
132 kV	27
33 kV	15

5.2 IMPACT DUE TO PROJECT LOCATION**5.2.1 Resettlement**

Land is required for

- a) construction of substations and
- b) erection of transmission line

5.2.1.1 Construction of Substation

The project component consists of establishment of two new 132/33 kV substations at Sarupathar and Teok and two new 33/11 kV sub-stations at Mailu and Hatimurah-II. For the establishment of sub-stations fresh lands were either secured through private purchased on negotiated rates based on “willing buyer-willing seller basis” or were already in possession of AEGCL/ APDCL. A total of only 7.27 acre land has been secured for one 132/33 kV substation from 2 private persons who willing sold their land. Since, no involuntary acquisition was involved and fresh lands were secured only through private purchase there is no R & R and resettlement issues. The details are provided below in **Table 5.2**.

Table 5.2: Details of Land Securing Method for New Sub-stations

S. No.	Name of Sub-station	Land Area (acre)	No. of Land Owner	Land Securing Method
A	Transmission Scheme			
1	132/33 kV at Sarupathar	7.27	NA	AEGCL Land
2	132/33 kV at Teok	7.27	2	willing buyer-willing seller basis
B	Distribution Scheme			

S. No.	Name of Sub-station	Land Area (acre)	No. of Land Owner	Land Securing Method
3	33/11 kV at Mailu	1.9	NA	APDCL Land
4	33/11 kV at Hatimurah-II	0.96	NA	

Source: Detailed Survey of POWERGRID/ Contractor

5.2.1.2 Erection of Transmission Line

In respect of land required for the erection of transmission line, no permanent acquisition is envisaged. Land for tower and right of way is not acquired as existing activities can continue. As explained in previous chapter during line routing stage itself all measures have been undertaken by AEGCL/APDCL/IA to avoid settlements such as cities, villages etc. in line with the guiding principle of avoidance as per ESPPF. From the description of proposed route alignments and also keeping in mind that no permanent acquisition of land is involved for tower foundation as per existing law, the project does not require any resettlement of villagers. However, some temporary damages/ disturbances can happen. Same is being compensated to minimize the damages and provide compensation for temporary damages in consultation with the state government and affected persons and/ or community. Details of the loss on the land due to the temporary damages/ disturbances is provided in the ensuing paragraphs.

5.2.1.2.1 Loss of Land for Tower Base & Pole

As per the assessment carried out in CPTD by PGCIL and detailed survey, the land requirement for erection of tower legs is very small i.e. for each leg of tower actual construction is done on a small square area with side length ranging from 0.20 to 0.30 meter depending on the types of tower. Four such square pieces of land will be required to place the legs of tower. The area that becomes unavailable because of the erection of tower legs for an average 132 kV transmission tower ranges from 0.16-0.36 sq m of land. Thus, the actual impact is restricted to 4 legs of the tower and existing activities can continue as clearly depicted in the **Figure 5.1**. In case of 33 kV distribution line area that becomes unavailable because of the erection of pole is insignificant as approx. 1 sq. ft. land area is occupied for one pole (refer **Figure 5.2**). Due diligence confirms that current land use is not altered and resumed after construction.

As already explained, the impact of transmission line is restricted to 4 legs of the tower and existing activities can continue after construction activity is over. The average land area will be unavailable for existing activities after erection of one 132 kV T/L tower and one pole for 33 kV D/L is approx. 0.25 sq m & 0.092 sq m, respectively. Based on above, total land loss for construction of 1.214 km of 132 kV transmission lines and 120.170 km of 33 kV distribution lines proposed under the present scheme is estimated as 294.324 sq m or 0.0727 acre. Details of land loss for tower base & pole are given in **Table 5.3**.

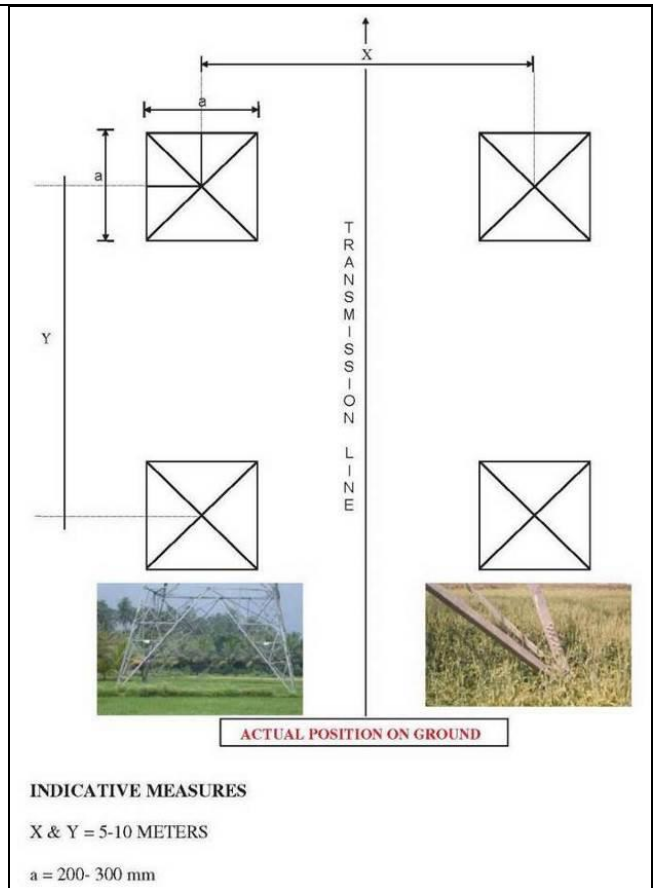


Figure 5.1: Typical Plan of Transmission Line Tower Footing Showing actual Ground Position and Extent of Impact



Figure 5.2: 33 kV Lines (Single & H Pole) Depicting Base Area Impact

Table 5.3: Estimation of Actual Loss of Land for Tower Base & Pole

S. No.	Name of Line	Line Length (Kms.)	Total Tower/ Pole (Nos.)	Land loss per tower/ pole base (sq m)	Total land loss area for tower & pole base (sq m)
A	Transmission Lines				
1	LILO of Golaghat – Bokajan 132 kV S/C line at Sarupathar	0.270	3	0.25	0.750
2	LILO of Jorhat (Gormur) – Nazira 132 kV S/S on D/C at Teok	0.944	7	0.25	1.750
	TOTAL - A	1.214	10		2.500
B	Distribution Lines				
3	132/33 kV Shankardeo Nagar S/S to 33/11 kV Mailu S/S	20.572	541	0.092	49.772
4	132/33 kV Samaguri S/S to 33/11 kV Hatimurah-II S/S	19.190	511	0.092	47.012
5	132/33 kV Teok S/S to 33/11 kV Teok S/S	5.350	264	0.092	24.288
6	132/33 kV Teok S/S to 33/11 kV Kakojan S/S	20.530	390	0.092	35.880
7	132/33 kV Teok S/S to 33/11 kV ZANJI S/S	6.281	177	0.092	16.284
8	132/33 kV Teok S/S to 33/11 kV Amguri S/S	8.200	197	0.092	18.124
9	132/33 kV Sarupathar S/S to 33/11 kV Barapathar S/S	10.835	337	0.092	31.004
10	132/33 kV Sarupathar S/S to 33/11 kV Sarupathar S/S	5.763	168	0.092	15.456
11	132/33 kV Sarupathar S/S to 33/11 kV Sariahjan S/S	23.449	587	0.092	54.004
	TOTAL - B	120.170	3172		291.824
	TOTAL A+B	121.384	3182		294.324 (0.0727 acre)

Source: Detailed Survey of POWERGRID/ Contractor

5.2.2 Impact on Crop Area (RoW Corridor & Tower/ Pole)

Construction of line in crop season is avoided as far as possible. In case when installation of towers/poles impacts on agricultural activity, detailed assessment/survey is conducted looking at existing crops, general crop patterns, seasonal particulars, nature and extent of yield. This data is compiled and analysed to study the extent and nature of impact.

For the temporary loss of crops, only agricultural land and private plantation land are considered for estimation. The damages are not done in complete RoW of line but mostly restricted to tip to tip of the conductor and tower base area where average affected width/corridor would be limited to 20 m (maximum) instead of RoW of 27 m for for 132 kV. In 33 kV distribution lines, damages are minimal (mostly near bi-pole/quad-pole structure) however, 10 m corridor is considered for accessing the damages. Moreover, all efforts were made to reduce the damages to crops and to minimize the impacts whatsoever. One of the reasons is that schedules of construction activities are undertaken in lean season or post-harvest periods. Assets of any sorts were not acquired but during construction, only temporary damages occurred for which the compensation has been/ is being paid to affected persons as per entitlement matrix. As per the entitlement matrix, compensation for the damage to the crop area is paid to the actual cultivator at market rate.

Based on the above estimation, the total land considered for crop compensation for transmission/distribution line corridor and tower/pole foundation for the entire subproject covered under the scope of above CPTD is 241.382 acre. Details of estimated impacted area for crop damages is given in **Table 5.4**.

Table 5.4: Estimation on Loss of Land for Crop Damage due to Overhead Lines

S. No.	Name of the Line	Width Considered for Estimation of Loss of Crops and other impacts (m)	Total Agricultural Land (km)	Total Private Plantation (km)	Total Line Length Considered for Crop Compensation (km)	Total Land Area considered for Crop Compensation (acre)
A	Transmission Lines					
1	LILO of Golaghat – Bokajan 132 kV S/C line at Sarupathar	20	0.000	0.000	0.000	0.000
2	LILO of Jorhat (Gormur) – Nazira 132 kV S/S on D/C at Teok	20	0.637	0.100	0.737	3.640
	TOTAL - A		0.637	0.100	0.737	3.640
B	Distribution Lines					
3	132/33 kV Shankardeo Nagar S/S to 33/11 kV Mailu S/S	10	18.689	1.883	20.572	50.832
4	132/33 kV Samaguri S/S to 33/11 kV Hatimurah-II S/S	10	6.500	5.400	11.900	29.400
5	132/33 kV Teok S/S to 33/11 kV Teok S/S	10	3.210	1.710	4.920	12.150
6	132/33 kV Teok S/S to 33/11 kV Kakojan S/S	10	15.967	2.952	18.919	46.738
7	132/33 kV Teok S/S to 33/11 kV ZANJI S/S	10	4.904	0.500	5.404	13.350
8	132/33 kV Teok S/S to 33/11 kV Amguri S/S	10	5.116	2.841	7.957	19.653
9	132/33 kV Sarupathar S/S to 33/11 kV Barapathar S/S	10	2.230	0.529	2.759	6.814
10	132/33 kV Sarupathar S/S to 33/11 kV Sarupathar S/S	10	1.944	0.778	2.722	6.726
11	132/33 kV Sarupathar S/S to 33/11 kV Sariahjan S/S	10	19.220	1.868	21.088	52.078
	TOTAL - B		77.780	18.461	96.241	237.742
	TOTAL A+B		78.417	18.561	96.978	241.382

Source: Detailed Survey of POWERGRID/Contractor

5.2.3 Impact on Trees

Construction of line in fruit bearing season is avoided as far as possible. Tree compensation is calculated on the basis of tree enumeration, tree species and an estimate of the compensation will be calculated on the basis of 8 years yield (assessed by revenue/horticulture department).

Total number of trees affected/ likely to be affected due to the construction of 1.214 km of 132 kV transmission lines and 120.170 km of 33 kV distribution lines is approx. 2590. Out of 2590 trees, 1618 trees are on private land and 972 trees in govt. land. **Most of the trees affected/ likely to be affected are fruit bearing trees and not timber trees.** Details on number of trees for each line are given in **Table 5.5**.

Table 5.5: Details of Impact on Trees

S. No.	Name of Line	Trees on Private Land (No.)	Trees on Govt. Land (No.)	Total Trees (No.)
A	Transmission Lines			
1	LILO of Golaghat – Bokajan 132 kV S/C line at Sarupathar	0	0	0
2	LILO of Jorhat (Gormur) – Nazira 132 kV S/S on D/C at Teok	20	0	20
	TOTAL - A	Only Trimming required	0	Only Trimming required
B	Distribution Lines			
3	132/33 kV Shankardeo Nagar S/S to 33/11 kV Mailu S/S	Only Trimming required	0	Only Trimming required
4	132/33 kV Samaguri S/S to 33/11 kV Hatimurah-II S/S	Only Trimming required	0	Only Trimming required
5	132/33 kV Teok S/S to 33/11 kV Teok S/S	165	63	228
6	132/33 kV Teok S/S to 33/11 kV Kakojan S/S	310	102	412
7	132/33 kV Teok S/S to 33/11 kV Zanzi S/S	132	17	149
8	132/33 kV Teok S/S to 33/11 kV Amguri S/S	91	0	91
9	132/33 kV Sarupathar S/S to 33/11 kV Barapathar S/S	300	200	500
10	132/33 kV Sarupathar S/S to 33/11 kV Sarupathar S/S	250	450	700
11	132/33 kV Sarupathar S/S to 33/11 kV SariahjanS/S	350	140	490
	TOTAL - B	1598	972	2570
	TOTAL A+B	1618	972	2590

Source: Detailed Survey of POWERGRID/ Contractor

5.2.4 Affected Persons

Affected Persons (APs) are those who are affected due to the various civil works like damage to trees due to pollarding/ pruning or some partial damage to produces during stringing. Though the impact is temporary. Till date, 15 numbers of affected persons have been identified. It is once again pertinent to mention here that persons got affected due to some temporary damages which lasted during construction phase only. The persons details are given in **Table 5.6**. The number of APs in the table refers to the most conservative option. State Utilities/ POWERGRID scheduled the civil works in such a way to minimize impacts and substantially reduce the damages to crops and therefore the number of affected persons and Agricultural Households (AHH).

Table 5.6: Details of Affected Persons

S. No.	Name of Line	Total APs (No.)
A	Transmission Lines	
1	LILO of Golaghat – Bokajan 132 kV S/C line at Sarupathar	Nil
2	LILO of Jorhat (Gormur) – Nazira 132 kV S/S on D/C at Teok	15
B	Distribution Lines	
3	132/33 kV Shankardeo Nagar S/S to 33/11 kV Mailu S/S	Nil
4	132/33 kV Samaguri S/S to 33/11 kV Hatimurah-II S/S	Nil
5	132/33 kV Teok S/S to 33/11 kV Teok S/S	Not yet Identified
6	132/33 kV Teok S/S to 33/11 kV Kakojan S/S	Not yet Identified
7	132/33 kV Teok S/S to 33/11 kV Zanji S/S	Not yet Identified
8	132/33 kV Teok S/S to 33/11 kV Amguri S/S	Not yet Identified
9	132/33 kV Sarupathar S/S to 33/11 kV Barapathar S/S	Not yet Identified
10	132/33 kV Sarupathar S/S to 33/11 kV Sarupathar S/S	Not yet Identified
11	132/33 kV Sarupathar S/S to 33/11 kV SariahjanS/S	Not yet Identified

Source: Detailed Survey of POWERGRID/ Contractor

5.2.5 Other Damages

Till date, other damages like bunds, water bodies, fish ponds, approach paths, drainage and irrigation canals etc. have been avoided. However, if damaged in future, the Revenue Department will assess the cost of damage as per State Govt. norms. The total estimate will be submitted for approval to the competent authority. Payments will be made to owners in the presence of local revenue authorities or village head/ Sarpanch and respective acknowledgements will be obtained and POWERGRID/ AEGCL/ APDCL will pay the compensation. Hindrances to power, telecom carrier & communication lines etc. will be paid as per Govt. norms.

5.2.6 Land Value Depreciation

It is evident that electric power being an enabler sector acts as a catalyst for the growth and development of areas having accessibility to it. Based on past experience land prices are generally expected to rise in the areas receiving power. In the present project, transmission lines pass through agriculture fields, private plantation area and govt. land (mostly uninhabited and scrub land), where the land-use is not going to change in foreseeable future. Therefore, the value of land is not adversely affected to a significant degree. Moreover, distribution lines are primarily intended to provide power supply to populated area which boost the economic status as well as land price of the area, thus, outweighing possible negative impacts, if any.

5.2.7 Historical/Cultural Monuments/Value

Final routes of transmission and distribution line and sites for construction of new sub-stations don't involve any monuments of historical or cultural significance.

5.2.8 Encroachment into Precious Ecological Areas

In accordance with the policy of route selection, IA/Utility takes all precautions right from the planning stage itself to avoid routing of line through forest, protected areas like national park, wildlife sanctuary, biosphere reserve/ biodiversity hotspot and other ecological sensitive areas. In the instant scheme the route of the lines have been selected in such a way that there is no forest area involvement along the corridors. Moreover, suitable management measures like minimizing RoW requirement, use of existing tower, use of tall or extended tower etc., wherever feasible, are being undertaken to minimize the loss of vegetation.

5.2.9 Line into Other Valuable Lands

Other valuable land includes land acquired, though temporarily, for tower base and width of RoW corridor. Subsequent to the notification by Govt. of Assam on adoption of MoP guidelines, compensation toward damages in regard to RoW for proposed 132 kV line @ 85% land value for tower base & maximum 15% land value for width of RoW corridor as decided by District Magistrate or any other authority shall be paid to land owners. Details of land areas considered for such compensation is given in **Table 5.7**.

Table 5.7: Land area for RoW Compensation

S. No.	Name of Line	Line Length (Km)	Total Tower (Nos.)	Land area for Tower base per km (acre)	Total land area for tower base (acre)	*RoW Corridor area per km (acre)	Total land area for RoW Corridor (acre)	Total Land area (acre)
1	LILO of Golaghat – Bokajan 132 kV S/C line at Sarupathar	0.270	3	0.036	0.00972	6.635	1.791	1.8
2	LILO of Jorhat (Gormur) – Nazira 132 kV S/S on D/C at Teok	0.944	7	0.036	0.033984	6.635	6.263	6.59
	TOTAL	1.214	10		0.043704		8.054	8.39

**Effective RoW corridor area has been considered after excluding tower base area.*

Source: Detailed Survey of POWERGRID/ Contractor

In case of 33 kV distribution line, area that becomes unavailable because of the erection of pole is insignificant as approximately one sq. ft. land area is occupied for one pole. As already mentioned in Table 5.3, total land loss area for 3172 poles is only 0.0721 acre, therefore, land value for pole base is not considered for land compensation.

In line with the compensation procedures laid down in ESPPF & CPTD, compensation have been/ are being paid to affected persons after assessment of actual damage based on market rate and verification by concerned revenue authorities. A sample case of compensation payment including notice to land owner, assessment and verification by revenue authority and payment to affected person etc. is enclosed as **Annexure III**.

5.2.10 Interference with Other Utilities and Traffic

As per regulations, it is mandatory for IA/AEGCL/ APDCL to seek clearance prior to construction from department of Railways, Telecommunications and wherever necessary from aviation authorities that are likely to be affected by the construction of transmission lines.

The transmission & distribution lines affect nearby telecommunication circuits by causing electrical interference. To plan and implement the mitigating measures for the induced voltage which may occur to nearby telecom circuit and suggest necessary protection measures to be adopted, a standing committee, Power Telecom Co-ordination Committee (P.T.C.C.) has been constituted by Government of India. The committee suggests measures like rerouting of the telecom circuits, conversion of overhead telecom circuits into cables etc. to minimize the interference. The cost of such measures is determined by the Committee on the basis of prevailing norms and guidelines. Though the exact cost to mitigate the impacts of induction in neighboring telecom circuits would vary from case to case, the cost on an average works out to be Rs. 50,000/- per km. Provision to meet these expenses has been made in the cost estimate for the same for transmission line proposed under the instant scheme.

Wherever transmission & distribution line crosses the railways, clearance is taken from that Ministry. In general, the system is planned and executed in such a way that adequate clearance is maintained between transmission lines on the one hand and railways on the other. In the instant project also, clearances are being obtained from the Ministry of Railway as transmission and distribution lines are crossing railway tracks at few locations. As a management practice underground cables will be laid at these crossings. Further, aviation routes are not present in the project locations. It is therefore not required to avail clearances from the Ministry of Aviation.

The main approach road for accessing the construction sites including four new substations are through National Highway NH-127, NH-129 and other State Roads bifurcating from the National Highway as these are situated just adjacent to NH and other PWD/State Roads. The volume of traffic on these roads found to be medium. Therefore, steep rise in volume of traffic due to mobilization for said projects is not anticipated.

5.2.11 Interference with Drainage Pattern

As the transmission lines are constructed aerially and the blockage of ground surface is limited to area of tower footings, which is very small, there is little possibility of affecting drainage pattern.

In the instant scheme, only two crossings are involved on two nalas. Therefore, there won't be any impact on river ecology and on aquatic flora & fauna. Further, to avoid any interference, DD towers are being used instead DB/ DC tower to avoid any interference and cross-arm strengthening has also been suggested. Another measure already suggested in EMP and in place is to avoid dumping of fill materials in sensitive drainage area. In case of substations, all drainage channels along or inside substations are being trained and connected to main or existing drainage to avoid any erosion due to uncontrolled flow of water.

5.2.12 Impact on Indigenous People

Government of India, under Article 342 of the Constitution, considers the following characteristics to define indigenous peoples [Scheduled Tribes (ST)]:

- i. tribes' primitive traits;
- ii. distinctive culture;
- iii. shyness with the public at large;
- iv. geographical isolation; and
- v. social and economic backwardness before notifying them as a Scheduled Tribe.

Essentially, indigenous people have a social and cultural identity distinct from the 'mainstream' society that makes them vulnerable to being overlooked or marginalized in the development processes. STs, who have no modern means of subsistence, with distinctive culture and are characterized by socio-economic backwardness, could be identified as Indigenous Peoples. Indigenous people are also characterized by cultural continuity. Constitution of India identifies schedule areas which are predominately inhabited by such people. In the whole Meghalaya State, special provisions also have been extended to the Tribal Areas under the 6th Schedule [Articles 244(2) and 244(A) of the constitution] in addition to basic fundamental rights. The Sixth Schedule provides for administration of tribal areas as autonomous entities. The administration of an autonomous district is vested in a District Council and of an autonomous region, in a Regional Council.

The project is being implemented in Karbi Anglong district also which is governed by Bodoland Territorial Council Autonomous District Council as per the provisions of Sixth Schedule of the Indian Constitution. In such ADC area No Objection Certificate (NoC) from concerned land owner/ Headman /Village Council shall be obtained. As stipulated, NoCs are being obtained from all the Headman/ Village Council. Besides, all social issues shall be dealt separately in accordance with the provisions of Social Management Framework (SMF, A-C) placed in the ESPPF of AEGCL/APDCL. The SMF has been given as **Annexure IV**.

5.2.13 Environmental & Social Impact Matrix Due to Route Alignment

Based on the above analysis of final route of transmission and distribution lines and location of EHV and DMS sub-stations, the summarized environmental & social impact matrix is presented below in **Table 5.8**.

Table 5.8: Summary of Impacts

S. No.	PARAMETERS	EXTENT OF IMPACT
1. A.	Total Line length - (TL -1.214 km, DL-120.170 km)	The TL length has decreased by 0.786 km, while the DL length has been increased by approx. 17.10 km. Thus, the total line length has been increased by 16.314 km. Length of the TL has been reduced due to changes in the locations of the substation and when optimized during ground truthing survey. Main reason for the increase of length of the DLs is change in scope and addition of scope as route of 33 kV line from 132/33 kV Teok S/S to 33/11 kV Pragati S/S was changed to 33 kV line from 132/33 kV Teok S/S to 33/11 kV Amguri S/S and 33 kV line from 132/33 kV Sarupathar S/S to 33/11 kV Sarupathar S/S was added. Other reason for change in line length is changes in location of substations and change in route to avoid RoW

S. No.	PARAMETERS	EXTENT OF IMPACT
		issues. Though the length has been increased however, no additional impacts of any kind apart from earlier identified impacts in IEAR/ EMP are anticipated as all the environmental criteria for route selection were adhered to. Moreover, due to avoidance of RoW issues, social impacts have also been avoided and environmental impacts have been minimized.
B.	Terrain: Plain	Entire project is being implemented on plains. Land use beneath the TLs and DLs is primarily agricultural land, followed by govt. land i.e. along the road and private plantation. Therefore, no adverse impact is recorded/ anticipated.
2.	Forest land (km)	No forest land involved.
3.	Forest type	NA
4.	Forest density	NA
5.	Rare/ endangered flora	No rare/endangered flora found in project area.
6.	Rare/ endangered fauna	No rare/endangered fauna found in project area.
7.	Migrating Wildlife/ breeding ground	NA
8.	National Park / sanctuaries	No protected areas involved.
9.	Wet land	None
10.	Soil erodibility	Since the terrain is plain therefore there is almost no possibility of soil erodibility. However, adequate measures at tower location and substation have been/ are being undertaken by IA to minimize any such impact if any.
11.	Historical / Cultural monuments	None
12.	Total Affected Persons (APs)	As per assessment carried out under CPTD, till date total APs are 15. All APs will be compensated as per the Govt. norms.
13.	Relocation of villagers	None
14.	Area of actual land loss under Tower Base	Total 0.0727 acre of actual loss of land will be taking place under tower/ pole base, of which 0.0006 acre will be under tower base and 0.0721 acre under pole. This loss is temporary in nature i.e. during construction time only. APs are being compensated for actual land loss.
15.	Affected Structures	Nil
16.	Temporary Damage to Crop	Total 241.382 acre of land area is considered for crop damage due to overhead lines, of which 3.640 acre will be due to TLs and 237.742 acre will be due to DLs. This loss is temporary in nature i.e. during construction time only. APs are being compensated for actual land loss.
17.	Loss/ Hindrance to Public Utilities	Negligible, restricted to construction phase only.

5.3 ENVIRONMENTAL PROBLEMS DUE TO DESIGN

5.3.1 Escape of Polluting Materials

The equipment installed on lines and substations are static in nature and do not generate any fumes or waste materials. However, detailed specification with respect to equipment design and substation drainage and sewage design has been included in tender document to avoid any incidence of land and water contamination. Transformers have been designed with oil spill containment systems having sump of capacity of 200% of oil volume of largest

transformer, and purpose-built oil, lubricant and fuel storage system, complete with spill cleanup equipment. Substations include drainage and sewage disposal systems to avoid offsite land and water pollution. Apart from this, solid waste like packing materials, cables, aluminum conductor, sand, aggregate material, cements and steel generated during construction is carefully handled and removed from the sites periodically to avoid any contamination.



Oil Spill Containment Systems at 132/33 kV Sarupathar and Teok S/S



Oil Spill Containment Systems at 33/11 kV Hatimurah-II and Mailu S/S



Drainage within the 132/33 kV Sarupathar S/S



Drainage within the 132/33 kV Teok S/S



Drainage within and outside the 33/11 kV Hatimurah-II S/S



Septic Tank within the 33/11 kV Hatimurah-II and Mailu S/S

5.3.2 Explosion/Fire Hazards

During the survey and site selection for transmission lines, and substations, it has been ensured that these are kept away from oil/gas pipelines and other sites with potential for creating explosions or fires. Fires due to flashover from lines can be a more serious problem in forest. However, adequate safety measures are taken to avoid such incidence. In the present project, the route line routes and substations are not located close to the vicinity of oil/gas pipelines or other installations with potential fire/ explosion hazard. Apart from this, automatic tripping mechanism for transmission/distribution and substations are being installed so that line gets disconnected in fraction of seconds to prevent fire hazards. Fire

protection and fire fighting system are being installed in all the 132/ 33 kV substations. The fire protection system includes fire fighting pump house, water tank, HT cable trench, fire detection system, fire extinguishers at appropriate places, water spray system etc. Also, Explosion Prevention and Fire Extinguishing System (EPFES), a reliable, proven, proactive system are placed at all the 132/33 kV substations to save transformer and reactors in different fault conditions which can lead to explosion and/or fire. It extinguishes external fire in bushing and/or radiator also, back up provision ensures nitrogen injection for fail safe operation. EPFES is designed to protect oil filled transformer/reactor from explosion and fire in all types of possible fault scenarios.



Fire Fighting Pump House, Water Tank, Cable Trench at 132/33 kV Sarupathar S/S



Fire Fighting Pump House, Water Tank, Cable Trench at 132/33 kV Teok S/S



Cable Trench and Fire Extinguisher at 33/11 kV Harimurah-II S/S

5.3.3 Erosion Hazards due to Inadequate Provision for Resurfacing of Exposed Area

Construction of 132 kV line involves only small-scale excavation of area i.e. 3m L x 3m W x 3m H for tower footing that may result in generation of 108 m³ of excavated material from each tower. In case of 132/33 kV substation foundation, excavation of soil to the tune of 7500 m³ is required depending on site condition. Similarly, in case of 33 kV line, soil excavation is limited to 0.72 m³ for each pole, and for 33/11 kV sub-station, excavation of around 2000 m³ is required. It has been worked out that a total of approximately 22,364 m³ (10x108 + 2x7500 + 3172x0.72 + 2x2000) of excavated materials gets generated for construction of 10 towers, 2 new 132/33 kV sub-stations, 3172 poles and 2 new 33/11 KV substations proposed under present scheme. However, all the soil excavated for pole footings and substations construction are optimally (about 80-90%) utilized for backfilling and the remaining soil being spread evenly and compacted. Top soil disturbed during the development of sites are used to restore the surface of the platform. Infertile and rocky material are used as fill for substation/ and tower/pole foundations. Hence, possibility of erosion of exposed area due to construction activity is negligible.

5.3.4 Environmental Aesthetics

Since spacing between the towers/poles in case of 132 kV transmission & 33 kV distribution lines is approximately 300 meters and 100 meters, respectively, these don't affect the visual aesthetics of the localities particularly when it is ensured to route the lines as far away from the localities as possible. AEGCL/ APDCL takes up plantation of trees to buffer the visual effect around its substations and to provide better living conditions. Wherever AEGCL/ APDCL feels it appropriate, discussions are held with local Forest Department officials to determine feasibility of planting trees along roads running parallel to transmission lines to buffer visual effect in these areas. In addition, towers are painted grey or green to merge with the background.

5.3.5 Noise/Vibration Nuisances

The equipment installed at substation are mostly static and are so designed that the noise level always remains within permissible limits i.e. 85 dB as per Indian standards. Transformers with maximum noise emitting level of 75 dB and DG set with proper enclosures are part of equipment specification/ design criteria. Some noise is unavoidable during construction phase like noise produced by concrete mixing equipment and excavators which are temporary and only in day time. However, regular monitoring by IA/Contractors and due maintenance of equipment are ensured to keep the noise level well within the prescribed limit. Further, to contain the noise level within the permissible limits whenever noise level increases beyond permissible limits, measures like providing sound and vibration dampers and rectification of equipment are undertaken. In addition, plantations of sound absorbing species like Casuarinas, Tamarind, and Neem are raised at all the substations that reduce the sound level appreciably.

5.3.6 Blockage of Wildlife Passage/ Impact on Avifauna

The proposed transmission & distribution lines are passing through mostly waste/ fallow land. Since there is no protected area or demarcated/ documented migration path of wildlife like elephant corridor existing near to subproject locations, hence, possibility of any disturbance

to wildlife is not imminent. Avian hazards are mostly encountered in bird sanctuaries area, IBAs and fly path of migratory bird predominantly related to nesting site. Since in the instant case due to routing of line away from such areas, bird hit/electrocution is not anticipated.

5.4 ENVIRONMENTAL PROBLEMS DURING CONSTRUCTION PHASE

5.4.1 Uncontrolled Silt Runoff

Almost all the tower/ pole are in plain area, therefore, there was no impact due to the silt runoff. In case of distribution lines all the excavated soil is backfilled and compacted immediately after erection of tubular poles. As already explained, during construction limited quantity of excavated material is generated from tower/pole foundations. However, adequate measures have been taken to store excavated materials properly for refilling after construction is over. Further, excavation is avoided in rainy days. Hence, uncontrolled silt runoff is not anticipated. However, during construction, precautions have been taken by contractors to avoid any such runoff of excavated material from the construction sites. So far there are no instances with potential of erosion during construction of above said lines.



Levelled Sites after Erecting Towers



Levelled Sites after Erecting Poles

In case of sub-station, existing ones are located on flat land and adjacent to existing road and new ones are also being constructed on flat land after site clearing and leveling. It is also being ensured that new sub-stations are close to existing road and construction of approach road is avoided as far as possible. As already explained, during construction limited quantity of excavated material is generated from sub-station foundation. However, adequate measures have been taken to store excavated materials properly for refilling after construction is over. Further, excavation is avoided in rainy days. Hence, uncontrolled silt runoff is not anticipated. However, during construction, precautions have been taken by contractors to avoid any such runoff of excavated material from the construction sites. Moreover, sub-stations are being constructed above the high flood level (HFL) by raising the foundation pad, therefore, are not prone to flooding/ erosive losses of soil. So far there are no instances with potential of erosion during construction of substation. Similarly, there are no instances of erosion/losses of soils into adjoining area as all the overburden are being backfilled within the substation boundary walls and properly managed. The substations are not located in the vicinity of water bodies or ecologically sensitive areas.



Surface levelling at 132/33 kV Sarupathar S/S



Surface levelling at 132/33 kV Teok S/S



Surface levelling at 33/11 kV Mailu S/S



Surface levelling at 33/11 kV Hatimurah-II S/S

During site visit it was observed and informed by the IA that the work at 33/11 Mailu substation is on hold since December, 2021. Reason for the halt is failure of the existing borewell which was source of water for construction activities and domestic usage of labours. Work can only resume once new bore well is constructed, however, it has been more than 3 months but the bore well is yet to be constructed. Since the work is on hold and site left unattended silt runoff due to the un disposed off/ un utilized excavated material was observed along the boundaries of the substation. Due to the rains, the unattended excavated material is getting washed away along the northern, western and southern boundaries of the substation. In view of this it is recommended to resume the work at the earliest, dispose off/ utilize the excess excavated material at the earliest so as to avoid any further runoff.



Unattended Excavated Material



Silt Runoff

**Silt Runoff**

5.4.2 Nuisance to Nearby Properties

During site selection due care is taken to keep the transmission & distribution lines and substations away from settlements. Further, all the construction activities are undertaken through the use of small mechanical devices e.g. tractors and manual labour, therefore, nuisance to the nearby properties if any, is not expected. The construction activities are normally undertaken in lean period and post harvesting to avoid/minimize such impact. All construction sites of new sub-station are prohibited for general public both due to its separation/demarcation by boundary wall and also due to statutory provisions. Hence, any adverse impact arising during the construction of substation is temporary i.e. will last during construction phase only, and limited to the boundaries of proposed substation only and neither impacts nearby habitat/property nor health & safety of neighboring community. Boundary wall of all the substations have been almost completed, it is expected that the remaining boundary wall construction work will be completed soon.

**Boundary Wall and Gate at 132/33 kV Sarupathar Substation**



Boundary Wall and Gate at 132/33 kV Teok Substation



Boundary Wall and Gate at 33/11 kV Mailu Substation



Boundary Wall and Gate at 33/11 kV Hatimurah-II Substation

5.4.3 Interference with Utilities and Traffic and Blockage of Access Way

Since all the locations of subprojects are not well connected through rail link, transportation of construction materials were mostly through road network. Access to the site is along existing roads or village paths; minor improvements to paths have been made where necessary, but no major construction of roads is necessary either during construction or as a part of maintenance procedures. In case, access road is not available at some places, existing field/path are being utilized and compensation for any damage to crop or field is being paid to the owner.

As and when a transmission line crosses any road/ railways line, adequate care/caution is taken so as not to cause any hindrance to the movement of traffic. Stringing at the construction stage is carried out during lean traffic period in consultation with the concerned authorities and angle towers are planted to facilitate execution of work in different stages. Apart from this, safety precaution like barricading of work area and placement of visible signage are being undertaken to avoid any unforeseen incident.

5.4.4 Inadequate Resurfacing for Erosion Control

As explained earlier, all the towers and poles are locations are on plain surface, therefore, there were no instances of soil erosion due to tower and pole erecting. The excavated material is being backfilled and any remaining earth, if any have been spread around the base and compacted. Till date no instances with potential of erosion observed during construction of above said lines. Further, construction is generally undertaken in dry/non- monsoon period.

Similarly, almost all the sub-stations are located on flat land and are being constructed after site clearing and leveling. However, as a precautionary measure RRM walls are being implemented as erosion protection measure at the 132/33 kV Teok sub-station.

5.4.5 Inadequate Disposition of Borrow Area

As mentioned earlier the tower/pole foundations involve excavations on small scale basis and the excavated soil is utilized for back filling. In case of substations, generally the sites are selected in such a manner that the volume of cutting is equal to volume of filling avoiding borrowing of the area. In the instant project also, excavated material is disposed off in the same premises at all the substation only. However, in addition to the excavated material, excess soil was required for three 132/33 kV substations and three 33/11 kV substations. Details of the excess soil required and source of the borrow area is given below in the **Table 5.9**. Except for sites mentioned at S. No. 2 and 3 of the table below all the sites were existing borrow sites hence reclamation of site was not needed. The two new sites were developed as ponds after due consent of the land owner. Prior to use, the soil sample were tested and found to be within the specified limits of PGCIL's Standard Field Quality Plan.

mismatch in the write up & table below.

same text as FEAR-1 report

Table 5.9: Details of Borrow Area

S. No.	Name of Substation	Quantity Borrowed (cum)	Source of Borrow Area	Ownership of Borrow Area
1	132/33 kV Sarupathar substation	8,000	Existing/ Registered Borrow Site	Govt. approved site
2	132/33 kV Teok Substation	10,405		

5.4.6 Protection of Worker's Health/Safety

All health & safety issues and their management aspects are integral part of project/contract specific safety plan (**Annexure V**), which is also part of contract conditions. Various aspects such as, work and safety regulations, workmen's compensation, insurance are adequately covered under the General Conditions of Contract (GCC), a part of bidding documents. Project is being executed as per the approved plan and is regularly monitored by dedicated Safety personnel. Moreover, for strict compliance of safety standard/plan a special provision as a deterrent has been added in the contract which provides for a heavy penalty of Rs.10 lakhs

for each accidental death and Rs 1.0 lakh for each injury and is deducted from the contractor's payment and paid to the deceased/affected family (**Annexure VI**).

Additionally, work and safety regulations, workmen's compensation, insurance are adequately covered under the General Conditions of Contract (GCC), a part of bidding documents. The project authority ensures that all contractors are operating with valid labor license as per provision under section – 12(1) of the Contract Labour (Regulation & Abolition) Act, 1970 and also certified under Section- 7(3) of the Building and Other Construction Workers (Regulation of Employment and Condition of Service) Act, 1996 from Ministry of Labour & Employment. Besides, the contractors have obtained requisite insurance policy as per provisions of Employee Compensation Act, 1923 for its employed workforce. Sample copy of labor license and insurance policy for workers is attached as **Annexure VII**.

During construction work, safety guidelines/checklists including work permits and safety precautions are being strictly followed which are also regularly monitored by site in-charge. Sample copy of filled checklist is enclosed as **Annexure VIII**.

Efforts are being made to hire labourers locally to the extent possible, else same have been outsourced. The workers have been provided with PPEs such as boots and helmets. Mock drills such as fire safety, first aid etc. are conducted periodically to enhance the preparedness level of the workforce. Safety induction & awareness programme including HIV/AIDS are also conducted at every active site. Safety film for transmission project in local language is shown to workers for better awareness. Proper drinking water has also been provided. First aid boxes and provisions for treatment in case of emergencies were arranged locally/ nearby towns.

The COVID-19 pandemic outbreak which not only created unprecedented situation all over world but has also impacted every aspects/ activities including project implementation. Since such pandemic was totally unforeseen/ unexpected, impacts associated with such events/situations were not been specifically included in existing EMPs. However, the existing safety plan and other contract conditions particularly related to labours do have provisions to deal with such extraordinary situations.

Since Govt. of India has enforced The Disaster Management Act, 2005 and Epidemic Diseases Act, 1897, w.e.f. March,2020 in whole of India which empower the Gol & State Govt. to take special measures and prescribe regulations in an epidemic to control the spread of the virus. Provisions of these acts which are also enforceable on all provide that all the protocols of Govt of India and State Govt in respect of COVID-19 are to be mandatorily followed. Individual protocols also required necessary permission from Govt. Therefore, POWERGRID and all its contractors were duty bound to follow the instructions of government including closing of all construction activities during lockdown and the guidelines issued after detailed assessment regarding unlock which allows work to start with certain conditions. Based on this, POWERGRID's Corporate Safety Cell has also prepared a detailed guideline / plan to be followed at all its establishments, Construction sites and O&M during resumption of work in COVID-19 situation and site officials/contractors directed for ensuring strict implementation

of the said guidelines. Besides, POWEGRID has provided food relief/exgratia payment to stranded workers and also financial assistance for improvement of health infrastructure/other medical facility/equipment. Measures undertaken at construction Sites in response to COVID-19 are:

- Arrangement of RT PCR /Rapid Antigen test for the labour as per requirement based on symptoms, on contact tracing, upon new workforce joining the existing workforce or upon completion of the quarantine period, as required.
- If the construction works have been stopped due to COVID conditions in the local areas and labour have to be kept idle, providing of food/amenities during such period are being ensured.
- Covid-19 positive labours have been kept in designated quarantine center and all expenditures are being borne by POWERGRID.
- Sanitizers, Face masks, Gloves and other COVID related PPEs are provided for construction workers along with employees. Thermal scanning is being done on daily basis.

During site visit also it was observed that the COVID-19 pandemic outbreak has impacted every aspects/ activities of project implementation. The biggest impact on the project implementation is the irregular availability of manpower. Due to the lockdown at both the waves labour gangs had to be dismantled and it became impossible to assemble same gang when lockdowns were eased out. Also, the uncertainty of COVID-19 virus has resulted in unwillingness of out station workers/ labours to join as fear of getting stuck if once again lockdown is announced prevails. This has resulted in contractors getting the work done at the mercy of whatever labours are available. Further, over a period of time contractors have also started neglecting the health and safety aspect. As a result, especially at 132/33 kV Sarupathar substation, all the records related to health and safety aspects which were well initiated are not maintained now; labours, supervisors/ engineers of contractor as well as IA staff were seen without any PPEs during construction; workers were not aware about their health and safety during construction; labours were not aware about availability of first aid box at construction site; first aid box contained expired date medicines at 132/33 kV Sarupathar substation, there was no ambulance at site; surroundings of labour camp was unhygienic; Control Room Buildings are being used as labour camps; records of labours' health checkup were missing at most of the sites; lack of induction and training programme was observed at most of the sites; except of a few there were no safety signs.

Though, the site incharges have ensured full compliance of worker's health/ safety prior to COVID-19 pandemic. Staff of IA i.e. PGCIL designated as Environment, Health and Safety Engineer also confirmed the compliance No instance of any sort of mis happening with worker's health/ safety also justifies compliance of worker's health/ safety.



Labour Camp at 132/33 kV Sarupathar S/S



Labour Camp at 132/ 33 kV Teok S/S



Condition of First Aid Boxes at Site

Monthly Safety Activities Report

पावर ग्रीड कॉर्पोरेशन ऑफ इंडिया लिमिटेड / POWER GRID CORPORATION OF INDIA LTD.
 क्षेत्र का नाम / Name of the Region: उत्तरपूर्वी क्षेत्र / NER

संयोजित सुरक्षा कार्यक्रम की रिपोर्ट - 2022 जनवरी

Monthly Safety Activities Report-January-2022

A. Accidents/ Incidents, including Fire Incidents :-

Sl No.	Date of accident/ incident	Type of accident (Fatal/Non Fatal/Near)	Name of Agency (Powergrid/ Contractor)	Area of accident (Const - TL/Const- SS/ O&M - TL/ O&M - S/S/ DMS/TELECOM)	Name of line/Station	Activity During Accident (Fdn/Erection/Stringing/Other)	Attributes of accident/incident	Person Involved	
								Fatal	Non Fatal
1	Month of January, 2022								NIL

B. Safety Inspection/Audits at Construction Sites :-

Sl No.	Inspection conducted by (Name & Designation)	Date Of Inspection	Name of Station/ Line	Activity (Foundation/ Erection/ Stringing/ Others)	Remarks
1					NIL

NECCON POWER & INFRA LTD

Tool Box Talk Training Program

Date & Time	18.01.2022	Location	Teok STS
Name of the Trainer	Pranab Datta	Duration	15 min

Project Plant: 132/33 KV Teok STS
Project Name: NERPSIP

Topics

Basic Cause of Accidents	8	Job Safety Hazard
How to Prevent The Accidents	9	Importance of First Aid
House Keeping	10	Electrical Safety
Use of PPE's	11	Work at Height
Personal Hygiene	12	Fire and Fire extinguishers
Hot Works	13	Usage of power tools
Maintenance of PPE's	14	Safety operation of Hydrant cranes earth excavators

Any other Issues discussed, Please Mention below.

No	Name of Workmen	Designation	Signature
1	Rohini Ali	Skilled	Rohini Ali
2	Wasil Hussain	Unskilled	Wasil Hussain
3	Aminur Rahman	Unskilled	Aminur
4	Ahmad Ali	Unskilled	Ahmad Ali
5	Rafiq Ali	Unskilled	Rafiq Ali
6	Rafiq Ali	Unskilled	Rafiq Ali

P. Datta
 18.01.2022
 Site Engineer Safety Officer Project Manager/Site-In-Charge

Details about Safety Training At 132/33 kv Teok Sub Station

We had Conducted Fire Mock Drill Programme on 23.10.2021 for Construction works at 132/33 kv Teok Site. Many Workers will Participate in this Programme. The Workers will be trained How to operate the Fire Extinguisher, How to Extinguish the Fire, and all Safety measures including PPE's will be provided like Safety Helmet, Safety Shoes etc.

Participants who Attended :-

Sl. No	Name	Designation	Signature
1	Ankur Phukan	Welder	
2	Dulal Gogoi	Welder	
3	Rohini Ali	Skilled	
4	Ahmad Ali	Skilled	
5	Manash Jyoti Phukan	Unskilled	
6	Abidur Rahman	Unskilled	
7	Aminur Rahman	Unskilled	
8	Salvesh Munda	Unskilled	
9	Arif Ali	Unskilled	

P. Datta
 23.10.2021
 Site Incharge Safety Officer

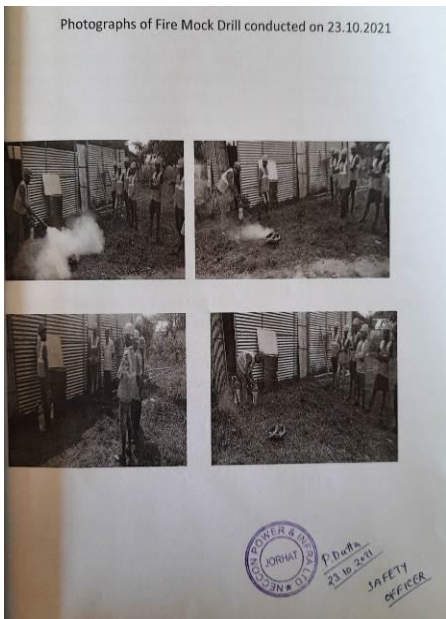
Details about Safety Training At 132/33 kv Teok Sub Station

We had Conducted Fire Mock Drill Programme on 26.10.2021 for Construction works at 132/33 kv Teok Site. Many Workers will Participate in this Programme. The Workers will be trained How to operate the Fire Extinguisher, How to Extinguish the Fire, and all Safety measures including PPE's will be provided like Safety Helmet, Safety Shoes etc.

Participants who Attended :-

Sl. No	Name	Designation	Signature
1	Kailul Borah	Skilled	
2	Hirokijyoti Gogoi	Skilled	
3	Atikul Ali	Skilled	
4	Tonmoy Saikia	Unskilled	
5	Jintu Phukan	Welder	
6	Simanta Thengal	Skilled	
7	Bitu Sonowal	Unskilled	
8	Anupam Saikia	Unskilled	
9	Manuj Kachari	Unskilled	
10	Moneswar Tudu	Skilled	
11	Bijoy Tanti	Unskilled	
12	Birud Mazi	Skilled	
13	Prasanta Mazi	Unskilled	
14	Bishal Kalandi	Unskilled	

P. Datta
 26.10.2021
 Site Incharge Safety Officer



Records of Tool Box Talk Training, Safety Training, Fire Mock Drill at 132/33 kv Teok Substation

132/33 kv Teok Sub Station

We had conducted a Health Check-up campaign on 11.11.2021 for Construction work at 132/33 kv Teok Sub-Station and hence 20 Nos Labours had participated in the Health Check-up campaign.

Date: 11.11.2021

Health Check-up Attended by Labours

Sl No.	Name of Workers	Age	Remarks
1	Arif Ali	19	
2	Ankur Phukan	31	Blood pressure is high and doctor asked him to have an ECG test alongwith medicine prescribed by the doctor (Tinnorin 40mg)
3	Simanta Thengal	23	
4	Bitu Sonowal	31	
5	Salvesh Munda	21	
6	Kailul Borah	33	
7	Jintu Phukan	27	
8	Ahmad Ali	23	
9	Rafiq Ali	20	
10	Dulal Gogoi	46	
11	Tonmoy Saikia	27	In per doctor's check up the blood pressure is on high level to some extent & hence he suggested to consult with his nearby doctor. And the doctor prescribed a tablet named of AMLODIPINE 5mg
12	Atikul Ali	25	
13	Aminur Rahman	29	
14	Hirokijyoti Gogoi	37	
15	Manuj Kachari	32	
16	Biswajit Borah	26	
17	Manojyoti Phukan	25	
18	Anupam Saikia	37	
19	Moneswar Tudu	28	
20	Bijoy Tanti	21	

P. Datta
 11.11.2021
 Site Engineer Safety Officer



NECCON POWER & INFRA LTD.

Medical Health Check-up of Workers

132/33 KV Teok Sub Station DATE: 11.11.2021

HEALTH CHECK-UP REPORT

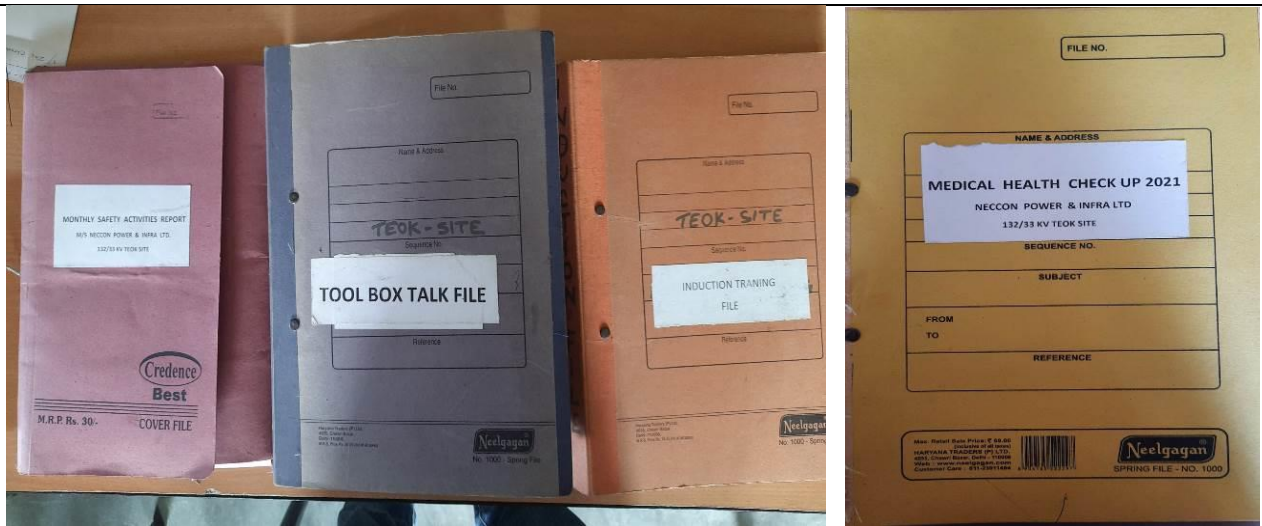
Name: ARIF ALI Father's Name: FIKRUDIN ALI
 Sex: M Age: 19
 Identification Mark: Blank note above upper lip
 Address: Village - Melamati PS - Tinkhar Pin - 785622 Jorhat

Height (cm)	Weight (kg)	Chest (Inch) cm	Pulse (Per-Min)	Blood Pressure	Vision (Eye)	Ear	Remarks (if any)
155	60.2kg	92 cm	72/min	120/80 mmHg	-	N.A.D	

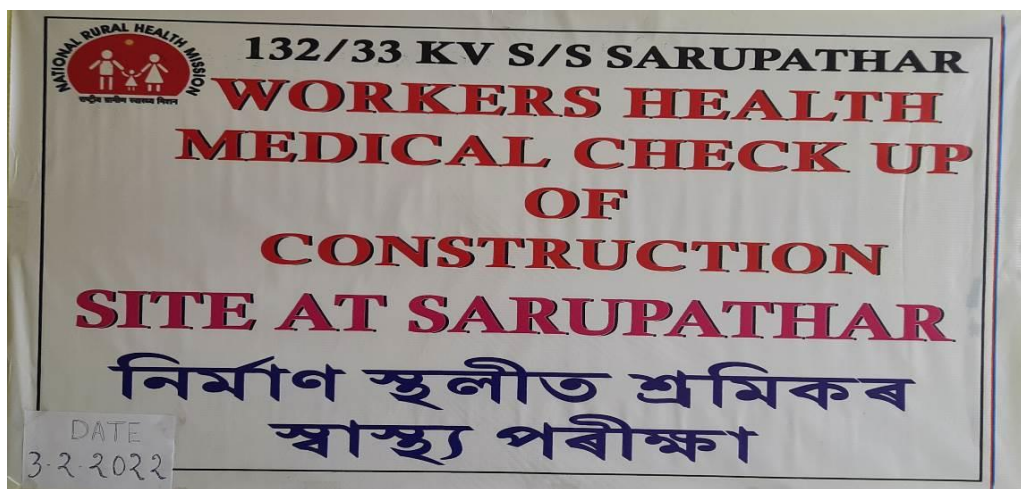
a) Whether any illness found doing this health check-up: N/O
 b) Whether any Physically Disability found doing this health check-up: No
 c) Whether any Tetanus injection administered doing this health check-up: No
 d) Whether any found Physically fit to work at height doing this health check-up: *fit at 100 ft. with harness, appropriate, safety gear.*

P. Datta
 11.11.2021
 Site Manager Doctor Sign. & Seal
 DR. BISWAJIT SARMA
 (GENERAL & PHARMACY SURGEON)
 Reg. No. 27128 (M.C.)

Records of Health Check up at 132/33 kv Teok Substation



Records Well Started but Not Well Maintained at 132/33 kV Teok Substation



Medical Health Check Up Organized at 132/33 kV Sarupathar Substation on 03/02/2022





Sl. No.	Station Name	Ph.No./Mobile
1.	Deputy Commissioner(oo)	0376-2320020
2.	SP Office, Jorhat	0376-2320021
3.	Jorhat Police Station	0376-2320018
4.	Jorhat Fire Station	0376-2320101
5.	Teok Fire Station	0376-236010
6.	Jorhat Medical College	0376-2341358
7.	A.G. Nursing Home	0376-2370009
8.	Sarjivan Hospital	0376-2326817
9.	Anti Venom (J.M.C.)	7578004900
10.	Casualty (J.M.C.)	7578013399
11.	Blood Bank (J.M.C.)	920741444
12.	ASEB, Teok	0377-2101241
13.	Circle Office, Teok	0377-2210192201
14.	Mariani Railway Station	03771-2130444
15.	News Live	9435710002
16.	Teok Civil Hospital	9435091012
17.	Teok Police Station	0376-2296424

Sign Boards at 132/33 kV Teok Substation

Sl. No.	STATION NAME	PHONE NUMBER
1	SDO(Civil)	981
2	SDPO	981
3	POLICE STATION	981
4	ASEB	981
5	FIRE BRIGADE	981
6	RAILWAY	981
7	HOSPITAL	981
8	AMBULANCE	981
9	NEWS LIVE	981
10	LABOUR OFFICE	981
11	ANTHROP MEDICAL	981
12	A.G. NURSING HOME	981
13		981



Condition of Sign Boards at 132/33 kV Sarupathar Substation

5.5 ENVIRONMENTAL PROBLEMS RESULTING FROM OPERATION

5.5.1 O&M Staff/Skills Less Than Acceptable Resulting in Variety of Adverse Effects

The O& M program is normally implemented by substation personnel for both the lines as well as substations. Monitoring measures employed include patrolling and thermo-vision scanning. The supervisors and managers entrusted with O&M responsibilities are intensively trained for necessary skills and expertise for handling these aspects. A monthly preventive maintenance program is carried out to disclose problems related to cooling oil, gaskets, circuit breakers, vibration measurements, contact resistance, condensers, air handling units,

electrical panels and compressors. Any sign of soil erosion is also reported and rectified. Monthly monitoring reports are generated and appraised to Management, including a report of corrective action taken and a schedule for future action.

AEGCL/ APDCL follows the best international practices while designing its system to maintain acceptable prescribed Electro Magnetic Field (EMF) level. The ICNIRP guideline for acceptable EMF level for the general public (up to 24 hours a day) is a maximum exposure level of 1,000 mG or 100 μ T. Further, because of health and safety issues such as fire safety, safe voltages on metallic parts of buildings, and safety clearances to avoid flashover, the transmission lines do not pass directly over any residential properties and as such the potential for EMF effects to occur is further diminished.

As regard control of SF6 leak it may be noted that present standard of SF6 gas leakage from GIS substation is 0.5% per year. This aspect has been adequately addressed in tender document under Clause 4.9 of Technical Specification Part-I:

“The maximum SF6 gas leakage shall not exceed 0.5% (half percent) per year for the whole equipment and for any individual gas compartment separately. The SF6 gas leakage should not exceed 0.5% per year and the leakage rate shall be guaranteed for at least 10 years”.

Poly Chlorinated Biphenyls (PCBs) due to their high heat capacity, low flammability and low electrical conductivity were extensively used as insulating material in capacitors and transformers. But after the finding that these PCBs are non-biodegradable and have carcinogenic tendency, their use in electrical equipment as insulating medium has been banned all over the world long back. However, it has been reported in some studies that chances of contamination of oil with PCB is possible. Keeping that in mind, AEGCL/ APDCL has discontinued procurement of electrical equipment containing PCB more than 2 mg/kg and specification (as per IEC 61619 or ASTM D4059) is being stated in the tender document. Moreover, the subject scheme doesn't involve replacement of any PCB containing equipment, hence no disposal of such equipment is anticipated.

5.6 CRITICAL ENVIRONMENTAL REVIEW CRITERIA

5.6.1 Loss of Irreplaceable Resources

The T & D projects do not involve any large scale excavation. In transmission line land is affected to the extent only 2.50 sq. m below the tower base for which compensation is paid to land owner. However, loss of land is insignificant due to erection of pole for distribution line. Moreover, the subject transmission and distribution lines are not passing through any forest area; hence the problem of losing natural resources is not envisaged.

5.6.2 Accelerated Use of Resources for Short-term Gains

The subprojects are not making use of any natural resources occurring in the area during construction and are not utilizing the same during maintenance phases. The construction material such as tower members, cement etc. are being sourced from factories while the excavated soil is being reused for backfilling to restore the surface. During construction of

transmission line, very small quantity of water is required which is met from nearby existing source or through tankers. However, for substation water requirement is met mostly by ground water derived by digging a borewell during construction as well as for operational stage. Moreover, provision of rain water harvesting in all proposed substations under the present scheme has been made to conserve precious water resources and enhance the ground water level. The aggregates used for construction are already available within substation area due to cutting, thus no new borrow area will be created. Hence, it may be seen that the activities associated with implementation of subject project shall not cause any accelerated use of resources for short term gain.

5.6.3 Endangering of Species

As described earlier, no endangered species of flora and fauna exist in the subprojects area getting affected and considering aerial nature of transmission and distribution project, there is no possibility of endangering/ causing extinction of any species.

5.6.4 Promoting Undesirable Rural-to Urban Migration

The subprojects will not cause loss of land holdings that normally trigger migration. It also does not involve resettlement due to acquisition of any private land holdings. Hence, there is no possibility of any migration.

5.7 PUBLIC CONSULTATION

Public consultation/ information dissemination is a continuous process starting with the project conception and continues during project implementation and even during O&M stage. Public is informed about the project at every stage of execution. During survey, AEGCL/ APDCL & POWERGRID site officials met people and informed them about the routing of transmission and distribution lines. During the construction, every individual, on whose land tower is erected and people affected by RoW, were consulted. Apart from this, Public consultation using different technique like Public Meeting, Small Group Meeting, informal Meeting have been carried out during different activities of project cycle. During such consultation, the public is informed about the project in general and in particular about the following:

- Complete project plan (i.e. its route and terminating point and substations, if any, in between);
- Design standards in relation to approved international standards;
- Health impacts in relation to EMF;
- Measures taken to avoid public utilities such as school, hospitals, etc.;
- Other impacts associated with transmission & distribution lines and MSPCL approach to minimizing and solving them;
- Trees and crop compensation process.

In the instant project also, many group meetings were organized (informally and formally) by IA & AEGCL/ APDCL in all villages where the interventions are happening. These meetings were attended by Village Panchayat members, senior/respected person of village, interested villagers/general public and representatives from AEGCL/ APDCL & IA. To ensure maximum participation, prior intimation in local language was given and such notices were also

displayed at prominent places/panchayat office etc. During consultations/interaction processes with people of the localized areas, AEGCL/ APDCL field staffs explained benefit of the project, impacts of transmission line, payment of compensation for damaged of crops, trees, huts etc. as per The Indian Electricity Act, 2003 and The Indian Telegraph Act, 1885 and measures to avoid public utilities such as schools, hospital etc. People more or less welcomed the construction of the proposed project. Various issues inter alia raised by the people during public consultation and informal group meetings are as follows;

- To involve village headman during survey work/finalization of line corridor;
- To engage local people in various works associated with construction of line and if required proper training may be provided to engage them.
- To provide flexibility in disbursement of compensation;
- Direct payment of compensation to affected land owners and expeditious disbursement of compensation.

Also, during site visits, consultations were conducted with various stake holders belonging to community and affected people. Target group included contractor, IA Staff, labours and villagers. These consultations were carried out to capture the views of stakeholders about the project plan, design and layout of the project, environmental and social impacts, compensation process, benefits or drawback of the project etc.

It needs to be emphasized that public consultation was kept restricted due to the apprehensions of IA and contractors for security and other law & order related issues which were communicated and advised to field team at onset of field surveys itself and hence limited stakeholder consultations have been carried out. However, it was ensured that consultations representatively covered most stakeholders involved. Major findings of the consultations are summarized below:

- People are well aware about the project, its various components and confirmed that IA & AEGCL/ APDCL informs about the project at every stage of execution.
- Considering that the state of electricity supply in the state is very weak, people welcomed the project as it will not only improve overall power supply situation but will also improve reliability, quality, security and enhancement of power supply of the state.
- People confirmed that IA & AEGCL/ APDCL are taking every step possible to avoid/minimize the environmental and social impacts along the route of transmission lines and at site of sub stations.
- People also confirmed that their common property resources such as cemetery, school, community hall, habitation areas etc. have been completely avoided while finalizing the route of lines.
- People informed that staff of IA/ contractor are easily approachable and are very open to address their grievances. As a result, no written grievance has been received till date.
- People are very much happy with the rate of compensation being given to them and they are being involved in the process of deciding the rate of compensation.
- People confirmed that there is no disturbance of any sort to their life/ livelihood due to the construction or various other activities being carried out under the project.

- No cases of conflict between migrant and local population has been reported till date.
- Execution of project work provides opportunities to local contractors to get involved in construction, fabrication, transportation etc. activities.
- Most of the sub-contracts are awarded/ being awarded to local peoples.
- Contractor prefer and engage local peoples for skilled and unskilled works
- Local villagers rented out their buildings to contractor and IA for temporary offices and staff quarters in local that helps in income generation
- Wherever possible contractor and IA purchase daily need requirements for local vendors and shopkeepers that helps in economic upliftment of the area
- The contractor labor informed that they have not been provided with PPEs such as boots and helmets.
- Mock drills such as fire safety, first aid etc. were conducted periodically to enhance the preparedness level. Safety induction & awareness programme including HIV/AIDS were also conducted.
- First aid boxes and provisions for treatment in case of emergencies are arranged locally/ nearby towns.
- It was revealed that contractor and IA work with close coordination with village heads and community to avoid any misunderstanding during work





5.8 COMPLIANCE OF EMP

The IA has a continuous monitoring mechanism of the project w.r.t. compliance of the mandatory requirements as stipulated in the IEAR. As many provisions of EMP related to construction contractor, EMP has been made integral part of contract document for its proper implementation by contractor/sub-contractor. Thus, the adherence to the clauses by the contractor is regularly monitored especially in respect of various implementation E & S measures including health and safety aspects. As part of the present study, mitigation measures as stipulated in the IEAR have been critically assessed/evaluated for compliance through physical inspection, verification of record/ documents/ drawing, interaction with project officials/contractor/ villagers/construction workers and PRA etc. Based on above, a detailed compliance status w.r.t. each identified impacts enlisted in EMP have been prepared and is presented in **Table 5.10**.

Table 5.10: Compliance of EMP

Cl. No.	Project activity/ stage	Potential impact	Proposed mitigation measures	Compliance Status
Pre-Construction				
1	Location of overhead line towers/ poles/ underground distribution lines and alignment & design	Exposure to safety related risks	Setback of dwellings to overhead line route designed in accordance with permitted level of power frequency and the regulation of supervision at sites.	Complied with. Route alignment criterion is part of survey contract wherein all statutory Electrical clearances as stipulated under CEA's regulations, 2010 (Measures related to safety & electric supply) are considered/ ensured.
2	Equipment specifications and design parameters	Release of chemicals and gases in receptors (air, water, land)	PCBs not used in substation transformers or other project facilities or equipment.	Complied with. Part of technical specification of transformer. PCB is not used or non-detectable level (i.e. less than 2mg/kg) as per IEC 61619 or ASTM D4059
			Processes, equipment and systems not to use chlorofluorocarbons (CFCs), including halon, and their use, if any, in existing processes and systems should be phased out and to be disposed of in a manner consistent with the requirements of the Government	Complied with. CFC free equipments are being procured.
3	Transmission/ Distribution line design	Exposure to electromagnetic interference	Line design to comply with the limits of electromagnetic interference from overhead power lines	Complied with. AEGCL/ APDCL follows the best international practices while designing its system to maintain acceptable prescribed Electro Magnetic Field (EMF) level. Designed as per guidelines of ICNIRP and ACGIH and checked by CPRI & M/s PTI, USA
4	Substation location and design	Exposure to noise	Design of plant enclosures to comply with noise regulations.	Complied with. Transformers with maximum noise emitting level of 75 dB specified in tender specifications. Sound proof enclosures used for D.G sets
		Social inequities	Careful selection of site to avoid encroachment of socially, culturally and archaeological sensitive areas (i. g. sacred groves, graveyard,	Complied with. No encroachment of any socially sensitive areas due to proposed substations.

Cl. No.	Project activity/ stage	Potential impact	Proposed mitigation measures	Compliance Status please state pending issues and recommendations
			religious worship place, monuments etc.)	
5	Location of overhead line towers/poles/ laying of underground distribution line & alignment and design	Impact on water bodies	Avoidance of such water bodies to the extent possible. Avoidance of placement of tower inside water bodies to the extent of possible	Partially Complied with. Part of detailed alignment survey and design. No tower/pole located in water bodies.
		Social inequities	Careful route selection to avoid existing settlements and sensitive locations	Complied with. Part of detailed tower/pole alignment survey design. All socially sensitive areas including habitated areas avoided for TLs. However, DLs due to their functional mandate are bound to pass through habited areas.
			Minimise impact on agricultural land	Complied with. Though major section of proposed lines are routed through agricultural land in order to avoid impact on environmentally/ socially sensitive areas, efforts such as scheduling of construction lean/ post-harvest period, consultation with local authorities/ autonomous councils etc. are being made to minimize impacts on agricultural land/produce to the extent possible
			Careful selection of site and route alignment to avoid encroachment of socially, culturally and archaeological sensitive areas (i. e. sacred groves, graveyard, religious worship place, monuments etc.)	Complied with. All settlements & ecologically sensitive areas avoided.
6	Involuntary acquisition or permanent land acquisition for substation.	Social inequities	Compensation and R&R measures as per provision of RFCTLARRA, 2013	Since no involuntary acquisition of land is involved, there is no R&R issue.
7	Line through protected area/ precious ecological area	Loss of precious ecological values/ damage to precious species	Avoid siting into such areas by careful site and alignment selection (National Parks, Wildlife Sanctuary, Biosphere Reserves/ Biodiversity	Complied with. Part of detailed siting and alignment survey/design. All such areas are avoided

Cl. No.	Project activity/ stage	Potential impact	Proposed mitigation measures	Compliance Status
			Hotspots)	
			Minimize the need by using RoW wherever possible	
8	Line through identified Elephant corridor / Migratory bird	Damage to the Wildlife/ Birds and also to line	Study of earmarked elephant corridors to avoid such corridors, Adequate ground clearance, Fault clearing by Circuit Breaker, Barbed wire wrapping on towers, reduced spans etc., if applicable	Not Applicable as there are no wildlife corridors
			Avoidance of established/ identified migration path (Birds & Bats). Provision of flight diverter/reflectors, Bird guard, elevated perches, insulating jumper loops, obstructive perch deterrents, raptor hoods etc., if applicable	Complied with. All such identified/ established birds migratory path have been avoided.
9	Line through forestland	Deforestation and loss of biodiversity, edge effect	Avoid siting of line by careful site and alignment selection	Complied with. Forest land has been completely avoided.
			Minimise the need by using existing towers, tall towers and RoW, wherever possible	Complied with. Forest land has been completely avoided.
			Measures to avoid invasion of alien species	Invasion of alien species not anticipated
			Obtain statutory clearances from the Government	NA
			Consultation with autonomous councils wherever required	Complied with. NOC are being obtained from the village councils.
10	Lines through farmland	Loss of agricultural production/ change in cropping pattern	Use existing tower or footings wherever possible	Complied with. While passing through agricultural land construction activities are scheduled mostly during lean period so that damage to standing crop is avoided. However, full compensation as per assessment of revenue authorities is paid to land owner/farmer in case of inevitable damages.
			Avoid siting new towers on farmland wherever feasible	
11	Noise related	Nuisance to neighbouring	Substations sited and designed to ensure noise	Complied with.

Cl. No.	Project activity/ stage	Potential impact	Proposed mitigation measures	Compliance Status
		properties	will not be a nuisance	Part of detailed equipment design. Substations are appropriately sited and away from settlement area. Transformers with maximum noise emitting level of 75 dB and DG set with proper enclosures are part of equipment specification/ design criteria.
12	Interference with drainage patterns/Irrigation channels	Flooding hazards/ loss of agricultural production	Appropriate sitting of towers to avoid channel interference	Complied with. Part of detailed alignment survey, Interference with drainage patterns/ irrigation channels not anticipated
13	Escape of polluting materials	Environmental pollution	Transformers designed with oil spill containment systems, and purpose-built oil, lubricant and fuel storage system, complete with spill cleanup equipment.	Complied with. Part of detailed equipment design /drawings. Designed with oil spill containment systems having sump of capacity of 200% of oil volume of largest transformer.
			Substations to include drainage and sewage disposal systems to avoid offsite land and water pollution.	Complied with. Proper drainage and sewage system are part of detailed substation layout and design /drawings based on site condition.
14	Equipment submerged under flood	Contamination of receptors	Substations constructed above the high flood level (HFL) by raising the foundation pad	Complied with. Part of detailed substation layout and design /drawings. All substations are being constructed above HFL.
15	Explosions /Fire	Hazards to life	Design of substations to include modern firefighting equipment	Complied with. Part of detailed substation layout and design /drawings. Compliance assured by site manager
			Provision of firefighting equipment to be located close to transformers	Complied with. Part of detailed substation layout and design /drawings. Compliance assured by site manager
Construction				
16	Equipment layout and installation	Noise and vibrations	Construction techniques and machinery selection seeking to minimize ground disturbance.	Complied with (Refer Section 5.3.5). Noise produced by concrete mixing equipment and excavators are temporary and confined to

Cl. No.	Project activity/ stage	Potential impact	Proposed mitigation measures	Compliance Status
				day time only. No ground disturbance observed.
17	Physical construction	Disturbed farming activity	Construction activities on cropping land timed to avoid disturbance of field crops (within one month of harvest wherever possible).	Complied with (Refer Section 5.2.2). Excavations not done during monsoon which is the cropping period. However, full compensation as per assessment of revenue authorities are being paid to land owner/ farmer by IA/AEGCL/APDCL in case of inevitable damages. Till date no grievance has been received in this regard
18	Mechanized construction	Noise, vibration and operator safety, efficient operation	Construction equipment to be well maintained.	Complied with (Refer Section 5.3.5). Some noise is unavoidable during day time but no noise at night as no work is being undertaken at night. Noise levels' measurements are done regularly by IA & Construction contractor. Noise level measured during site visits to all active sites found to be within permissible limits (<75 dB). Till date no grievance has been received in this regard
		Noise, vibration, equipment wear and tear	Turning off plant not in use.	Complied with.
19	Construction of roads for accessibility	Increase in airborne dust particles	Existing roads and tracks used for construction and maintenance access to the line wherever possible.	Complied with. Existing roads and tracks have been used for construction and maintenance.
		Increased land requirement for temporary accessibility	New access ways restricted to a single carriageway width within the RoW.	Complied with. Most of the tower locations are easily accessible through existing roads/ paths. All substations sites are located close to existing road.
20	Construction activities	Safety of local villagers	Coordination with local communities for construction schedules, Barricading the construction area and spreading awareness	Complied with (Refer Section 5.4.2). Excavated areas are barricaded and restriction to enter work site during construction have

Cl. No.	Project activity/ stage	Potential impact	Proposed mitigation measures	Compliance Status
			among locals	been strictly followed. Till date no grievance has been received in this regard
		Local traffic obstruction	Coordination with local authority/ requisite permission for smooth flow of traffic	Complied with. Most of the tower/pole locations are in agricultural land. Hence, no traffic obstruction is witnessed. For substation location, smooth traffic flow is ensured by project authorities/contractor in close co-ordination with local authorities wherever necessary.
21	Temporary blockage of utilities	Overflows, reduced discharge	Measure in place to avoid dumping of fill materials in sensitive drainage area	Complied with (Refer Section 5.3.5). No dumping is observed. All overburden is managed optimally by reutilizing it as fill materials.
22	Site clearance	Vegetation	Marking of vegetation to be removed prior to clearance, and strict control on clearing activities to ensure minimal clearance.	Complied With. Prior to undertaking clearance, marking has been undertaken to ensure minimal removal of vegetation during detailed survey. Minimum trees have been felled for construction of T&D network and sub-stations.
			No use of herbicides and pesticides	Not Applicable
23	Trimming /cutting of trees within RoW	Fire hazards	Trees allowed growing up to a height within the RoW by maintaining adequate clearance between the top of tree and the conductor as per the regulations.	Complied With. Regulated felling in RoW is being carried out with the permission of owner and revenue authorities keeping required electrical clearance as per applicable norms (CEA's regulations, 2010 (Measures related to safety & electric supply)
		Loss of vegetation and deforestation	Trees that can survive pruning to comply should be pruned instead of cleared.	Complied With. Actual damage/tree felling is minuscule and limited 3m strip below each conductor and not in entire RoW. However, after stringing natural vegetation is allowed to regrowth in all

Cl. No.	Project activity/ stage	Potential impact	Proposed mitigation measures	Compliance Status
				these cleared strips except for one strip which is kept clear of vegetation for maintenance purpose. In remaining RoW area, only pruning/ pollarding is done to maintain electrical clearance.
			Felled trees and other cleared or pruned vegetation to be disposed of as authorized by the statutory bodies.	Complied With. Felled trees are handed over to land owner. IA/AEGCL/APDCL have no role in storage or disposal of felled trees/wood
24	Wood/ vegetation harvesting	Loss of vegetation and deforestation	Construction workers prohibited from harvesting wood in the project area during their employment, (apart from locally employed staff continuing current legal activities)	Complied with. Cooking Gas/ fuel wood is being provided by the Contractor.
25	Surplus earthwork/soil	Runoff to cause water pollution, solid waste disposal	Soil excavated from tower footings/ substation foundation disposed of by placement along roadsides, or at nearby house blocks if requested by landowners	Partially Complied with (Refer Section 5.4.1). Soil backfilled and excess spread out evenly and compacted in case of tower/ pole. In case of substation, excavated soil is not properly stored and no dumping observed in visited sites/ location.
26	Substation construction	Loss of soil	Loss of soil is not a major issue as excavated soil will be mostly reused for filling. However, in case of requirement of excess soil the same will be met from existing quarry or through deep excavation of existing pond or other nearby barren land with agreement of local communities	Complied with (Refer Section 5.4.1, 5.4.4 & 5.4.5). Excavated soil used optimally for backfilling and distribution within the substations' boundary is adequate. However, excess soil was required for one 132/33 kV substation. Sources were identified and approved.
		Water pollution	Construction activities involving significant ground disturbance (i.e. substation land forming) not undertaken during the monsoon season	Complied with No construction during monsoons. No seepage or water pollution observed.
27	Site clearance	Vegetation	Tree clearances for easement establishment to only involve cutting trees off at ground level or pruning as appropriate, with tree stumps and	Complied with Already explained at clause no. 23.

Cl. No.	Project activity/ stage	Potential impact	Proposed mitigation measures	Compliance Status
			roots left in place and ground cover left undisturbed	
28	Substation foundation/ Tower erection disposal of surplus earthwork/fill	Waste disposal	Excess fill from substation/tower foundation excavation disposed of next to roads or around houses, in agreement with the local community or landowner	Complied with (Refer Section 5.4.1 & 5.4.4) Excavated soil optimally used. Backfilling and spreading of excess soil within substation area undertaken by project authorities
29	Storage of chemicals and materials	Contamination of receptors (land, water, air)	Fuel and other hazardous materials securely stored above high flood level.	Proper compliance to be ensured. To be stored in designated area inside the premise at most sites.
30	Construction schedules	Noise nuisance to neighbouring properties	Construction activities only undertaken during the day and local communities informed of the construction schedule.	Complied with Construction in day time only
31	Provision of facilities for construction workers	Contamination of receptors (land, water, air)	Construction workforce facilities to include proper sanitation, water supply and waste disposal facilities.	Complied with (Refer Section 5.4.6). As assured by the IA.
32	Influx of migratory workers	Conflict with local population to share local resources	Using local workers for appropriate asks	Complied with (Refer Section 5.4.6). Local workforces have been given preference based on skill levels.
33	Lines through farmland	Loss of agricultural productivity	Use existing access roads wherever possible	Complied with. Observation already provided at Clause no 19 above. Repair/restoration done immediately wherever required. Till date no grievance has been received in this regard.
			Ensure existing irrigation facilities are maintained in working condition	
Protect /preserve tops soil and reinstate after construction completed				
Repair /reinstate damaged bunds etc. after construction completed				
		Social inequities	Land owners/ Farmers compensated for any temporary loss of productive land as per existing regulation.	Compensation for land and damage to crop/tree etc. is being paid to land owner after assessment by revenue authorities. It is suggested that project authorities expedite process for early payment
34	Uncontrolled erosion/silt runoff	Soil loss, downstream siltation	Need for access tracks minimised, use of existing roads.	Complied with (Refer Section 5.4.1). Observation already provided at Clause no 19 above.
			Limit site clearing to work areas	

Cl. No.	Project activity/ stage	Potential impact	Proposed mitigation measures	Compliance Status
			Regeneration of vegetation to stabilise works areas on completion (where applicable)	Construction during monsoon avoided as far as possible.
			Avoidance of excavation in wet season	
			Water courses protected from siltation through use of bunds and sediment ponds	
35	Nuisance to nearby properties	Losses to neighbouring land uses/ values	Contract clauses specifying careful construction practices.	Complied with (Refer Section 5.4.2). Good construction practices with proper scheduling of construction activities observed in all active sites. No major deviation with respect to contract conditions by the contractor found/reported
			As much as possible existing access ways will be used	
			Productive land will be reinstated following completion of construction	
		Social inequities	Compensation will be paid for loss of production, if any.	Observation already provided at Clause no 33 above.
36	Flooding hazards due to construction impediments of natural drainage	Flooding and loss of soils, contamination of receptors (land, water)	Avoid natural drainage pattern/ facilities being disturbed/blocked/ diverted by ongoing construction activities	Complied with. Good construction management practices are being employed at sites to avoid blockage of natural drainage and resultant flooding.
37	Equipment submerged under flood	Contamination of receptors (land, water)	Equipment stored at secure place above the high flood level (HFL)	Complied with. (Refer Section 5.4.1). Substations are constructed above HFL.
38	Inadequate siting of borrow areas (quarry areas)	Loss of land values	Existing borrow sites will be used to source aggregates, therefore, no need to develop new sources of aggregates	Complied with. Observation already provided at Clause no 26 above.
39	Health and safety	Injury and sickness of workers and members of the public	Safety equipment's (PPEs) for construction workers	Complied with (Refer Section 5.4.6). As assured by the IA.
			Contract provisions specifying minimum requirements for construction camps	
			Contractor to prepare and implement a health and safety plan.	
			Contractor to arrange for health and safety training sessions	
40	Inadequate construction stage monitoring	Likely to maximise damages	Training of environmental monitoring personnel	More specific and periodic awareness/ training on IEAR, ESPPF etc. requirements for effective
			Implementation of effective environmental	

Cl. No.	Project activity/ stage	Potential impact	Proposed mitigation measures	Compliance Status
			<p>monitoring and reporting system using checklist of all contractual environmental requirements</p> <p>Appropriate contract clauses to ensure satisfactory implementation of contractual environmental mitigation measures.</p>	implementation/ monitoring of provisions of IEAR, ESPPF and contract conditions to achieve 100% compliance.
Operation and Maintenance				
41	Location of line towers/poles and overhead/ underground line alignment & design	Exposure to safety related risks	Setback of dwellings to overhead line route designed in accordance with permitted level of power frequency and the regulation of supervision at sites.	Complied/Being complied. Route alignment criterion is part of survey contract which was followed thoroughly during construction and no incident have been reported so far.
42	Line through identified bird flyways, migratory path	Injury/ mortality to birds, bats etc. due to collision and electrocution	Avoidance of established/ identified migration path (Birds & Bats). Provision of flight diverter/reflectors, elevated perches, insulating jumper loops, obstructive perch deterrents, raptor hoods etc., if applicable	Complied/Being complied. <i>have any incidents reported in past?</i> The line routes don't form part of any such areas. Moreover, no incident of injury /mortality of avifauna due to construction of lines have been reported from any sites so far.
43	Equipment submerged under flood	Contamination of receptors (land, water)	Equipment installed above the high flood level (HFL) by raising the foundation pad.	Complied/ Being complied. Already part of detailed substation design.
44	Oil spillage	Contamination of land/nearby water bodies	Substation transformers located within secure and impervious sump areas with a storage capacity of at least 100% of the capacity of oil in transformers and associated reserve tanks.	Complied/ being complied Oil sump of sufficient capacity already provided for each transformer which was also part of detailed substation design. However, no spillage of transformer oil is observed/ reported so far.
45	SF6 management	Emission of most potent GHG causing climate change	Reduction of SF6 emission through awareness, replacement of old seals, proper handling & storage by controlled inventory and use, enhance recovery and applying new technologies to reduce leakage	Complied/ being complied. Regular monitoring and controlled inventory is ensured to avoid any leakage of SF6.
46	Inadequate provision of staff/workers health and safety during operations	Injury and sickness of staff /workers	<p>Careful design using appropriate technologies to minimise hazards</p> <p>Safety awareness raising for staff.</p>	Complied/ being complied. All safety related precautions/ systems/ plans are in place. Proper safety training for

Cl. No.	Project activity/ stage	Potential impact	Proposed mitigation measures	Compliance Status
			Preparation of fire emergency action plan and training given to staff on implementing emergency action plan Provide adequate sanitation and water supply facilities	workers are being conducted on regular interval including mock drills on fire and other occupational hazards. However, more training to be conducted to create awareness on use of PPEs /safety gear.
47	Electric Shock Hazards	Injury/ mortality to staff and public	Careful design using appropriate technologies to minimise hazards Security fences around substations Barriers to prevent climbing on/ dismantling of transmission Appropriate warning signs on facilities Electricity safety awareness raising in project areas	Complied/ being complied. Used of technology like tripping line/substation in milliseconds in case of any hazards. Boundary and Security fences are maintained at each substation. Sufficient barriers with warning signages are maintained at appropriate places of line/substation. Further, regular awareness/ mock drill on electrical safety and other occupational hazards are being undertaken.
48	Operations and maintenance staff skills less than acceptable	Unnecessary environmental losses of various types	Adequate training in O&M to all relevant staff of substations & transmission/ distribution line maintenance crews. Preparation and training in the use of O&M manuals and standard operating practices	Being complied. Regular trainings are being imparted to staffs engaged in O & M activity based on their skill at regular interval
49	Inadequate periodic environmental monitoring.	Diminished ecological and social values.	Staff to receive training in environmental monitoring of project operations and maintenance activities.	Being complied.
50	Equipment specifications and design parameters	Release of chemicals and gases in receptors (air, water, land)	Processes, equipment and systems using cholorofluorocarbons (CFCs), including halon, should be phased out and to be disposed of in a manner consistent with the requirements of the Govt.	Complied/ Being complied. Already part of equipment specification (CFC Free)
51	Transmission/ distribution line maintenance	Exposure to electromagnetic interference	Transmission/ distribution line design to comply with the limits of electromagnetic interference from overhead power lines	Complied/ Being complied. Designed as per guidelines of ICNIRP and ACGIH and checked by CPRI &M/s PTI, USA.
52	Uncontrolled growth of vegetation	Fire hazard due to growth of tree/shrub	Periodic pruning of vegetation to maintain requisite electrical clearance.	Being complied.

Cl. No.	Project activity/ stage	Potential impact	Proposed mitigation measures	Compliance Status
		/bamboo along RoW	No use of herbicides/ pesticides	
53	Noise related	Nuisance to neighbouring properties	Substations sited and designed to ensure noise will not be a nuisance.	Complied/ being complied. The average noise level reported at the boundary of substation is well within permissible limit.

5.9 CONCLUSIONS

It is vivid from the above discussion that all transmission & distribution line routes and substations location have been selected judiciously by considering the technical, environmental, socio-economic aspects. Though some changes in line length & route alignment have been observed in transmission /distribution lines as compared to IEAR scope but as a result careful route selection IA could able to avoid ecologically & socially sensitive areas including forest, protected areas, PCR etc. completely in all the lines and substations being implemented under this project.

The provisions of IEAR & EMP are being implemented at ground level and strict compliance by construction contractors is ensured through regular monitoring by IA. So far, no major impacts apart from earlier identified impacts are anticipated due to such changes in scope. Besides, all other applicable laws/rules/regulations of the country & funding agencies are being complied with and till date no violation/ penalty with respect to contravention of any regulations has been reported. During assessment, it has also been observed that so far, the project has achieved zero fatality with no major non-compliance of EMP/Contract provisions as stipulated in IEAR, which is an indicative of the strict vigil of the IA.

It has also emerged from the survey & PRA exercise that the PAPs were appreciative of the project and hoped that the power scenario would improve after commissioning of the project. Local people also benefited through project related employment that was being generated. However, following suggestions may be considered to further improve the safeguard measures and also enhance the environmental sustainability of project.

- During the construction phase, the implementing agency needs to ensure strict compliance of the contract provisions/EMP by Contractor especially in respect of workers health and safety.
- Along with labours, supervisors, engineers and Staff of Implementing Agency (IA) should also need to follow the health and safety precautions.
- Need of regular induction and training program for labours and engineers at all sites.
- Training for PMU staff regarding monitoring and implantation of EMP as proposed in IEAR.
- Records of labour registration, health checkup of labours and other working staff need to be maintained at all sites and strictly monitoring to avoid engagement of child labour.
- Training and awareness regarding cleanliness and solid waste disposal to maintain the hygiene in the labour camps and construction sites.
- Demarcation and protection for sites where work has been on hold due to various reasons to avoid accidents and runoff of excavated soil from construction sites
- Project staff of the implementing agency should be well versed with the contents of the IEAR so as to ensure proper compliance by the contractors.

Overall, the commissioning of the project will augment the power distribution and availability in the region which will further catalyze economic activity and development of the area/region.

Chapter 6

MONITORING AND ORGANIZATION SUPPORT STRUCTURE

For smooth implementation of this project, following administrative and functional set up have been institutionalized for project implementation, review and monitoring etc.

6.1 ADMINISTRATIVE ARRANGEMENT FOR PROJECT IMPLEMENTATION

Central Project Implementation Unit (CPIU) - A body responsible for coordinating the preparation and implementation of the project housed within the IA's offices at Guwahati. The "Project-In-Charge" of IA & Head of each of the SPCU shall be a member of CPIU.

State Project Coordination Unit (SPCU) – A body formed by the State Utility and responsible for coordinating with IA in preparing and implementing the project at the State level. It consists of experts across different areas from the Utility headed by an officer of the rank not below Chief Engineer, from the Utility.

Project Implementation Unit (PIU) – A body formed by the IA, including members of Utility on deputation, and responsible for implementing the Project across the State, with its personnel being distributed over the work site/s & operating in close association with the SPCU/ CPIU. PIU reports to the State level "Project Manager" nominated by the Project-in-Charge of IA. The IA has a Core team stationed at the CPIU on a permanent basis, and other IA officers (with required skills) make visits as and when required by this core team. This team represents IA is responsible for all coordination with SPCU, PIU, within IA and MoP, Gol. CPIU also assists MoP, Gol in monitoring project progress and coordination with The Bank.

6.2 REVIEW OF PROJECT IMPLEMENTATION PROGRESS

To enable timely implementation of the project/subprojects, following committee has been set up to review the progress;

- A. Joint Co-ordination Committee (JCC):** IA and SPCU nominate their representatives in a body called JCC to review the project. IA specifies quarterly milestones or targets, which are reviewed by JCC through a formal monthly review meeting. This meeting forum is called as Joint Co-ordination Committee Meeting (JCCM). The IA convenes & keeps record of every meeting. MoP, Gol and The Bank join in as and when needed.
- B. High Power Committee (HPC):** The Utility in consultation with its State Government has constituted a High Power Committee (HPC) consisting of high level officials from the Utility, State/ District Administration, Law enforcement agencies, Forest Department, etc. so that various permission/ approvals/ consents/ clearances etc. are processed expeditiously so as to reach the benefits of the Project to the end consumers. HPC meets on bimonthly basis or earlier, as per requirement. This forum is called as High Power Committee Meeting (HPCM) and the SPCU keeps records of every meeting. Minutes of the meeting will be shared with all concerned and if required, with Gol and The Bank.

- C. Contractor's Review Meeting (CRM):** Periodic Review Meeting is held by officials of PIU with Contractors at field offices, State Head Quarters (PIU location) and if required with core team of IA at Guwahati. These meetings are called "Contractor's Review Meeting" (CRM). PIU shall keep a record of all CRMs, which shall be shared with all concerned and if required, with Gol and The Bank.
- D.** Review meetings are held among MoP, Gol, The Bank, State Government, Utility and IA, at four (4) months interval or earlier if needed, primarily to maintain oversight at the top level, and also to debottleneck issues that require intervention at Gol/ State Government level. Minutes of the meeting shall be prepared by IA and shared with all concerned.

6.3 E&S MONITORING

The arrangement for monitoring and reviewing of project from the perspective of environment and social management forms part of overall arrangements for project management and implementation environment. Environmental monitoring is a continuous process throughout the Project life cycle starting from site selection to construction and maintenance stage. As IA, POWERGRID endeavours to implement the project in close coordination with the respective state power utilities and departments. POWERGRID has been implementing the project based on the Implementation/Participation agreements that were signed separately between POWERGRID and the Power utilities.

The IA has appointed dedicated Environment Officer in each state including Assam to oversee the E&S management. Besides, AEGCL/APDCL has formed a separate cell at the corporate office level namely Environment and Social Management Cell (ESMC) headed by Director PMU for proper implementation and monitoring of environmental & social management measures. Apart from day to day E&S monitoring other major responsibilities are;

- Coordinating environmental and social commitments and initiatives with various multilateral agencies, MoEF&CC and Govt. of Assam.
- Coordination of all environmental activities related to a project from conceptualization to operation and maintenance stage.
- Advising site offices to follow-up with the state forest offices and other state departments for expediting forest clearances and other E&S issues of various projects.
- Providing a focal point for interaction with the MoEF&CC for expediting forest clearances
- Training of Circle and Site officials on E&S issues arising out of Transmission/Distribution projects and their management plan.
- Training of other departments to familiarize them with the ESPP document.

Additionally, Field In-Charge reviews the progress on daily basis and periodic review by higher management including review by Heads of SPCU and CPIU undertaken wherein apart from construction issues the environmental aspects of the projects are discussed and remedial measures taken wherever required. Besides, Periodic Contractor's Review Meeting (CRM) are being held by officials of PIU with Contractors at field offices, State Head Quarters (PIU location) and with CPIU at Guwahati for better co-ordination and resolution any pending issues. The World Bank mission team also visits various sites every six months to review the

progress status including ground level implementation of safeguard measures. Any observation/agreed action plan suggested by the Bank is religiously complied in time bound manner. Additionally, review meeting among MoP, Gol, The Bank, State Governments., Utility and IA being held periodically to maintain oversight at the top level and also to debottleneck issues that require intervention at Gol/ State Government level.

The Capacity building and Institutional Strengthening program of the IA is held intermittently to enhance the skills of the project officials. Besides, separate E&S training are also organized for Official of State Utility under Capacity Building & Institutional Strengthening (CBIS) programme. Further, State utility meetings between IA and AEGCL/ APDCL are held on a monthly/ bimonthly basis to assess the work progress and difficulties encountered in respect of land acquisition, RoW and compensation if any.

The IA has a continuous monitoring mechanism of the project w.r.t. compliance of the mitigation measures as stipulated in the IEAR. Thus, the adherences to the clauses by the contractors are regularly monitored especially in respect of various implementations of E&S measures including health and safety aspects. Due to such strong institutional support structure coupled with monitoring mechanism in place, no major non-compliance was observed/reported during the implementation of projects till date. The project has so far had zero fatality which is indicative of the strict vigil of the IA. During the present study, it was observed that mitigation measures as suggested in IEAR are mostly complied with even though some gaps were found with respect to proper documentation and condition of labour camp at one of the DMS sub-station.

6.4 GRIEVANCE REDRESSAL MECHANISM (GRM)

Grievance Redress Mechanism (GRM) is an integral and important mechanism for addressing/resolving the concern and grievances in a transparent and swift manner. In accordance with the provision in ESPPF, Grievance Redress Committees (GRC) have to be constituted in Assam both at the project/site level and at Corporate/HQ. This GRC is aimed to provide a trusted way to voice and resolve environment & social concerns of the project, and to address the concerns of the affected person/community in a time bound manner without impacting project implementation.

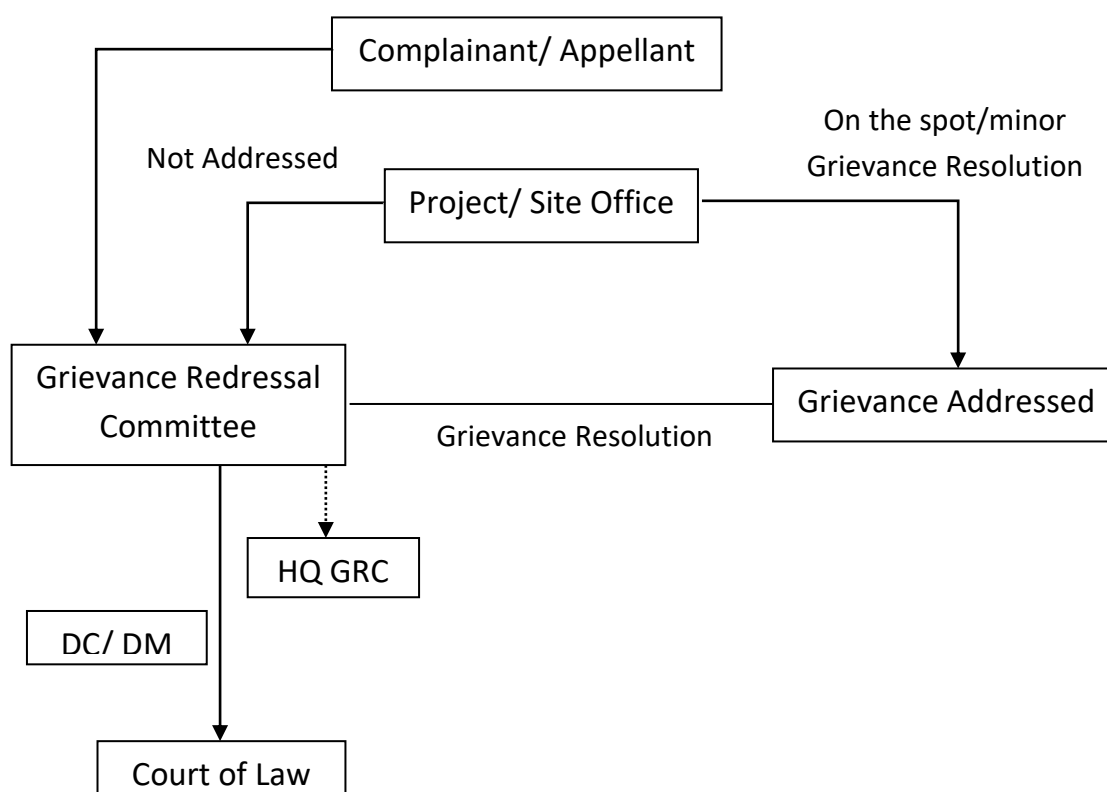
The Corporate/HQ level GRC has been constituted and notified which is headed by Director (PMU). Similarly, project level GRCs have been constituted for each transmission and substations covered under this project. Notifications of Corporate & Project level GRC are placed as **Annexure IX**.

Apart from above, grievance redressal is in built in crop/tree/tower footing compensation process where affected persons are given a chance to place their grievances after issuance of notice by revenue officials on the basis of assessment of actual damages. Grievances received towards compensation are generally addressed in open forum and in the presence of many witnesses. Process of spot verification and random checking by the district collector/ its authorized representative also provides forum for raising the grievance towards any irregularity/complain. Moreover, AEGCL/ APDCL & POWERGRID officials also address to the

complaints of affected farmers and the same are forwarded to revenue official for doing the needful, if required.

It may also be noted that concerns of public are addressed regularly through public consultation process which started from project planning to construction and will be continued in operation and maintenance also. Besides, many concerns/grievances from affected persons/public have been received by Site Offices which are also regularly tracked for early resolution. However, it has been observed that most of them were minor in nature and were resolved instantly and amicably by Site Officials after discussion & deliberation with affected person/ in consultation of revenue/district officials.

The flow chart showing Grievance Redressal Mechanism is presented below.



The above referred GRCs are meant to act as supplement/ complement and in no way substitute the legal systems, especially embedded within RFCTLARR Act 2013, The Electricity Act, 2003, and Right to Information Act.

6.4.1 Grievances Received & Resolved

Till date no grievances have been received at site during project execution. Details of complaints received up to February, 2022 are given in **Table 6.1**.

Table 6.1: Details of Complaints

S. No.	Name of the Subproject /State	Location	Name of complainants	Date of complaints	Main Issue of complaints	Status of complaint
A. Court Cases						
No Court Case has been registered so far against any subprojects under NERPSIP						
B. Written Complaints						

S. No.	Name of the Subproject /State	Location	Name of complainants	Date of complaints	Main Issue of complaints	Status of complaint
No written complaint has been received so far						
C. Verbal Complaints						
No verbal complaint has been received so far						

ANNEXURE I

List of Angiosperm

LIST OF PLANT SPECIES (Angiosperms)

S. No.	Family	Species Name	Habit	Common Name
1	Acanthaceae	<i>Adhatoda vesica</i>	Shrub	Malabar nut
2	Acanthaceae	<i>Andrographis paniculata</i>	Herb	Green chiretta
3	Agavaceae	<i>Agave cantula</i>	Herb	Bombay Aloe
4	Amaranthaceae	<i>Achyranthes aspera</i>	Herb	Chaff-flower
5	Amaranthaceae	<i>Aerva lanata</i>	Herb	the mountain knotgrass
6	Amaranthaceae	<i>Amaranthus viridis</i>	Herb	Green amaranth / Khutura
7	Anacardiaceae	<i>Mangifera indica</i>	Tree	Mango
8	Apocynaceae	<i>Alstonia scholaris</i>	Tree	Saptparni
9	Apocynaceae	<i>Calotropis gigantea</i>	Shrub	Giant Indian Milkweed
10	Araceae	<i>Colocasia esculenta</i>	Herb	Pindalu
11	Arecaceae	<i>Areca catechu</i>	Tree	Areca Palm
12	Arecaceae	<i>Phoenix dactylifera</i>	Tree	Date Palm
13	Asteraceae	<i>Ageratum conyzoides</i>	Herb	Billygoat weed
14	Asteraceae	<i>Chromolaena odorata</i>	Shrub	Devil weed
15	Asteraceae	<i>Crassocephalum crepidioides</i>	Herb	Ebolo
16	Asteraceae	<i>Enhydra fluctuans</i>	Herb	Helosi-sak
17	Asteraceae	<i>Vernonia cinera</i>	Herb	Little ironweed
18	Asteraceae	<i>Xanthium strumarium</i>	Herb	Rough cocklebur
19	Bombacaceae	<i>Bombax ceiba</i>	Tree	Semal
20	Calophyllaceae	<i>Mesua ferrea</i>	Tree	Ceylon ironwood
21	Caricaceae	<i>Carica papaya</i>	Tree	Papaya
22	Combretaceae	<i>Terminalia arjuna</i>	Tree	Arjun Tree
23	Combretaceae	<i>Terminalia bellerica</i>	Tree	Bahera
24	Convolvulaceae	<i>Ipomoea cornea</i>	Shrub	The pink morning glory
25	Dilleniaceae	<i>Dillenia pentagyna</i>	Tree	Karmal
26	Euphorbiaceae	<i>Acalypha indica</i>	Herb	Indian acalypha
27	Euphorbiaceae	<i>Mallotus Phillipensis</i>	Tree	kumkum tree
28	Euphorbiaceae	<i>Ricinus communis</i>	Shrub	Castor bean
29	Fabaceae	<i>Acacia auricorlifomis</i>	Tree	Australian Babool
30	Fabaceae	<i>Albezia chinensis</i>	Tree	Black siris
31	Fabaceae	<i>Albezia procera</i>	Tree	White siris
32	Fabaceae	<i>Albizia lebbeck</i>	Tree	Siris
33	Fabaceae	<i>Cassia abbreviata</i>	Tree	Long-tail cassia
34	Fabaceae	<i>Delonix regia</i>	Tree	Gulmohar
35	Fabaceae	<i>Desmodium cephalotes</i>	Shrub	Tick-trefoil
36	Fabaceae	<i>Erythrina variegata</i>	Tree	Indian Coral Tree
37	Fabaceae	<i>Saraca asoca</i>	Tree	Ashoka Tree
38	Fabaceae	<i>Tamarindus indica</i>	Tree	Tamarind
39	Lamiaceae	<i>Clerodendrum glandulosum</i>	Shrub	East Indian glory bower
40	Lamiaceae	<i>Gmelina arborea</i>	Tree	Gamhar
41	Lamiaceae	<i>Ocimum sanctum</i>	Herb	Holy Basil
42	Lamiaceae	<i>Tectona grandis</i>	Tree	Teak
43	Lamiaceae	<i>Vitex altissima</i>	Tree	Peacock chaste tree
44	Lamiaceae	<i>Vitex negundo</i>	Herb	five-leaved chaste tree
45	Lauraceae	<i>Actinodaphne obovata</i>	Tree	Pisa
46	Lauraceae	<i>Alseodaphne petiolaris</i>	Tree	Jatisundi
47	Lauraceae	<i>Machilus globosa</i>	Tree	Japanese Bay Tree
48	Liliaceae	<i>Allium sativum</i>	Herb	Garlic
49	Lythraceae	<i>Duabanga grandiflora</i>	Tree	Duabanga
50	Lythraceae	<i>Lagerstroemia speciosa</i>	Tree	Pride of India

S. No.	Family	Species Name	Habit	Common Name
51	Magnoliaceae	<i>Michelia glabra</i>	Tree	Champak
52	Marantaceae	<i>Maranta arundinacea</i>	Herb	Arrowroot
53	Melastomataceae	<i>Melastoma affine</i>	Shrub	Blue Tounge
54	Meliaceae	<i>Aglaia spectabilis</i>	Tree	Amari
55	Meliaceae	<i>Azadirachta india</i>	Tree	Neem
56	Meliaceae	<i>Chukrasia tabularis</i>	Tree	Chitta gong wood
57	Meliaceae	<i>Toona ciliata</i>	Tree	Toon
58	Moraceae	<i>Artocarpus chama</i>	Tree	Jackfruit
59	Moraceae	<i>Ficus bengalensis</i>	Tree	Banyan Tree
60	Moraceae	<i>Ficus religiosa</i>	Tree	Pipal
61	Moraceae	<i>Ficus roxburghii</i>	Tree	Fig tree
62	Moringaceae	<i>Moringa oleifera</i>	Tree	Drumstick
63	Musaceae	<i>Musa acuminata</i>	Herb	Banana
64	Myrtaceae	<i>Eucalyptus tereticornis</i>	Tree	forest red gum
65	Myrtaceae	<i>Syzygium cumini</i>	Tree	Jamun
66	Phyllanthaceae	<i>Baccaurea ramiflora</i>	Tree	Burmese Grape / Leteku
67	Phyllanthaceae	<i>Emblica officinalis</i>	Tree	Amla
68	Plantaginaceae	<i>Scoparia dulcis</i>	Herb	Goatweed
69	Poaceae	<i>Arundinella bengalensis</i>	Grass	River Grass
70	Poaceae	<i>Bambusa balcooa</i>	Grass	Bhaluka bamboo
71	Poaceae	<i>Bambusa cacharensis</i>	Grass	Bamboo
72	Poaceae	<i>Bambusa tulda</i>	Grass	Jati Bamboo
73	Poaceae	<i>Chrysopogn aciculatus</i>	Grass	lesser spear grass
74	Poaceae	<i>Dendrocalamus hamiltonii</i>	Grass	Koko bamboo
75	Poaceae	<i>Oplismenus compositus</i>	Grass	The running mountaingrass
76	Poaceae	<i>Saccharum spontaneum</i>	Grass	Kans grass
77	Rhamnaceae	<i>Ziziphus mauritiana</i>	Tree	Ber
78	Rubiaceae	<i>Anthocephalus chinensis</i>	Tree	Burflower-tree
79	Rubiaceae	<i>Morinda angustifolia</i>	Shrub	Narrow-Leaf Morinda
80	Rutaceae	<i>Aegle marmelose</i>	Tree	Bel
81	Rutaceae	<i>Murraya koenigii</i>	Shrub	Kari Patta
82	Sapindaceae	<i>Litchi chinensis</i>	Tree	Litchi
83	Sapotaceae	<i>Palaquium polyanthum</i>	Tree	Tali
84	Simaroubaceae	<i>Ailanthus excelsa</i>	Tree	Indian Tree of Heaven
85	Solanaceae	<i>Solanum indicum</i>	Shrub	Bari kateri
86	Theaceae	<i>Schima wallichii</i>	Tree	Needlewood tree
87	Urticaceae	<i>Boehmeria hamiltoniana</i>	Shrub	China Grass
88	Verbenaceae	<i>Lantana camara</i>	Shrub	Lantana

ANNEXURE II

Details of Tower & Pole Schedule

POWER GRID CORPORATION OF INDIA LTD.
L1LO 132 KV S/C GOLAGHAT -BOKAJAN AT SARUPATHAR T/L
M/S SIMPLEX INFRASTRUCTURES LIMITED
DETAILS SURVEY TOWER SCHEDULE FOR THE SECTION - AP-1 (ONLINE TOWER) TO GANTRY(0.270KM)

Sl.No.	AP NO.	LOCATION NO.	TOWER TYPE	EXT	Angle of Deviation	Span Length (m)	Section Length (m)	Reduced Level (m)	ADJ. SPAN (m)	Wind Span (m)	Hot Weight Span (m)			Cold Weight Span (m)			UTM COORDINATE Latitude Longitude	VILLAGE NAME	REMARKS		
											Left	Right	Total	Left	Right	Total					
1	AP-1/0	AP-1/0	DD+03	3	00°00'00"	65.00		117.59	65.00		117.00	117.00	194.00	194.00	26°11'41.84"N	93°54'4.94"E	IKARANI	ONLINE AUX-BOX CROSS ARM TOWER			
2	AP-2/0(D/E)	2/0	DD+00	0	83°34'22"LT	160.00	65.00	117.59	225.00	112.50	81.00	29.00	-129.00	84.00	26°11'41.70"N	93°54'7.46"E	IKARANI	AUX-BOX CROSS ARM TOWER			
3	AP-3/0(D/E)	3/0	DD+00	0	2°6'13"(LT)	45.00	160.00	117.324	205.00	102.50	75.00	109.00	72.00	44.00	26°11'46.53"N	93°54'8.65"E	IKARANI				
4	GANTRY	GANTRY		0	00°00'00"		45.00	117.61	40.00		11.00	11.00	1.00	-	26°11'47.83"N	93°54'8.84"E	IKARANI				
											TOTAL LENGTH= 0.270KM										

TOWER TYPE	TOWER ABSTRACT						TOTAL
	±0m	+5m	+10m	+15m	+20m	+25m	
DA	0	0	0	0	0	0	0
DB	0	0	0	0	0	0	0
DC	0	0	0	0	0	0	0
DD	2	1	0	0	0	0	3
TOTAL							3

SIMPLEX INFRASTRUCTURES LIMITED	
SURVEYED BY <i>S. B. Das</i>	CHECKED BY <i>S. B. Das</i>
	SUBMITTED BY <i>M. K. Pandit</i> Mohan Kr. Pandit Project Manager
POWER GRID CORPORATION OF INDIA LTD.	
CHECKED BY	APPROVED BY

Simplex Infrastructures Ltd.
TW07, PGCIL, Guwahati- 781007

Checked and found in order. Recommend for approval.

Approved

Silho

02/04/19

डि. दि. मिश्र / D. D. Misra
एन. इ. आर. पि. एस. आइ. पि. /NERPSIP
 पावरग्रिड/POWERGRID
 सरूपथार / Sarupathar

डि. दास / D. Das
अभियंता / Engineer
एन. इ. आर. पि. एस. आइ. पि. /NERPSIP
पावरग्रिड/POWERGRID



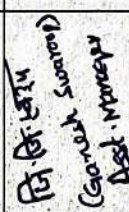
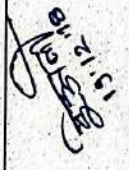
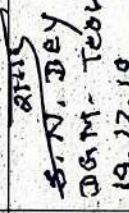
TOWER SCHEDULE FOR THE SECTION - TAPPING TOWER(AP-108) TO GANTRY(0.932KM) (DETAILS SURVEY)

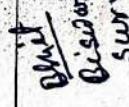

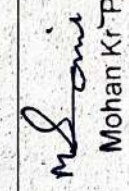
Sl.No.	AP NO.	LOCATION NO.	TOWER TYPE	EXT	Angle of Deviation	Span Length (m)	Section Length (m)	Reduced Level (m)	ADJ. SPAN (m)	Wind Span (m)	Hot Weight Span (m)		Cold Weight Span (m)		UTM COORDINATE		VILLAGE NAME	REMARKS	
											Left	Right	Total	Left	Right	Total			Latitude
1	AP-108	TAPPING TOWER NO. 108	DD+06	0	00°00'00"	42.00		93.89	42.00	21.00	-87.00	-87.00	26°50'5.70"	94°28'0.04"			KALITAPANI		
2	AP-109	1/0	DD+03	3	18°52'15" (RT)	289.00	42.00	93.36	331.00	163.50	104.00	233.00	26°50'7.00"	94°28'0.02"			KALITAPANI	NALA	
3	AP-2/0	2/0	DD+09	9	10°50'40" (LT)	203.00	289.00	93.8	492.00	246.00	179.00	314.00	26°50'16.44"	94°28'1.26"			KALITAPANI	SNOS NALA-33 KV LINE, TEA GARDEN	
4	AP-3/0	3/0	DD+06	6	6°15'55" (LT)	143.00	203.00	93.75	346.00	173.00	155.00	229.00	26°50'22.98"	94°28'0.51"			KALITAPANI	POND, 2NOS SERVILINEAL LINE, NH-37(JHORHAT TO SHIBSAGARI), NALA, TEA	
5	AP-4/0	4/0	DD+00	0	56°32'30" (LT)	59.00	143.00	93.21	202.00	101.00	-118.00	-122.00	26°50'27.28"	94°27'55.55"			KALITAPANI	NALA	
6	AP-5/0	5/0	DD+06	6	31°49'21" (LT)	81.00	59.00	91.70	140.00	70.00	145.00	314.00	26°50'28.18"	94°27'57.43"			KALITAPANI	NALA, LOW LAND AREA PROPOSED SHALLOW FOUNDATION	
7	AP-6/0	6/0	DD+00	0	51°59'53" (LT)	75.00	81.00	93.08	156.00	78.00	27.00	-37.00	26°50'26.90"	94°27'55.02"			KALITAPANI	POND, LOW LAND AREA	
8	AP-7/0 (D/E)	7/0	DD+00	0	13°52'55" (LT)	10.00	75.00	93.51	71.5.00	57.50	-57.00	-9.00	26°50'24.73"	94°27'54.96"			KALITAPANI	TEA GARDEN	
9	GANTRY	GANTRY	GANTRY	0	00°00'00"		10.00	93.20			97.00	97.00	26°50'23.39"	94°27'55.27"			KALITAPANI	SS BOUNDARY WALL	
											TOTAL LENGTH = 0.932 KM								


TOWER ABSTRACT

TOWER TYPE	+0m	-3m	-6m	-9m	+18m	-25m	TOTAL
DA	0	0	0	0	0	0	0
DB	0	0	0	0	0	0	0
DC	0	0	0	0	0	0	0
DD	3	1	2	1	0	0	7
TOTAL							7

Asst. General Manager
 T & T Division, AEGCL
 Gannur, Jorhat-7
 20/12/18

POWER GRID CORPORATION OF INDIA LTD.	
CHECKED BY  Gannur Sanyal Asst. Manager	RECOMMENDED BY  S.N. Dey 19.12.18
APPROVED BY  D.G.M. Teok 19.12.18	

SIMPLEX INFRASTRUCTURES LIMITED	
SURVEYED BY  Biswajit Sait Surveyor	CHECKED BY  Mohan Kr Pandit Project Manager
APPROVED BY  Mohan Kr Pandit Project Manager	


 Simplex Infrastructures Ltd.
 TW07, PGCIL, Guwahati- 781007
 C-3269

POLE SCHEDULE

33KV S/C SHAKARDEO NAGAR TO MAILLO LINE

CLIENT: POWER GRID CORPORATION OF INDIA LIMITED

CONTRACTOR: NECCON POWER & INFRA LIMITED

PACKAGE: ASM- ASM-DMS-01

LOA Ref.No: I.CC-CS/94-NER/REW-30791/G10/CA-I/7026-Supply

2.CC-CS/94-NER/REW-30791/G10/CA-II/7027-Services

SL. No.	Angle Point	Loc. No	Pole Type	Angle of Deviation	Span Length (m)	Cumm. Span (m)	Co-Ordinates		Description of Land	Crossing Details	Village Name	Remarks
							Latitude	Longitude				
1	1		Four Pole		54		25.987930	92.925340	S.s. Boundary		Pam Gaon	SP-76 Pole Required
2	AP-1		Four Pole	69°79'06"		54	25.987930	92.924800	Paddy Field-Pvt.	Over 33KV Line	Pam Gaon	SP-76 Pole Required
3			Double Pole	7°48'14"	50	0	25.987510	92.924628	Paddy Field-Pvt.	Under 132KV Line	Pam Gaon	
4			Single Pole	4°7'682"	50	0	25.987120	92.924530	Paddy Field-Pvt.		Pam Gaon	
5			Single Pole	1°71'29"	50	0	25.986670	92.924460	Paddy Field-Pvt.		Pam Gaon	
6			Single Pole	2°71'59"	50	0	25.986227	92.924376	Paddy Field-Pvt.		Pam Gaon	
7			Double Pole	1°06'20"	45	0	25.985785	92.924316	Paddy Field-Pvt.	Over 33KV Line	Pam Gaon	SP-76 Pole Required Guarding Required
8			Double Pole	0°48'72"	50	0	25.985341	92.924265	Paddy Field-Pvt.		Pam Gaon	SP-76 Pole Required
9			Single Pole	0°02'85"	50	0	25.984899	92.924210	Paddy Field-Pvt.		Pam Gaon	
10			Single Pole	0°67'57"	50	0	25.984455	92.924155	Paddy Field-Pvt.		Pam Gaon	
11			Single Pole	0°39'96"	49	0	25.984012	92.924106	Paddy Field-Pvt.		Pam Gaon	
12			Single Pole	2°04'80"	50	0	25.983573	92.924054	Paddy Field-Pvt.		Pam Gaon	
13			Single Pole	2°51'40"	50	0	25.983126	92.923983	Paddy Field-Pvt.		Pam Gaon	
14			Single Pole	4°94'86"	50	0	25.982681	92.923890	Paddy Field-Pvt.		Pam Gaon	
15	AP-2		Double Pole	42°87'06"	45	0	25.982230	92.923840	Paddy Field-Pvt.	Under 33KV Line & Kachha Road-3m	Pam Gaon	Guarding Required
16	AP-3		Double Pole	27°88'52"	44	0	25.981910	92.924110	Paddy Field-Pvt.		Pam Gaon	Guarding Required
17	AP-4		Double Pole	21°96'01"	50	0	25.981520	92.924181	Paddy Field-Pvt.	Bitumin road-5m	Pam Gaon	Guarding Required
18			Single Pole	0°25'50"	50	0	25.981084	92.924072	Paddy Field-Pvt.		Pam Gaon	
19			Single Pole	0°14'10"	50	0	25.980651	92.923966	Paddy Field-Pvt.		Pam Gaon	
20			Single Pole	0°53'68"	50	0	25.980217	92.923861	Paddy Field-Pvt.		Pam Gaon	
21			Single Pole	1°28'54"	50	0	25.979782	92.923751	Paddy Field-Pvt.		Pam Gaon	
22			Single Pole	1°75'68"	50	0	25.979341	92.923651	Paddy Field-Pvt.		Pam Gaon	
23			Single Pole	1°59'44"	50	0	25.978897	92.923566	Paddy Field-Pvt.		Pam Gaon	
24			Double Pole	2°87'44"	50	0	25.978454	92.923467	Paddy Field-Pvt.	Nala-3m & Kachha road-3m	Pam Gaon	
25	AP-5		Four Pole	60°27'31"	50	0	25.977990	92.923390	Paddy Field-Pvt.		Pam Gaon	

POLE SCHEDULE
33KV S/C SHAKARDEO NAGAR TO MAILO LINE
CONTRACTOR: NECCON POWER & INFRA LIMITED

CLIENT: POWER GRID CORPORATION OF INDIA LIMITED
LOA Ref.No: I.CC-CS/94-NER/REW-3079/I/G10/CA-I/7026 -Supply
2.CC-CS/94-NER/REW-3079/I/G10/CA-II/7027-Service

PACKAGE:ASM- ASM-DMS-01

SL. No.	Angle Point	Loc. No	Pole Type	Angle of Deviation	Span Length (m)	Cumm. Span (m)	Co-Ordinates		Description of Land	Crossing Details	Village Name	Remarks
							Latitude	Longitude				
26		Loc-5/1	Single Pole	0°29'39"	50	1237	25.977720	92.923810	Paddy Field-Pvt.	Pam Gaon		
27		Loc-5/2	Single Pole	0°48'58"	50	1287	25.977440	92.924240	Paddy Field-Pvt.	Pam Gaon		
28		Loc-5/3	Single Pole	0°20'40"	50	1337	25.97180	92.924670	Paddy Field-Pvt.	Pam Gaon		
29		Loc-5/4	Double Pole	59°27'15"	50	1387	25.976900	92.925050	Paddy Field-Pvt.	Pam Gaon		
30		Loc-5/4_1	Double Pole	0°08'42"	45	1437	25.976437	92.925098	Paddy Field-Pvt.	Pam Gaon	Guarding Required	
31		Loc-5/5	Double Pole	0°49'04"	48	1482	25.976031	92.925139	Paddy Field-Pvt.	Pam Gaon	Over 11KV Line	
32		Loc-5/6	Single Pole	0°29'61"	50	1530	25.975580	92.925190	Paddy Field-Pvt.	Pam Gaon		
33		Loc-5/7	Single Pole	0°08'42"	48	1580	25.975139	92.925231	Paddy Field-Pvt.	Pam Gaon		
34		Loc-5/8	Single Pole	0°16'52"	50	1628	25.974711	92.925273	Paddy Field-Pvt.	Pam Gaon		
35	AP-6	AP-6	Double Pole	6°56'54"	45	1678	25.974447	92.925471	Paddy Field-Pvt.	Pam Gaon	Guarding Required	
36		Loc-6/1	Double Pole	7°90'85"	50	1723	25.974066	92.925637	Paddy Field-Pvt.	Pam Gaon	Bitumin road-3m	
37		Loc-6/2	Single Pole	0°17'10"	50	1773	25.973631	92.925753	Paddy Field-Pvt.	Pam Gaon		
38		Loc-6/3	Single Pole	0°46'59"	50	1823	25.973194	92.925868	Paddy Field-Pvt.	Pam Gaon		
39		Loc-6/4	Single Pole	0°38'38"	50	1873	25.972754	92.925988	Paddy Field-Pvt.	Pam Gaon		
40		Loc-6/5	Single Pole	0°20'09"	50	1923	25.972316	92.926104	Paddy Field-Pvt.	Pam Gaon		
41		Loc-6/6	Single Pole	0°08'20"	50	1973	25.971881	92.926221	Paddy Field-Pvt.	Pam Gaon		
42		Loc-6/7	Single Pole	0°08'24"	50	2023	25.971447	92.926337	Paddy Field-Pvt.	Pam Gaon		
43		Loc-6/8	Single Pole	0°19'46"	50	2073	25.971014	92.926452	Paddy Field-Pvt.	Pam Gaon		
44		Loc-6/9	Single Pole	0°06'02"	50	2123	25.970580	92.926569	Paddy Field-Pvt.	Pam Gaon		
45		Loc-6/10	Single Pole	0°31'14"	50	2173	25.970144	92.926686	Paddy Field-Pvt.	Pam Gaon		
46		Loc-6/11	Single Pole	0°51'42"	50	2223	25.969705	92.926801	Paddy Field-Pvt.	Pam Gaon		
47		Loc-6/12	Double Pole	3°75'48"	50	2273	25.969272	92.926919	Paddy Field-Pvt.	Am Pukhuri		
48		Loc-6/13	Single Pole	1°20'61"	50	2323	25.968842	92.927070	Paddy Field-Pvt.	Am Pukhuri		
49		Loc-6/14	Single Pole	1°06'88"	50	2373	25.968412	92.927210	Paddy Field-Pvt.	Am Pukhuri		
50		Loc-6/15	Single Pole	0°17'93"	50	2423	25.967987	92.927358	Paddy Field-Pvt.	Am Pukhuri		
51		Loc-6/16	Single Pole	0°04'85"	50	2473	25.967566	92.927503	Paddy Field-Pvt.	Am Pukhuri		

POLE SCHEDULE
33KV S/C SHAKARDEO NAGAR TO MAILLO LINE
CONTRACTOR: NECCON POWER & INFRA LIMITED

CLIENT: POWER GRID CORPORATION OF INDIA LIMITED
PACKAG: ASM- ASM-DMS-01

SL. No.	Angle Point	Loc. No	Pole Type	Angle of Deviation	Span Length (m)	Cumm. Span (m)	Co-Ordinates		Description of Land	Crossing Details	Village Name	Remarks
							Latitude	Longitude				
52		Loc-6/17	Single Pole	0°43'77"	50	2523	25.967135	92.927651	Paddy Field-Pvt.		Am Pukhuri	
53		Loc-6/18	Single Pole	0°58'46"	50	2573	25.966701	92.927796	Paddy Field-Pvt.		Am Pukhuri	
54		Loc-6/19	Single Pole	0°39'76"	49	2623	25.966271	92.927945	Paddy Field-Pvt.		Am Pukhuri	
55		Loc-6/20	Single Pole	0°25'41"	50	2672	25.965848	92.928088	Paddy Field-Pvt.		Am Pukhuri	
56		Loc-6/21	Single Pole	0°10'74"	49	2722	25.965420	92.928235	Paddy Field-Pvt.		Am Pukhuri	
57		Loc-6/22	Single Pole	0°33'67"	49	2771	25.964995	92.928380	Paddy Field-Pvt.		Am Pukhuri	
58		Loc-6/23	Single Pole	0°63'24"	49	2820	25.964572	92.928527	Paddy Field-Pvt.		Am Pukhuri	
59		Loc-6/24	Double Pole	3°45'09"	50	2869	25.964149	92.928669	Paddy Field-Pvt.		Am Pukhuri	
60		Loc-6/25	Single Pole	0°36'39"	50	2919	25.963724	92.928843	Paddy Field-Pvt.		Am Pukhuri	
61		Loc-6/26	Single Pole	0°21'70"	50	2969	25.963298	92.929014	Paddy Field-Pvt.		Am Pukhuri	
62		Loc-6/27	Single Pole	0°06'43"	50	3019	25.962877	92.929185	Paddy Field-Pvt.		Am Pukhuri	
63		Loc-6/28	Single Pole	0°06'46"	50	3069	25.962457	92.929355	Paddy Field-Pvt.		Am Pukhuri	
64		Loc-6/29	Single Pole	0°21'70"	50	3119	25.962038	92.929524	Paddy Field-Pvt.		Am Pukhuri	
65		Loc-6/30	Single Pole	0°04'41"	50	3169	25.961619	92.929695	Paddy Field-Pvt.		Am Pukhuri	
66		Loc-6/31	Single Pole	0°13'13"	50	3219	25.961199	92.929866	Paddy Field-Pvt.		Am Pukhuri	
67		Loc-6/32	Single Pole	0°06'70"	50	3269	25.960776	92.930037	Paddy Field-Pvt.		Am Pukhuri	
68		Loc-6/33	Single Pole	0°28'03"	50	3319	25.960357	92.930207	Paddy Field-Pvt.		Am Pukhuri	
69		Loc-6/34	Single Pole	0°41'31"	50	3369	25.959937	92.930380	Paddy Field-Pvt.		Am Pukhuri	
70		Loc-6/35	Single Pole	0°00'15"	50	3419	25.959510	92.930552	Paddy Field-Pvt.		Am Pukhuri	
71		Loc-6/36	Single Pole	0°08'73"	21	3469	25.959088	92.930722	Paddy Field-Pvt.		Am Pukhuri	
72	AP-7	AP-7	Double Pole	29°40'19"	20	3490	25.958920	92.930790	Paddy Field-Pvt.	Over Bitumin road-3m & 11kv Line	Am Pukhuri	SP-76 Pole Required Guarding Required
73	AP-8	AP-8	Double Pole	29°40'20"	50	3510	25.958767	92.930884	Paddy Field-Pvt.		Am Pukhuri	SP-76 Pole Required
74		Loc-8/1	Single Pole	90°09'05"	20	3560	25.958706	92.931173	Paddy Field-Pvt.		Am Pukhuri	
75		Loc-8/1_1	Single Pole	0°21'97"	40	3580	25.958516	92.931144	Paddy Field-Pvt.		Am Pukhuri	
76		Loc-8/1_2	Single Pole	0°21'97"	40	3620	25.958127	92.931093	Paddy Field-Pvt.		Am Pukhuri	
77		Loc-8/2	Double Pole	2°59'08"	50	3660	25.957700	92.931050	Paddy Field-Pvt.		Am Pukhuri	

POLE SCHEDULE
33KV S/C SHAKARDEO NAGAR TO MAILLO LINE
CLIENT: POWER GRID CORPORATION OF INDIA LIMITED
CONTRACTOR: NECCON POWER & INFRA LIMITED

PACKAGE:ASM- ASM-DMS-01
LOA Ref.No: I.CC-CS/94-NER/REW-30791/G10/CA-I/7036 -Supply
2.CC-CS/94-NER/REW-30791/G10/CA-II/7027-Service

SL. No.	Angle Point	Loc. No	Pole Type	Angle of Deviation	Span Length (m)	Cumm. Span (m)	Co-Ordinates		Description of Land	Crossing Details	Village Name	Remarks
							Latitude	Longitude				
78		Loc-8/3	Single Pole	0°22'04"	50	3710	25.957270	92.931190	Paddy Field-Pvt.	Am Pukhuri		
79		Loc-8/4	Single Pole	0°32'97"	50	3760	25.956840	92.931332	Paddy Field-Pvt.	Am Pukhuri		
80		Loc-8/5	Single Pole	0°21'97"	50	3810	25.956410	92.931477	Paddy Field-Pvt.	Am Pukhuri		
81		Loc-8/6	Single Pole	0°22'10"	50	3860	25.955980	92.931620	Paddy Field-Pvt.	Am Pukhuri		
82		Loc-8/7	Single Pole	0°11'16"	50	3910	25.955553	92.931764	Paddy Field-Pvt.	Am Pukhuri		
83		Loc-8/8	Single Pole	0°47'57"	50	3960	25.955120	92.931909	Paddy Field-Pvt.	Am Pukhuri		
84		Loc-8/9	Double Pole	0°37'14"	50	4010	25.954689	92.932049	Paddy Field-Pvt.	Am Pukhuri		
85		Loc-8/10	Single Pole	1°03'18"	50	4060	25.954260	92.932185	Paddy Field-Pvt.	Am Pukhuri		
86		Loc-8/11	Single Pole	0°33'00"	50	4110	25.953832	92.932330	Paddy Field-Pvt.	Am Pukhuri		
87		Loc-8/12	Single Pole	0°58'43"	50	4160	25.953398	92.932474	Paddy Field-Pvt.	Am Pukhuri		
88		Loc-8/13	Single Pole	0°7'667"	50	4210	25.952968	92.932622	Paddy Field-Pvt.	Am Pukhuri		
89		Loc-8/14	Single Pole	0°15'08"	50	4260	25.952535	92.932764	Paddy Field-Pvt.	Am Pukhuri		
90		Loc-8/15	Single Pole	0°9'972"	50	4310	25.952107	92.932903	Paddy Field-Pvt.	Am Pukhuri		
91		Loc-8/16	Single Pole	0°8'102"	50	4360	25.951682	92.933050	Paddy Field-Pvt.	Am Pukhuri		
92		Loc-8/17	Single Pole	2°00'95"	45	4410	25.951258	92.933204	Paddy Field-Pvt.	Am Pukhuri	SP-76 Pole Required Guarding Required	
93		Loc-8/18	Single Pole	0°01'12"	50	4455	25.950868	92.933329	Paddy Field-Pvt.	Am Pukhuri	SP-76 Pole Required	
94		Loc-8/19	Single Pole	0°32'42"	50	4505	25.950434	92.933468	Paddy Field-Pvt.	Am Pukhuri		
95		Loc-8/20	Single Pole	0°9'603"	28	4555	25.950006	92.933608	Paddy Field-Pvt.	Am Pukhuri		
96	AP-9	AP-9	Four Pole	63°8'001"	50	4583	25.949770	92.933690	Paddy Field-Pvt.	Am Pukhuri		
97		Loc-9/1	Single Pole	0°93'55"	48	4633	25.949700	92.934190	Paddy Field-Pvt.	Am Pukhuri		
98		Loc-9/2	Single Pole	1°40'70"	39	4681	25.949640	92.934670	Paddy Field-Pvt.	Am Pukhuri		
99		Loc-9/3	Double Pole	11°12'04"	29	4720	25.949600	92.935060	Paddy Field-Pvt.	Am Pukhuri		
100		Loc-9/4	Double Pole	8°20'69"	50	4749	25.949520	92.935340	Paddy Field-Pvt.	Am Pukhuri	Kachha road-3m	
101		Loc-9/5	Single Pole	2°77'45"	50	4799	25.949446	92.935836	Paddy Field-Pvt.	Am Pukhuri	Guarding Required	
102	AP-10	AP-10	Double Pole	24°66'02"	45	4849	25.949350	92.936330	Paddy Field-Pvt.	Am Pukhuri	SP-76 Pole Required Guarding Required	
103		Loc-10/1	Single Pole	4°03'44"	50	4894	25.949106	92.936692	Paddy Field-Pvt.	Am Pukhuri	Over 11KV Line	

POLE SCHEDULE
33kV S/C SHAKARDEO NAGAR TO MAILO LINE
CONTRACTOR: NECCON POWER & INFRA LIMITED

CLIENT: POWER GRID CORPORATION OF INDIA LIMITED
PACKAG: ASM- ASM-DMS-01

SL. No.	Angle Point	Loc. No	Pole Type	Angle of Deviation	Span Length (m)	Cumm. Span (m)	Co-Ordinates		Description of Land	Crossing Details	Village Name	Remarks
							Latitude	Longitude				
104		Loc-102	Single Pole	0°14'06"	50	4944	25.948863	92.937111	Paddy Field-Pvt.		Am Pukhuri	
105		Loc-103	Single Pole	0°02'50"	50	4994	25.948619	92.937534	Paddy Field-Pvt.		Am Pukhuri	
106		Loc-104	Single Pole	0°32'15"	50	5044	25.948377	92.937954	Paddy Field-Pvt.		Am Pukhuri	
107		Loc-105	Single Pole	0°12'42"	50	5094	25.948132	92.938374	Paddy Field-Pvt.		Am Pukhuri	
108		Loc-106	Single Pole	0°27'52"	50	5144	25.947887	92.938796	Paddy Field-Pvt.		Am Pukhuri	
109		Loc-107	Single Pole	0°39'94"	50	5194	25.947644	92.939219	Paddy Field-Pvt.		Am Pukhuri	
110		Loc-108	Single Pole	0°15'19"	50	5244	25.947399	92.939639	Paddy Field-Pvt.		Am Pukhuri	
111		Loc-109	Single Pole	0°06'22"	50	5294	25.947156	92.940058	Paddy Field-Pvt.		Am Pukhuri	
112		Loc-1010	Single Pole	0°13'45"	50	5344	25.946913	92.940478	Paddy Field-Pvt.		Am Pukhuri	
113		Loc-1011	Single Pole	0°08'94"	50	5394	25.946667	92.940901	Paddy Field-Pvt.		Am Pukhuri	
114		Loc-1012	Single Pole	0°42'98"	50	5444	25.946423	92.941322	Paddy Field-Pvt.		Am Pukhuri	
115	AP-11	AP-11	Double Pole	10°35'53"	50	5494	25.946183	92.941743	Paddy Field-Pvt.		Am Pukhuri	
116		Loc-111	Single Pole	0°42'25"	50	5544	25.945879	92.942109	Paddy Field-Pvt.		Am Pukhuri	
117		Loc-112	Single Pole	0°15'71"	50	5594	25.945573	92.942472	Paddy Field-Pvt.		Am Pukhuri	
118		Loc-113	Single Pole	1°18'74"	50	5644	25.945267	92.942837	Paddy Field-Pvt.		Am Pukhuri	
119		Loc-114	Single Pole	0°42'33"	50	5694	25.944963	92.943202	Paddy Field-Pvt.		Am Pukhuri	
120		Loc-115	Single Pole	0°18'75"	50	5744	25.944657	92.943564	Paddy Field-Pvt.		Am Pukhuri	
121		Loc-116	Single Pole	0°23'58"	50	5794	25.944353	92.943926	Paddy Field-Pvt.		Am Pukhuri	
122		Loc-117	Single Pole	0°01'57"	50	5844	25.944049	92.944291	Paddy Field-Pvt.		Am Pukhuri	
123		Loc-118	Single Pole	0°18'67"	50	5894	25.943744	92.944657	Paddy Field-Pvt.		Am Pukhuri	
124	AP-12	AP-12	Four Pole	90°30'00"	50	5944	25.943437	92.945023	Paddy Field-Pvt.		Pachim Bhaluk Mari	
125		Loc-121	Single Pole	0°86'14"	50	5994	25.943149	92.944637	Paddy Field-Pvt.		Pachim Bhaluk Mari	
126		Loc-122	Single Pole	0°95'93"	50	6044	25.942859	92.944260	Paddy Field-Pvt.		Pachim Bhaluk Mari	
127		Loc-123	Single Pole	0°56'67"	49	6094	25.942572	92.943874	Paddy Field-Pvt.		Pachim Bhaluk Mari	
128		Loc-124	Single Pole	0°15'08"	36	6143	25.942286	92.943497	Paddy Field-Pvt.		Pachim Bhaluk Mari	

POLE SCHEDULE
33kV S/C SHAKARDEO NAGAR TO MAILLO LINE
CLIENT: POWER GRID CORPORATION OF INDIA LIMITED
CONTRACTOR: NECCON POWER & INFRA LIMITED

PACKAGE: ASM- ASM-DMS-01

LOA Ref.No: I.CC-CS/94-NER/REW-30791/G10/CA-I/7036-Supply
2.CC-CS/94-NER/REW-30791/G10/CA-II/7027-Services

SL. No.	Angle Point	Loc. No	Pole Type	Angle of Deviation	Span Length (m)	Cumm. Span (m)	Co-Ordinates		Description of Land	Crossing Details	Village Name	Remarks
							Latitude	Longitude				
129	AP-13	AP-13	Double Pole	44°25'43"	49	6179	25.942080	92.943224	Paddy Field-Pvt.		Pachim Bhaluk Mari	
130		Loc-13/1	Single Pole	8°48'78"		6228	25.941642	92.943175	Paddy Field-Pvt.		Pachim Bhaluk Mari	
131	AP-14	AP-14	Double Pole	40°38'39"	44	0	25.942255	92.943064	Paddy Field-Pvt.	Over L.T Line & Bitummm road-5m	Pachim Bhaluk Mari	Guarding Required
132		Loc-14/1	Single Pole	0°18'97"	50	0	25.940996	92.942655	Paddy Field-Pvt.		Pachim Bhaluk Mari	
133		Loc-14/2	Single Pole	0°22'81"	49	0	25.940739	92.942252	Paddy Field-Pvt.		Pachim Bhaluk Mari	
134		Loc-14/3	Single Pole	0°88'08"	50	0	25.940481	92.941844	Paddy Field-Pvt.		Pachim Bhaluk Mari	
135		Loc-14/4	Single Pole	0°36'36"	49	0	25.940227	92.941441	Paddy Field-Pvt.		Pachim Bhaluk Mari	
136		Loc-14/5	Single Pole	0°09'48"	50	0	25.939967	92.941034	Paddy Field-Pvt.		Pachim Bhaluk Mari	
137		Loc-14/6	Single Pole	0°31'18"	50	0	25.939706	92.940624	Paddy Field-Pvt.		Pachim Bhaluk Mari	
138		Loc-14/7	Single Pole	0°38'89"	50	0	25.939448	92.940214	Paddy Field-Pvt.		Pachim Bhaluk Mari	
139		Loc-14/8	Single Pole	0°29'57"	49	0	25.939192	92.939813	Paddy Field-Pvt.		Pachim Bhaluk Mari	
140		Loc-14/9	Single Pole	0°32'20"	50	0	25.938935	92.939406	Paddy Field-Pvt.		Pachim Bhaluk Mari	
141		Loc-14/10	Single Pole	0°62'54"	50	0	25.938673	92.938996	Paddy Field-Pvt.		Pachim Bhaluk Mari	
142	AP-15	AP-15	Double Pole	18°09'17"	49	0	25.938427	92.938602	Paddy Field-Pvt.		Pachim Bhaluk Mari	
143		Loc-15/1	Single Pole	0°01'44"	50	0	25.938066	92.938298	Paddy Field-Pvt.		Pachim Bhaluk Mari	
144		Loc-15/2	Single Pole	0°12'55"	50	0	25.937706	92.937995	Paddy Field-Pvt.		Pachim Bhaluk Mari	
145	AP-14	Loc-15/3	Single Pole	0°38'43"	50	0	25.937350	92.937694	Paddy Field-Pvt.		Pachim Bhaluk Mari	
146		Loc-15/4	Single Pole	0°47'34"	50	0	25.936989	92.937393	Paddy Field-Pvt.		Pachim Bhaluk Mari	
147		Loc-15/5	Double Pole	0°44'78"	41	0	25.936620	92.937080	Paddy Field-Pvt.	Rail Line Crossing	Pachim Bhaluk Mari	
148	AP-16	AP-16	Double Pole	19°16'33"	46	0	25.936330	92.936830	Paddy Field-Pvt.		Pachim Bhaluk Mari	
149		Loc-16/1	Single Pole	3°95'13"	36	0	25.935935	92.936682	Paddy Field-Pvt.		Pachim Bhaluk Mari	
150		Loc-16/2	Single Pole	15°08'55"	36	0	25.935643	92.936597	Paddy Field-Pvt.		Pachim Bhaluk Mari	
151		Loc-16/3	Single Pole	1°31'73"	38	0	25.935374	92.936426	Paddy Field-Pvt.		Pachim Bhaluk Mari	
152		Loc-16/4	Single Pole	4°32'23"	33	0	25.935080	92.936229	Paddy Field-Pvt.		Pachim Bhaluk Mari	
153	AP-17	AP-17	Four Pole	83°21'43"	50	0	25.934840	92.936040	Along the Road-Pvt.		Pachim Bhaluk Mari	

POLE SCHEDULE												
33KV S/C SHAKARDEO NAGAR TOMAILO LINE												
CONTRACTOR: NECCON POWER & INFRA LIMITED												
PACKAGE: ASM- ASM-DMS-01												
CLIENT: POWER GRID CORPORATION OF INDIA LIMITED												
LOA Ref.No: I.CC-CS/94-NER/REW-30791/G10/CA-I/7036-Supply												
2.CC-CS/94-NER/REW-30791/G10/CA-II/7027-Services												
SL. No.	Angle Point	Loc. No	Pole Type	Angle of Deviation	Span Length (m)	Cumm. Span (m)	Co-Ordinates		Description of Land	Crossing Details	Village Name	Remarks
							Latitude	Longitude				
154		Loc-171	Single Pole	4°33'97"	49	7348	25.934537	92.936413	Along the Road-Pvt.		Pachim Bhaluk Mari	
155		Loc-172	Single Pole	3°75'13"	49	7397	25.934213	92.936755	Along the Road-Pvt.		Pachim Bhaluk Mari	
156		Loc-173	Single Pole	4°51'54"	49	7446	25.933866	92.937076	Along the Road-Pvt.		Pachim Bhaluk Mari	
157		Loc-174	Single Pole	2°90'73"	50	7495	25.933545	92.937424	Along the Road-Pvt.		Pachim Bhaluk Mari	
158		Loc-175	Single Pole	10°61'88"	49	7545	25.933240	92.937790	Along the Road-Pvt.		Pachim Bhaluk Mari	
159		Loc-176	Single Pole	7°91'47"	50	7594	25.932886	92.938079	Along the Road-Pvt.		Pachim Bhaluk Mari	
160		Loc-177	Single Pole	10°30'80"	49	7644	25.932488	92.938318	Along the Road-Pvt.		Pachim Bhaluk Mari	
161		Loc-178	Single Pole	1°14'78"	50	7693	25.932142	92.938626	Along the Road-Pvt.		Pachim Bhaluk Mari	
162		Loc-179	Double Pole	3°77'12"	50	7743	25.931798	92.938945	Along the Road-Pvt.		Pachim Bhaluk Mari	
163		Loc-1710	Single Pole	4°00'15"	49	7793	25.931475	92.939287	Along the Road-Pvt.		Pachim Bhaluk Mari	
164		Loc-1711	Single Pole	0°06'71"	49	7842	25.931126	92.939608	Along the Road-Pvt.		Pachim Bhaluk Mari	
165		Loc-1712	Single Pole	8°45'16"	50	7892	25.930780	92.939927	Along the Road-Pvt.		Pachim Bhaluk Mari	
166		Loc-1713	Single Pole	0°60'10"	49	7941	25.930403	92.940181	Along the Road-Pvt.		Pachim Bhaluk Mari	
167		Loc-1714	Single Pole	3°99'70"	49	7990	25.930023	92.940431	Along the Road-Pvt.		Pachim Bhaluk Mari	
168		Loc-1715	Single Pole	1°08'63"	48	8039	25.929661	92.940708	Along the Road-Pvt.		Pachim Bhaluk Mari	
169		Loc-1716	Single Pole	0°34'15"	34	8087	25.929314	92.940986	Along the Road-Pvt.		Pachim Bhaluk Mari	
170	AP-18	AP-18	Double Pole	15°28'32"	35	8121	25.929068	92.941185	Along the Road-Pvt.	Over 11KV Line & Bitumin road-5m	Pachim Bhaluk Mari	Guarding Required
171	AP-19	AP-19	Four Pole	55°89'02"		8156	25.928870	92.941460	Paddy Field-Pvt.		Pachim Bhaluk Mari	SP-76 Pole Required(Composite Pole)
172		Loc-191	Single Pole	5°00'10"	50	8206	25.928420	92.941420	Paddy Field-Pvt.		Pachim Bhaluk Mari	
173		Loc-191_I	Single Pole	5°00'10"	30	8236	25.928123	92.941364	Paddy Field-Pvt.		Pachim Bhaluk Mari	
174	AP-20	AP-20	Single Pole	60°45'04"	20	8256	25.927940	92.941330	Paddy Field-Pvt.		Pachim Bhaluk Mari	
175		Loc-201_I	Single Pole	1°42'87"	20	8276	25.927867	92.941148	Paddy Field-Pvt.		Pachim Bhaluk Mari	
176		Loc-201	Single Pole	1°42'87"	30	8306	25.927757	92.940873	Paddy Field-Pvt.		Pachim Bhaluk Mari	
177		Loc-202	Single Pole	0°62'62"	50	8356	25.927565	92.940424	Paddy Field-Pvt.		Pachim Bhaluk Mari	
178		Loc-203	Single Pole	0°84'03"	50	8406	25.927368	92.939976	Paddy Field-Pvt.		Pachim Bhaluk Mari	

POLE SCHEDULE												
33KV S/C SHAKARDEO NAGAR TO MAILLO LINE												
CONTRACTOR: NECCON POWER & INFRA LIMITED												
CLIENT: POWER GRID CORPORATION OF INDIA LIMITED												
PACKAGE: ASM- ASM-DMS-01												
LOA Ref.No: I.CC-CS/94-NER/REW-30791/G10/CA-I/7036-Supply												
2.CC-CS/94-NER/REW-30791/G10/CA-II/7027-Services												
SL. No.	Angle Point	Loc. No	Pole Type	Angle of Deviation	Span Length (m)	Cumm. Span (m)	Co-Ordinates		Description of Land	Crossing Details	Village Name	Remarks
							Latitude	Longitude				
179		Loc-20/4	Single Pole	1°53'38"	50	8456	25.9271777	92.939525	Paddy Field-Pvt.		Pachim Bhaluk Mari	
180		Loc-20/5	Single Pole	0°28'51"	50	8506	25.926996	92.939066	Paddy Field-Pvt.		Pachim Bhaluk Mari	
181		Loc-20/6	Single Pole	1°54'47"	50	8556	25.926819	92.938611	Paddy Field-Pvt.		Pachim Bhaluk Mari	
182		Loc-20/7	Single Pole	0°28'02"	50	8606	25.926630	92.938159	Paddy Field-Pvt.		Pachim Bhaluk Mari	
183		Loc-20/8	Double Pole	0°88'81"	50	8656	25.926439	92.937708	Paddy Field-Pvt.		Pachim Bhaluk Mari	
184		Loc-20/9	Single Pole	0°53'55"	50	8706	25.926254	92.937253	Paddy Field-Pvt.		Pachim Bhaluk Mari	
185		Loc-20/10	Single Pole	0°39'59"	50	8756	25.926065	92.936800	Paddy Field-Pvt.		Pachim Bhaluk Mari	
186		Loc-20/11	Single Pole	0°7'9'9"	50	8806	25.925879	92.936346	Paddy Field-Pvt.		Pachim Bhaluk Mari	
187		Loc-20/12	Single Pole	2°9'124"	50	8856	25.925687	92.935894	Paddy Field-Pvt.	Nala-2m	Pachim Bhaluk Mari	
188		Loc-20/13	Single Pole	0°45'75"	50	8906	25.925516	92.935432	Paddy Field-Pvt.		Pachim Bhaluk Mari	
189		Loc-20/14	Single Pole	3°87'00"	49	8956	25.925343	92.934975	Paddy Field-Pvt.		Pachim Bhaluk Mari	
190		Loc-20/15	Single Pole	2°48'84"	49	9005	25.925144	92.934535	Paddy Field-Pvt.		Pachim Bhaluk Mari	
191		Loc-20/16	Single Pole	0°04'14"	43	9054	25.924929	92.934107	Paddy Field-Pvt.		Pachim Bhaluk Mari	
192	AP-21	AP-21	Four Pole	60°54'53"	43	9097	25.924760	92.933770	Paddy Field-Pvt.		Pachim Bhaluk Mari	
193		Loc-21/1	Single Pole	0°40'02"	49	9140	25.924371	92.933752	Paddy Field-Pvt.		Pachim Bhaluk Mari	
194		Loc-21/2	Single Pole	0°14'02"	37	9189	25.923927	92.933728	Paddy Field-Pvt.		Pachim Bhaluk Mari	
195		Loc-21/3	Single Pole	0°28'69"	50	9226	25.923610	92.933710	Paddy Field-Pvt.		Pachim Bhaluk Mari	
196		Loc-21/4	Single Pole	1°63'24"	15	9276	25.923145	92.933681	Paddy Field-Pvt.	Pond, Over LT Line & Kachhia road-5m	Dablong Gaon	Guarding Required
197	AP-22	AP-22	Double Pole	16°05'17"	50	9291	25.923007	92.933668	Paddy Field-Pvt.		Dablong Gaon	
198		Loc-22/1	Double Pole	2°85'09"	45	9341	25.922590	92.933491	Paddy Field-Pvt.		Dablong Gaon	
199		Loc-22/2	Double Pole	5°54'13"	49	9386	25.922209	92.933353	Paddy Field-Pvt.	Over 11KV Line	Dablong Gaon	Guarding Required
200		Loc-22/3	Single Pole	1°98'43"	36	9435	25.921775	92.933246	Paddy Field-Pvt.		Dablong Gaon	
201		Loc-22/4	Single Pole	15°7'063"	36	9471	25.921500	92.933167	Paddy Field-Pvt.		Dablong Gaon	
202		Loc-22/5	Single Pole	8°63'71"	50	9507	25.921162	92.933175	Paddy Field-Pvt.		Dablong Gaon	
203		Loc-22/6	Single Pole	0°9'791"	49	9557	25.920722	92.933260	Paddy Field-Pvt.		Dablong Gaon	
204		Loc-22/7	Single Pole	0°90'96"	50	9606	25.920285	92.933353	Paddy Field-Pvt.		Dablong Gaon	
205		Loc-22/8	Single Pole	0°20'048"	50	9656	25.919843	92.933439	Paddy Field-Pvt.		Dablong Gaon	
206		Loc-22/9	Single Pole	2°13'59"	49	9706	25.919402	92.933523	Paddy Field-Pvt.		Dablong Gaon	

POLE SCHEDULE												
33KV S/C SHAKARDEO NAGAR TO MAILO LINE												
CONTRACTOR: NECCON POWER & INFRA LIMITED												
PACKAGING: ASM- ASM-DMS-01												
CLIENT: POWER GRID CORPORATION OF INDIA LIMITED												
LOA Ref.No: I.CC-CS/94-NER/REW-30791/G10/CA-I/7026 -Supply												
2.CC-CS/94-NER/REW-30791/G10/CA-II/7027-Service												
SL. No.	Angle Point	Loc. No	Pole Type	Angle of Deviation	Span Length (m)	Cumm. Span (m)	Co-Ordinates		Description of Land	Crossing Details	Village Name	Remarks
							Latitude	Longitude				
207		Loc-22/10	Single Pole	4°9'45.2"	49	9755	25.918963	92.933588	Paddy Field-Pvt.		Dablong Gaon	
208		Loc-22/11	Single Pole	1°19'08"	50	9804	25.918530	92.933695	Paddy Field-Pvt.		Dablong Gaon	
209		Loc-22/12	Single Pole	2°11'75"	50	9854	25.918086	92.933794	Paddy Field-Pvt.		Dablong Gaon	
210		Loc-22/13	Single Pole	2°64'33"	49	9904	25.917650	92.933910	Paddy Field-Pvt.		Dablong Gaon	
211	AP-23	AP-23	Double Pole	24°06'84"	45	9953	25.917220	92.934048	Paddy Field-Pvt.	Over LT Line & 11KV Line	Dablong Gaon	SP-76 Pole Required Guarding Required
212		Loc-23/1	Double Pole	11°59'50"	50	9998	25.916828	92.933987	Paddy Field-Pvt.		Dablong Gaon	SP-76 Pole Required
213		Loc-23/2	Single Pole	3°04'39"	50	10048	25.916374	92.934019	Paddy Field-Pvt.		Dablong Gaon	
214		Loc-23/3	Single Pole	9°23'79"	50	10098	25.915928	92.934077	Paddy Field-Pvt.		Dablong Gaon	
215		Loc-23/4	Single Pole	4°01'43"	39	10148	25.915502	92.934212	Paddy Field-Pvt.		Dablong Gaon	
216		Loc-23/5	Single Pole	11°59'34"	39	10187	25.915167	92.934347	Paddy Field-Pvt.		Dablong Gaon	
217		Loc-23/6	Single Pole	5°51'90"	50	10226	25.914858	92.934548	Paddy Field-Pvt.		Dablong Gaon	
218		Loc-23/7	Single Pole	0°26'10"	50	10276	25.914496	92.934838	Paddy Field-Pvt.		Dablong Gaon	
219		Loc-23/8	Single Pole	0°20'44"	50	10326	25.914130	92.935130	Paddy Field-Pvt.		Dablong Gaon	
220		Loc-23/9	Single Pole	0°05'61"	50	10376	25.913767	92.935421	Paddy Field-Pvt.		Dablong Gaon	
221		Loc-23/10	Single Pole	0°35'29"	50	10426	25.913402	92.935713	Paddy Field-Pvt.		Dablong Gaon	
222		Loc-23/11	Single Pole	0°18'76"	45	10476	25.913038	92.936008	Paddy Field-Pvt.	Over 11KV Line	Dablong Gaon	SP-76 Pole Required Guarding Required
223		Loc-23/12	Single Pole	0°18'39"	50	10521	25.912710	92.936272	Paddy Field-Pvt.		Dablong Gaon	SP-76 Pole Required
224		Loc-23/13	Single Pole	0°31'44"	50	10571	25.912346	92.936563	Paddy Field-Pvt.		Dablong Gaon	
225		Loc-23/14	Single Pole	0°40'79"	50	10621	25.911980	92.936859	Paddy Field-Pvt.		Dablong Gaon	
226		Loc-23/15	Single Pole	0°97'71"	37	10671	25.911616	92.937149	Paddy Field-Pvt.		Dablong Gaon	
227		Loc-23/16	Single Pole	1°72'96"	37	10708	25.911352	92.937367	Paddy Field-Pvt.		Dablong Gaon	
228	AP-24	AP-24	Double Pole	21°18'96"	45	10745	25.911090	92.937570	Paddy Field-Pvt.	Kachhia road-3m & Over 11KV Line	Dablong Gaon	Guarding Required
229	AP-25	AP-25	Double Pole	30°63'00"	50	10790	25.910860	92.937950	Paddy Field-Pvt.		Dablong Gaon	
230		Loc-25/1	Single Pole	1°25'56"	50	10840	25.910402	92.937947	Paddy Field-Pvt.		Dablong Gaon	
231		Loc-25/2	Single Pole	2°67'49"	50	10890	25.909963	92.937944	Paddy Field-Pvt.		Dablong Gaon	
232		Loc-25/3	Single Pole	1°72'96"	50	10940	25.909527	92.937942	Paddy Field-Pvt.		Dablong Gaon	
233		Loc-25/4	Single Pole	2°72'96"	50	10990	25.909085	92.937939	Paddy Field-Pvt.		Dablong Gaon	
234		Loc-25/5	Single Pole	0°18'39"	45	11040	25.908671	92.937936	Paddy Field-Pvt.	Over LT Line	Dablong Gaon	Guarding Required

POLE SCHEDULE												
33KV S/C SHAKARDEO NAGAR TO MAILLO LINE												
CONTRACTOR: NECCON POWER & INFRA LIMITED												
CLIENT: POWER GRID CORPORATION OF INDIA LIMITED												
LOA Ref.No: I.CC-CS/94-NER/REW-30791/G10/CA-I/7036 -Supply 2.CC-CS/94-NER/REW-30791/G10/CA-II/7027-Service												
SL. No.	Angle Point	Loc. No	Pole Type	Angle of Deviation	Span Length (m)	Cumm. Span (m)	Co-Ordinates		Description of Land	Crossing Details	Village Name	Remarks
							Latitude	Longitude				
235		Loc-25/6	Single Pole	1°39'30"	48	11085	25.908262	92.937934	Paddy Field-Pvt.		Dablong Gaon	
236		Loc-25/7	Double Pole	2°39'30"	20	11133	25.907929	92.937931			Dablong Gaon	
237		Loc-25/8	Single Pole	80°39'30"	20	11153	25.907710	92.937930			Dablong Gaon	
238		Loc-25/9	Single Pole	1°39'30"	50	11173	25.907807	92.938152			Dablong Gaon	
239		Loc-25/10	Single Pole	0°45'30"	48	11223	25.907995	92.938585			Dablong Gaon	
240		Loc-25/11	Single Pole	1°39'30"	50	11271	25.908190	92.939034			Dablong Gaon	
241		Loc-25/12	Single Pole	1°30'30"	48	11321	25.908392	92.939485			Dablong Gaon	
242		Loc-25/13	Single Pole	1°39'30"	20	11369	25.908591	92.939823			Dablong Gaon	
243	AP-26	AP-26	Single Pole	85°08'25"	34	11389	25.908688	92.940013	Paddy Field-Pvt.	Bitumin road-5m &Over 11KV Line	Dablong Gaon	Guarding Required
244	AP-27	AP-27	Double Pole	37°21'28"	45	11423	25.908390	92.940100	Paddy Field-Pvt.	Over 33KV Line	Sambari	SP-76 Pole Required
245		Loc-27/1	Double Pole	0°65'73"	49	11468	25.907986	92.940181	Paddy Field-Pvt.		Sanbari	Guarding Required
246		Loc-27/2	Single Pole	0°37'12"	29	11517	25.907559	92.940261	Paddy Field-Pvt.		Sanbari	
247		Loc-27/2_1	Single Pole	0°37'12"	20	11546	25.907312	92.940306	Paddy Field-Pvt.		Sanbari	
248	AP-28	AP-28	Single Pole	62°35'55"	20	11566	25.907120	92.940340	Paddy Field-Pvt.		Sanbari	
249		Loc-28/1_1	Single Pole	0°12'08"	30	11586	25.907057	92.940537	Paddy Field-Pvt.		Sanbari	
250		Loc-28/1	Single Pole	0°12'08"	50	11616	25.906971	92.940809	Paddy Field-Pvt.		Sanbari	
251		Loc-28/2	Single Pole	0°08'26"	50	11666	25.906823	92.941278	Paddy Field-Pvt.		Sanbari	
252		Loc-28/3	Single Pole	0°08'26"	50	11716	25.906674	92.941748	Paddy Field-Pvt.		Sanbari	
253		Loc-28/4	Single Pole	0°03'20"	49	11766	25.906526	92.942217	Paddy Field-Pvt.		Sanbari	
254		Loc-28/5	Single Pole	0°11'50"	49	11815	25.906379	92.942682	Paddy Field-Pvt.		Sanbari	
255		Loc-28/6	Single Pole	0°08'30"	50	11864	25.906232	92.943150	Paddy Field-Pvt.		Sanbari	
256		Loc-28/7	Single Pole	0°08'30"	50	11914	25.906084	92.943619	Paddy Field-Pvt.		Sanbari	
257		Loc-28/8	Single Pole	0°03'32"	50	11964	25.905937	92.944087	Paddy Field-Pvt.	Naha-2m	Sanbari	
258		Loc-28/9	Single Pole	0°12'14"	49	12014	25.905790	92.944554	Paddy Field-Pvt.		Sanbari	
259		Loc-28/10	Single Pole	0°15'36"	50	12063	25.905642	92.945021	Paddy Field-Pvt.		Sanbari	
260		Loc-28/11	Single Pole	0°20'95"	50	12113	25.905495	92.945489	Paddy Field-Pvt.		Sanbari	
261		Loc-28/12	Single Pole	0°01'71"	49	12163	25.905345	92.945961	Paddy Field-Pvt.		Sanbari	
262	AP-29	AP-29	Four Pole	63°52'95"	50	12212	25.905198	92.946424	Paddy Field-Pvt.		Sanbari	

POLE SCHEDULE
33KV S/C SHAKARDEO NAGAR TO MAILO LINE
CONTRACTOR: NECCON POWER & INFRA LIMITED

CLIENT: POWER GRID CORPORATION OF INDIA LIMITED
LOA Ref.No: I.CC-CS/94-NER/REW-30791/G10/CA-I/7036 -Supply
2.CC-CS/94-NER/REW-30791/G10/CA-II/7027-Service

PACKAGE:ASM- ASM-DMS-01

SL. No.	Angle Point	Loc. No	Pole Type	Angle of Deviation	Span Length (m)	Cumm. Span (m)	Co-Ordinates		Description of Land	Crossing Details	Village Name	Remarks
							Latitude	Longitude				
263		Loc-29/1	Single Pole	0°14'60"	49	12262	25.904753	92.946485	Paddy Field-Pvt.	Sambari		
264		Loc-29/2	Single Pole	0°29'07"	50	12311	25.904310	92.946547	Paddy Field-Pvt.	Sambari		
265		Loc-29/3	Single Pole	0°47'04"	49	12361	25.903863	92.946607	Paddy Field-Pvt.	Sambari		
266		Loc-29/4	Single Pole	0°04'89"	50	12410	25.903417	92.946671	Paddy Field-Pvt.	Sambari		
267		Loc-29/5	Single Pole	0°16'27"	50	12460	25.902975	92.946734	Paddy Field-Pvt.	Sambari		
268		Loc-29/6	Single Pole	0°21'27"	50	12510	25.902530	92.946796	Paddy Field-Pvt.	Sambari		
269		Loc-29/7	Single Pole	0°06'13"	49	12560	25.902086	92.946856	Paddy Field-Pvt.	Sambari		
270		Loc-29/8	Single Pole	0°45'52"	45	12609	25.901638	92.946916	Paddy Field-Pvt.	Sambari		
271		Loc-29/9	Double Pole	0°14'82"	45	12654	25.901232	92.946974	Paddy Field-Pvt.	Sambari	Guarding Required	
272	AP-30	AP-30	Double Pole	28°36'23"	50	12699	25.900841	92.947031	Paddy Field-Pvt.	Sambari	Over LT Line	
273		Loc-30/1	Single Pole	0°24'33"	49	12749	25.900476	92.947324	Paddy Field-Pvt.	Singjuri		
274		Loc-30/2	Single Pole	0°11'29"	49	12798	25.900114	92.947612	Paddy Field-Pvt.	Singjuri		
275		Loc-30/3	Single Pole	0°14'86"	50	12847	25.899751	92.947902	Paddy Field-Pvt.	Singjuri		
276		Loc-30/4	Single Pole	0°35'58"	50	12897	25.899385	92.948196	Paddy Field-Pvt.	Singjuri		
277		Loc-30/5	Single Pole	0°7'667"	50	12947	25.899023	92.948483	Paddy Field-Pvt.	Singjuri		
278		Loc-30/6	Single Pole	0°84'58"	45	12997	25.898687	92.948757	Paddy Field-Pvt.	Singjuri	SP-76 Pole Required Guarding Required	
279		Loc-30/7	Single Pole	0°36'13"	50	13042	25.898329	92.949040	Paddy Field-Pvt.	Singjuri	SP-76 Pole Required Guarding Required	
280		Loc-30/8	Double Pole	0°10'01"	44	13092	25.897967	92.949330	Paddy Field-Pvt.	Singjuri	Guarding Required	
281		Loc-30/9	Double Pole	0°17'45"	50	13136	25.897645	92.949587	Paddy Field-Pvt.	Singjuri	Kachhia road-3m & Over LT Line	
282		Loc-30/10	Single Pole	0°35'25"	49	13186	25.897279	92.949881	Paddy Field-Pvt.	Singjuri		
283		Loc-30/11	Single Pole	0°40'88"	50	13235	25.896912	92.950172	Paddy Field-Pvt.	Singjuri		
284		Loc-30/12	Single Pole	0°09'20"	49	13285	25.896548	92.950465	Paddy Field-Pvt.	Singjuri	Nala-2m	
285		Loc-30/13	Single Pole	0°09'40"	50	13334	25.896189	92.950753	Paddy Field-Pvt.	Singjuri		
286		Loc-30/14	Single Pole	0°07'60"	49	13384	25.895820	92.951048	Paddy Field-Pvt.	Singjuri		
287		Loc-30/15	Single Pole	0°16'90"	48	13433	25.895460	92.951335	Paddy Field-Pvt.	Singjuri		
288		Loc-30/16	Single Pole	0°14'99"	49	13481	25.895096	92.951627	Paddy Field-Pvt.	Singjuri		
289		Loc-30/17	Single Pole	0°14'99"	50	13530	25.894735	92.951915	Paddy Field-Pvt.	Singjuri		
290		Loc-30/18	Single Pole	0°09'32"	49	13580	25.894371	92.952207	Paddy Field-Pvt.	Singjuri		

POLE SCHEDULE												
33KV S/C SHAKARDEO NAGAR TO MAILO LINE												
CONTRACTOR: NECCON POWER & INFRA LIMITED												
PACKAGE: ASM- ASM-DMS-01												
CLIENT: POWER GRID CORPORATION OF INDIA LIMITED												
LOA Ref.No: I.CC-CS/94-NER/REW-30791/G10/CA-I/7036 -Supply												
2.CC-CS/94-NER/REW-30791/G10/CA-II/7027- Services												
SL. No.	Angle Point	Loc. No	Pole Type	Angle of Deviation	Span Length (m)	Cumm. Span (m)	Co-Ordinates		Description of Land	Crossing Details	Village Name	Remarks
							Latitude	Longitude				
291		Loc-30/19	Single Pole	0°01'87"	50	13629	25.894007	92.952498	Paddy Field-Pvt.		Singjuri	
292		Loc-30/20	Double Pole	0°01'86"	49	13679	25.893642	92.952790	Paddy Field-Pvt.		Singjuri	
293		Loc-30/21	Single Pole	0°03'72"	50	13728	25.893276	92.953083	Paddy Field-Pvt.		Singjuri	
294		Loc-30/22	Single Pole	0°07'45"	49	13778	25.892912	92.953374	Paddy Field-Pvt.		Singjuri	
295		Loc-30/23	Single Pole	0°03'68"	49	13827	25.892547	92.953665	Paddy Field-Pvt.		Singjuri	
296		Loc-30/24	Single Pole	0°05'63"	50	13877	25.892185	92.953954	Paddy Field-Pvt.		Singjuri	
297		Loc-30/25	Single Pole	1°44'65"	49	13926	25.891825	92.954242	Paddy Field-Pvt.		Singjuri	
298		Loc-30/26	Single Pole	3°11'76"	49	13975	25.891457	92.954521	Paddy Field-Pvt.		Singjuri	
299		Loc-30/27	Single Pole	1°84'08"	50	14025	25.891103	92.954822	Paddy Field-Pvt.		Singjuri	
300		Loc-30/28	Single Pole	0°07'52"	49	14074	25.890742	92.955109	Paddy Field-Pvt.		Singjuri	
301		Loc-30/29	Single Pole	0°08'95"	49	14123	25.890382	92.955396	Paddy Field-Pvt.		Singjuri	
302		Loc-30/30	Single Pole	0°55'95"	50	14173	25.890012	92.955690	Paddy Field-Pvt.		Singjuri	
303	AP-31	AP-31	Double Pole	12°95'55"	49	14222	25.889652	92.955982	Paddy Field-Pvt.		Singjuri	
304		Loc-31/1	Single Pole	0°05'04"	50	14272	25.889242	92.956177	Paddy Field-Pvt.		Singjuri	
305		Loc-31/2	Single Pole	0°00'00"	49	14321	25.888831	92.956372	Paddy Field-Pvt.		Singjuri	
306		Loc-31/3	Single Pole	0°10'60"	50	14371	25.888420	92.956567	Paddy Field-Pvt.		Singjuri	
307		Loc-31/4	Single Pole	0°11'15"	49	14421	25.888009	92.956763	Paddy Field-Pvt.		Singjuri	
308		Loc-31/5	Single Pole	0°00'00"	49	14470	25.887600	92.956957	Paddy Field-Pvt.		Singjuri	
309		Loc-31/6	Single Pole	0°21'73"	49	14519	25.887191	92.957151	Paddy Field-Pvt.		Singjuri	
310		Loc-31/7	Single Pole	0°16'66"	49	14568	25.886780	92.957348	Paddy Field-Pvt.		Singjuri	
311		Loc-31/8	Double Pole	00°05'07"	49	14617	25.886372	92.957542	Paddy Field-Pvt.		Singjuri	
312		Loc-31/9	Single Pole	0°05'62"	49	14666	25.885963	92.957736	Paddy Field-Pvt.		Singjuri	
313		Loc-31/10	Single Pole	0°01'71"	49	14715	25.885555	92.957929	Paddy Field-Pvt.		Singjuri	
314		Loc-31/11	Single Pole	0°19'18"	49	14764	25.885141	92.958125	Paddy Field-Pvt.		Singjuri	
315		Loc-31/12	Single Pole	0°58'81"	49	14813	25.884735	92.958319	Paddy Field-Pvt.		Singjuri	
316		Loc-31/13	Single Pole	1°33'40"	48	14862	25.884328	92.958508	Paddy Field-Pvt.		Singjuri	
317		Loc-31/14	Single Pole	1°29'01"	45	14910	25.883922	92.958709	Paddy Field-Pvt.	Over 11KV Line	Singjuri	Guarding Required
318		Loc-31/15	Single Pole	0°62'91"	45	14955	25.883561	92.958877	Paddy Field-Pvt.	Over 11KV Line	Singjuri	Guarding Required

POLE SCHEDULE												
33KV S/C SHAKARDEO NAGAR TO MAILLO LINE												
CLIENT: POWER GRID CORPORATION OF INDIA LIMITED												
CONTRACTOR: NECCON POWER & INFRA LIMITED												
PACKAGE: ASM- ASM-DMS-01												
LOA Ref.No: I.CC-CS/94-NER/REW-30791/G10/CA-I/7036 -Supply												
2.CC-CS/94-NER/REW-30791/G10/CA-II/7027- Services												
SL. No.	Angle Point	Loc. No	Pole Type	Angle of Deviation	Span Length (m)	Cumm. Span (m)	Co-Ordinates		Description of Land	Crossing Details	Village Name	Remarks
							Latitude	Longitude				
319		Loc-31/16	Single Pole	0°48'12"	42	15000	25.883190	92.959055	Paddy Field-Pvt.		Singjuri	
320		Loc-31/17	Single Pole	0°32'48"	20	15042	25.882838	92.959220	Paddy Field-Pvt.		Singjuri	
321	AP-32	AP-32	Double Pole	14°01'54"	50	15062	25.882670	92.959300	Paddy Field-Pvt.	Kachhia road-3m & Over LT Cable	Singjuri	Guarding Required
322		Loc-32/1	Single Pole	0°16'56"	49	15112	25.882230	92.959379	Paddy Field-Pvt.		Singjuri	
323		Loc-32/2	Single Pole	0°08'36"	49	15161	25.881787	92.959460	Paddy Field-Pvt.		Singjuri	
324		Loc-32/3	Single Pole	0°19'09"	49	15210	25.881348	92.959541	Paddy Field-Pvt.		Singjuri	
325		Loc-32/4	Single Pole	0°00'00"	49	15259	25.880905	92.959621	Paddy Field-Pvt.		Singjuri	
326		Loc-32/5	Single Pole	0°21'81"	50	15309	25.880462	92.959701	Paddy Field-Pvt.		Singjuri	
327		Loc-32/6	Single Pole	0°13'54"	49	15358	25.880024	92.959782	Paddy Field-Pvt.		Singjuri	
328		Loc-32/7	Single Pole	0°02'09"	49	15407	25.879585	92.959862	Paddy Field-Pvt.		Singjuri	
329		Loc-32/8	Single Pole	0°10'35"	49	15456	25.879147	92.959942	Paddy Field-Pvt.		Singjuri	
330		Loc-32/9	Single Pole	0°11'33"	50	15505	25.878704	92.960022	Paddy Field-Pvt.		Singjuri	
331		Loc-32/10	Single Pole	0°25'06"	49	15555	25.878261	92.960103	Paddy Field-Pvt.		Singjuri	
332		Loc-32/11	Single Pole	0°26'09"	49	15604	25.877822	92.960181	Paddy Field-Pvt.	Nala-2m	Singjuri	
333	AP-33	AP-33	Double Pole	12°75'26"	49	15653	25.877390	92.960260	Paddy Field-Pvt.		Singjuri	
334		Loc-33/1	Single Pole	0°38'32"	49	15702	25.876980	92.960445	Paddy Field-Pvt.		Singjuri	
335		Loc-33/2	Single Pole	0°33'46"	49	15751	25.876562	92.960630	Paddy Field-Pvt.		Singjuri	
336		Loc-33/3	Single Pole	0°14'46"	49	15800	25.876151	92.960815	Paddy Field-Pvt.		Singjuri	
337		Loc-33/4	Single Pole	0°12'86"	49	15849	25.875737	92.961000	Paddy Field-Pvt.		Singjuri	
338		Loc-33/5	Single Pole	0°21'23"	50	15898	25.875319	92.961188	Paddy Field-Pvt.		Singjuri	
339		Loc-33/6	Single Pole	0°21'23"	50	15948	25.874901	92.961374	Paddy Field-Pvt.		Singjuri	
340		Loc-33/7	Single Pole	0°08'54"	49	15998	25.874483	92.961562	Paddy Field-Pvt.		Singjuri	
341		Loc-33/8	Single Pole	0°20'27"	50	16047	25.874069	92.961749	Paddy Field-Pvt.		Singjuri	
342		Loc-33/9	Single Pole	0°15'41"	49	16097	25.873653	92.961935	Paddy Field-Pvt.		Singjuri	
343		Loc-33/10	Double Pole	0°44'39"	50	16146	25.873236	92.962120	Paddy Field-Pvt.		Singjuri	
344		Loc-33/11	Single Pole	0°40'83"	49	16196	25.872826	92.962306	Paddy Field-Pvt.		Singjuri	
345		Loc-33/12	Single Pole	0°22'52"	49	16245	25.872412	92.962490	Paddy Field-Pvt.		Boroly	
346		Loc-33/13	Single Pole	0°04'80"	49	16294	25.871996	92.962677	Paddy Field-Pvt.		Boroly	

POLE SCHEDULE												
33KV S/C SHAKARDEO NAGAR TO MAILLO LINE												
CONTRACTOR: NECCON POWER & INFRA LIMITED												
PACKAGE: ASM- ASM-DMS-01												
CLIENT: POWER GRID CORPORATION OF INDIA LIMITED												
LOA Ref.No: I.CC-CS/94-NER/REW-30791/G10/CA-I/7036 -Supply												
2.CC-CS/94-NER/REW-30791/G10/CA-II/7027-Service												
SL. No.	Angle Point	Loc. No	Pole Type	Angle of Deviation	Span Length (m)	Cumm. Span (m)	Co-Ordinates		Description of Land	Crossing Details	Village Name	Remarks
							Latitude	Longitude				
347		Loc-33/14	Single Pole	0°14'33"	49	16343	25.871581	92.962864	Paddy Field-Pvt.		Boroly	
348		Loc-33/15	Single Pole	0°34'49"	50	16392	25.871163	92.963051	Paddy Field-Pvt.		Boroly	
349		Loc-33/16	Single Pole	0°74'98"	49	16442	25.870749	92.963233	Paddy Field-Pvt.		Boroly	
350		Loc-33/17	Single Pole	0°64'72"	50	16491	25.870335	92.963422	Paddy Field-Pvt.		Boroly	
351		Loc-33/18	Single Pole	0°53'56"	49	16541	25.869921	92.963605	Paddy Field-Pvt.		Boroly	
352		Loc-33/19	Single Pole	0°19'22"	50	16590	25.869507	92.963793	Paddy Field-Pvt.		Boroly	
353		Loc-33/20	Single Pole	0°28'93"	50	16640	25.869089	92.963981	Paddy Field-Pvt.		Boroly	
354	AP-34	AP-34	Double Pole	12°90'11"	44	16690	25.868719	92.964145	Paddy Field-Pvt.	Kachha road-3m	Boroly	
355		Loc-34/1	Single Pole	1°70'34"	49	16734	25.868357	92.964423	Paddy Field-Pvt.		Boroly	
356		Loc-34/2	Single Pole	1°76'99"	49	16783	25.867989	92.964688	Paddy Field-Pvt.		Boroly	
357		Loc-34/3	Single Pole	0°60'27"	49	16832	25.867624	92.964969	Paddy Field-Pvt.		Boroly	
358		Loc-34/4	Single Pole	0°57'39"	50	16881	25.867251	92.965249	Paddy Field-Pvt.		Boroly	
359		Loc-34/5	Single Pole	0°57'39"	24	16931	25.866879	92.965523	Paddy Field-Pvt.		Boroly	
360		Loc-34/5.1	Single Pole	2°47'78"	20	16955	25.866720	92.965652	Paddy Field-Pvt.		Boroly	
361	AP-35	AP-35	Single Pole	76°11'90"	20	16975	25.866572	92.965771	Paddy Field-Pvt.		Boroly	
362		Loc-35/1-1	Single Pole	0°34'65"	29	16995	25.866645	92.965970	Paddy Field-Pvt.		Boroly	
363		Loc-35/1	Double Pole	0°34'65"	45	17024	25.866744	92.966241	Paddy Field-Pvt.		Boroly	SP-76 Pole Required Guarding Required
364	AP-36	AP-36	Double Pole	27°59'29"	45	17069	25.866900	92.966660	Paddy Field-Pvt.	Over 11KV Line & Kachha road-5m	Boroly	SP-76 Pole Required Guarding Required
365		Loc-36/1	Double Pole	0°10'28"	49	17114	25.866864	92.967107	Paddy Field-Pvt.	Over 11KV Line	Boroly	SP-76 Pole Required Guarding Required
366		Loc-36/2	Single Pole	1°21'31"	43	17163	25.866823	92.967606	Paddy Field-Pvt.		Boroly	
367	AP-37	AP-37	Double Pole	36°15'24"	49	17206	25.866780	92.968030	Paddy Field-Pvt.		Boroly	
368		Loc-37/1	Single Pole	0°60'72"	50	17255	25.866479	92.968394	Paddy Field-Pvt.		Boroly	
369		Loc-37/2	Single Pole	0°27'61"	49	17305	25.866169	92.968761	Paddy Field-Pvt.		Boroly	
370		Loc-37/3	Single Pole	0°01'55"	49	17354	25.865867	92.969122	Paddy Field-Pvt.		Boroly	
371		Loc-37/4	Single Pole	0°15'83"	49	17403	25.865566	92.969482	Paddy Field-Pvt.		Boroly	
372		Loc-37/5	Double Pole	0°34'75"	49	17452	25.865265	92.969844	Paddy Field-Pvt.		Boroly	
373	AP-38	AP-38	Double Pole	26°94'91"	50	17501	25.864962	92.970204	Paddy Field-Pvt.	Kachha road-4m	Boroly	Guarding Required
374		Loc-38/1	Single Pole	0°15'21"	49	17551	25.864541	92.970374	Paddy Field-Pvt.		Boroly	

POLE SCHEDULE
33kV S/C SHAKARDEO NAGAR TO MAILLO LINE
CONTRACTOR: NECCON POWER & INFRA LIMITED

CLIENT: POWER GRID CORPORATION OF INDIA LIMITED
LOA Ref.No: I.CC-CS/94-NER/REW-30791/G10/CA-I/7036 -Supply
2.CC-CS/94-NER/REW-30791/G10/CA-II/7027-Service

PACKAGE:ASM- ASM-DMS-01

SL. No.	Angle Point	Loc. No	Pole Type	Angle of Deviation	Span Length (m)	Cumm. Span (m)	Co-Ordinates		Description of Land	Crossing Details	Village Name	Remarks
							Latitude	Longitude				
375		Loc-38/2	Single Pole	0°04'40"	50	17600	25.864121	92.970545	Paddy Field-Pvt.		Boroly	
376		Loc-38/3	Single Pole	0°13'25"	50	17650	25.863700	92.970716	Paddy Field-Pvt.		Boroly	
377		Loc-38/4	Single Pole	0°30'65"	50	17700	25.862382	92.970887	Paddy Field-Pvt.		Boroly	
378		Loc-38/5	Single Pole	0°32'62"	50	17750	25.862857	92.971058	Paddy Field-Pvt.		Boroly	
379		Loc-38/6	Single Pole	0°23'95"	50	17800	25.862437	92.971230	Paddy Field-Pvt.		Boroly	
380		Loc-38/7	Single Pole	0°06'43"	50	17850	25.862014	92.971401	Paddy Field-Pvt.		Boroly	
381		Loc-38/8	Single Pole	0°30'38"	50	17900	25.861592	92.971571	Paddy Field-Pvt.		Jribasa	
382		Loc-38/9	Double Pole	0°21'38"	50	17950	25.861172	92.971743	Paddy Field-Pvt.		Jribasa	
383		Loc-38/10	Double Pole	0°07'27"	45	17995	25.860757	92.971911	Paddy Field-Pvt.	Kachhia road-3m	Jribasa	Guarding Required
384		Loc-38/11	Double Pole	0°20'61"	45	18040	25.860383	92.972063	Paddy Field-Pvt.	Over L.T Line	Jribasa	Guarding Required
385		Loc-38/12	Single Pole	0°38'60"	48	18088	25.859960	92.972233	Paddy Field-Pvt.		Jribasa	
386		Loc-38/13	Single Pole	0°29'90"	49	18137	25.859536	92.972407	Paddy Field-Pvt.		Jribasa	
387		Loc-38/14	Single Pole	0°14'83"	50	18187	25.859115	92.972577	Paddy Field-Pvt.		Jribasa	
388		Loc-38/15	Single Pole	1°40'27"	49	18236	25.858690	92.972750	Paddy Field-Pvt.		Jribasa	
389		Loc-38/16	Single Pole	0°70'43"	50	18286	25.858265	92.972910	Paddy Field-Pvt.		Jribasa	
390		Loc-38/17	Single Pole	0°22'78"	49	18335	25.857836	92.973065	Paddy Field-Pvt.		Jribasa	
391		Loc-38/18	Single Pole	0°16'13"	50	18385	25.857410	92.973221	Paddy Field-Pvt.		Jribasa	
392		Loc-38/19	Single Pole	0°04'06"	49	18434	25.856988	92.973377	Paddy Field-Pvt.		Jribasa	
393		Loc-38/20	Single Pole	0°26'96"	50	18484	25.856565	92.973533	Paddy Field-Pvt.		Jribasa	
394		Loc-38/21	Single Pole	0°36'70"	49	18533	25.856138	92.973688	Paddy Field-Pvt.		Jribasa	
395		Loc-38/22	Single Pole	0°31'72"	50	18583	25.855712	92.973846	Paddy Field-Pvt.		Jribasa	
396		Loc-38/23	Double Pole	0°31'72"	49	18632	25.855289	92.974000	Paddy Field-Pvt.	Kachhia road-3m	Jribasa	
397		Loc-38/24	Single Pole	0°31'72"	50	18682	25.854863	92.974158	Paddy Field-Pvt.		Jribasa	
398		Loc-38/25	Single Pole	0°28'90"	50	18732	25.854440	92.974312	Paddy Field-Pvt.		Jribasa	
399		Loc-38/26	Single Pole	0°05'22"	50	18782	25.854016	92.974469	Paddy Field-Pvt.		Jribasa	
400		Loc-38/27	Single Pole	0°05'73"	49	18831	25.853588	92.974627	Paddy Field-Pvt.		Jribasa	
401		Loc-38/28	Single Pole	0°15'01"	50	18881	25.853164	92.974783	Paddy Field-Pvt.		Jribasa	
402		Loc-38/29	Single Pole	0°33'97"	49	18930	25.852741	92.974940	Paddy Field-Pvt.	Nahn-2m & Kachhia road-3m	Jribasa	

POLE SCHEDULE												
33KV S/C SHAKARDEO NAGAR TO MAILO LINE												
CONTRACTOR: NECCON POWER & INFRA LIMITED												
PACKAGE: ASM- ASM-DMS-01												
CLIENT: POWER GRID CORPORATION OF INDIA LIMITED												
LOA Ref.No: I.CC-CS/94-NER/REW-30791/G10/CA-I/7036 -Supply												
2.CC-CS/94-NER/REW-30791/G10/CA-II/7027- Services												
SL No.	Angle Point	Loc. No	Pole Type	Angle of Deviation	Span Length (m)	Cumm. Span (m)	Co-Ordinates		Description of Land	Crossing Details	Village Name	Remarks
							Latitude	Longitude				
403		Loc-38/30	Single Pole	0°25'86"	49	18980	25.852315	92.975095	Paddy Field-Pvt.	Jribassa		
404		Loc-38/31	Single Pole	0°18'93"	50	19029	25.851890	92.975252	Paddy Field-Pvt.	Jribassa		
405		Loc-38/32	Single Pole	0°25'80"	49	19079	25.851463	92.975408	Paddy Field-Pvt.	Jribassa		
406		Loc-38/33	Single Pole	0°21'81"	50	19128	25.851037	92.975566	Paddy Field-Pvt.	Jribassa		
407		Loc-38/34	Double Pole	0°13'76"	49	19178	25.850611	92.975722	Paddy Field-Pvt.	Jribassa		
408		Loc-38/35	Single Pole	0°21'73"	50	19227	25.850183	92.975880	Paddy Field-Pvt.	Jribassa		
409		Loc-38/36	Single Pole	0°31'01"	49	19277	25.849755	92.976036	Paddy Field-Pvt.	Jribassa		
410		Loc-38/37	Single Pole	0°27'03"	50	19326	25.849332	92.976193	Paddy Field-Pvt.	Jribassa		
411		Loc-38/38	Single Pole	0°27'03"	49	19376	25.848905	92.976349	Paddy Field-Pvt.	Jribassa		
412		Loc-38/39	Single Pole	0°09'28"	50	19425	25.848482	92.976506	Paddy Field-Pvt.	Jribassa		
413		Loc-38/40	Single Pole	0°04'01"	49	19475	25.848054	92.976664	Paddy Field-Pvt.	Jribassa		
414		Loc-38/41	Single Pole	0°39'64"	50	19524	25.847627	92.976822	Paddy Field-Pvt.	Jribassa		
415		Loc-38/42	Single Pole	0°39'64"	49	19574	25.847201	92.976976	Paddy Field-Pvt.	Jribassa		
416		Loc-38/43	Single Pole	0°05'71"	50	19623	25.846774	92.977134	Paddy Field-Pvt.	Jribassa		
417		Loc-38/44	Single Pole	0°33'00"	49	19673	25.846351	92.977290	Paddy Field-Pvt.	Jribassa		
418		Loc-38/45	Double Pole	0°43'98"	50	19722	25.845928	92.977443	Paddy Field-Pvt.	Jribassa		
419		Loc-38/46	Double Pole	0°33'86"	45	19772	25.845505	92.977600	Paddy Field-Pvt.	Belbari	SP-76 Pole Required	
420		Loc-38/47	Double Pole	1°01'30"	22	19817	25.845123	92.977739	Paddy Field-Pvt.	Belbari	Guarding Required	
421	AP-39	AP-39	Single Pole	62°41'58"	20	19839	25.844936	92.977803	Along the Road-Pvt.	Belbari		
422		Loc-39/1_1	Single Pole	12°17'56"	38	19859	25.844873	92.978182	Along the Road-Pvt.	Belbari		
423		Loc-39/1	Single Pole		40	19897	25.844873	92.978182	Along the Road-Pvt.	Belbari		
424		Loc-39/2	Single Pole	9°68'11"	40	19937	25.844745	92.978523	Along the Road-Pvt.	Belbari		
425		Loc-39/3	Single Pole	4°97'73"	49	19977	25.844503	92.978948	Along the Road-Pvt.	Belbari		
426		Loc-39/4	Single Pole	0°64'83"	40	20026	25.844237	92.979336	Along the Road-Pvt.	Belbari		
427		Loc-39/5	Single Pole	0°14'33"	49	20066	25.843964	92.979725	Along the Road-Pvt.	Belbari		
428		Loc-39/6	Single Pole	0°84'09"	50	20115	25.843691	92.980112	Along the Road-Pvt.	Belbari		
429		Loc-39/7	Single Pole	0°88'90"	49	20165	25.843420	92.980508	Along the Road-Pvt.	Belbari		
430	AP-40	AP-40	Double Pole	20°10'09"	45	20214	25.843151	92.980914	Along the Road-Pvt.	Belbari	Guarding Required	
									Bitumin road-4m			

POLE SCHEDULE												
33KV S/C SHAKARDEO NAGAR TOMAILO LINE												
CONTRACTOR: NECCON POWER & INFRA LIMITED												
PACKAGE: ASM- ASM-DMS-01												
CLIENT: POWER GRID CORPORATION OF INDIA LIMITED												
LOA Ref.No: I.CC-CS/94-NER/REW-3079/I/G10/CA-I/7036 -Supply												
2.CC-CS/94-NER/REW-3079/I/G10/CA-II/7027- Services												
SL. No.	Angle Point	Loc. No	Pole Type	Angle of Deviation	Span Length (m)	Cumm. Span (m)	Co-Ordinates		Description of Land	Crossing Details	Village Name	Remarks
							Latitude	Longitude				
431	AP-41	AP-41	Double Pole	26°50'75"	37	20259	25.842817	92.981160	Along the Road-Pvt.		Belbari	
432	AP-51	Loc-41/1	Single Pole	13°47'30"	36	20296	25.842650	92.981482	Along the Road-Pvt.		Belbari	
433		Loc-41/2	Single Pole	15°42'06"	36	20332	25.842420	92.981782	Along the Road-Pvt.		Belbari	
434		Loc-41/3	Single Pole	1°91'33"	36	20368	25.842156	92.981981	Along the Road-Pvt.		Belbari	
435		Loc-41/4	Single Pole	0°08'77"	49	20417	25.841775	92.982248	Along the Road-Pvt.		Belbari	
436		Loc-41/5	Single Pole	1°64'27"	50	20467	25.841397	92.982512	Along the Road-Pvt.		Belbari	
437		Loc-41/6	Single Pole	0°73'23"	50	20517	25.841011	92.982774	Along the Road-Pvt.		Belbari	
438		Loc-41/7	Single Pole	2°48'40"	49	20566	25.840624	92.983020	Along the Road-Pvt.		Belbari	
439		Loc-41/8	Single Pole	0°62'05"	50	20616	25.840228	92.983247	Along the Road-Pvt.		Belbari	
440		Loc-41/9	Single Pole	0°22'09"	49	20665	25.839832	92.983468	Along the Road-Pvt.		Belbari	
441		Loc-41/10	Single Pole	16°28'65"	35	20700	25.839557	92.983620	Along the Road-Pvt.		Belbari	
442		Loc-41/11	Single Pole	0°32'00"	35	20735	25.839331	92.983852	Along the Road-Pvt.		Belbari	
443		Loc-41/12	Single Pole	5°93'18"	49	20784	25.839000	92.984188	Along the Road-Pvt.		Belbari	
444		Loc-41/13	Single Pole	2°85'91"	49	20833	25.838715	92.984544	Along the Road-Pvt.		Belbari	
445		Loc-41/14	Double Pole	0°00'26"	40	20873	25.838490	92.984855	Along the Road-Pvt.		Belbari	SP-76 Pole Required
446	AP-42	AP-42	Double Pole	2°55'91"	34	20907	25.838320	92.985090	Along the Road-Pvt.	Over 11KV Line	Belbari	Guarding Required
447		AP-42_1	Single Pole	2°85'91"	34	20941	25.83804	92.98531	Along the Road-Pvt.		Belbari	SP-76 Pole Required
448		AP-42_2	Four Pole	85°85'91"	48	20989	25.83776	92.98567	Along the Road-Pvt.		Belbari	
449		AP-42_3	Single Pole	0°62'05"	46	21035	25.83746	92.98536	Along the Road-Pvt.		Belbari	
450		AP-42_4	Double Pole	0°08'77"	35	21070	25.83723	92.98512	Along the Road-Pvt.		Belbari	
451		AP-42_5	Single Pole	0°62'05"	32	21102	25.836985	92.98494	Along the Sub-station boundary		Belbari	
452		AP-42_6	Single Pole	80°85'91"	20	21122	25.836855	92.984808	Along the Sub-station boundary		Belbari	
453		AP-42_7	Four Pole	85°85'91"	34	21156	25.83703	92.98453	Along the Sub-station boundary		Belbari	
454	Gantry		Gantry		16	21172	25.83716	92.9846			Belbari	

POLE SCHEDULE

33kV S/C SAMAGURI TO HATIMURAH -II LINE

CLIENT: POWER GRID CORPORATION OF INDIA LIMITED

TRACTOR: NECCON POWER & INFRA LIMIT

**LOA Ref.No: 1.CC-CS/94-NER/REW-3079/I/G10/CA-I/7026 -Supply
2.CC-CS/94-NER/REW-3079/I/G10/CA-II/7027-Services**

PACKAGE:ASM- ASM-DMS-01

SL. No.	Angle Point	Loc. No	Pole Type	Angle of Deviation	Span Length (m)	Cumm. Span (m)	Stay (Nos)	Earthing (Nos)	Co-Ordinates		Description of Land	Crossing Details	Village Name	Remarks
									Latitude	Longitude				
1	AP-1	AP-1	Double Pole	0°00'00"	30		0	2	26.406638	92.846262	S/s Boundary wall	Over-33kV 4Nos Line	Samaguri	
2		Loc-1/1	Double Pole	14°16'34"	19	30	2	1	26.40691	92.84625	Paddy Field-Pvt.	Over-33kV Line(D/Cir.)	Samaguri	
3	AP-2	AP-2	Double Pole	49°41'42"	49	49	2	1	26.40708	92.84629	Paddy Field-Pvt.		Samaguri	
4	AP-3	AP-3	Double Pole	11°99'59"	49	98	2	1	26.40743	92.84599	Paddy Field-Pvt.		Samaguri	
5	AP-4	AP-4	Double Pole	7°66'01"	45	143	2	1	26.40769	92.84565	Paddy Field-Pvt.	Over-33kV Line	Samaguri	
6		Loc-4/1	Single Pole	5°24'67"	57	188	0	0	26.40799	92.84535	Paddy Field-Pvt.		Samaguri	
7		Loc-4/2	Double Pole	4°61'24"	40	245	2	1	26.4084	92.84501	Paddy Field-Pvt.	Under-132 kV Line	Samaguri	
8		Loc-4/3	Double Pole	11°49'80"	51	285	0	1	26.408672	92.844744	Paddy Field-Pvt.		Samaguri	
9		Loc-4/4	Single Pole	13°75'95"	52	336	0	0	26.409069	92.844491	Paddy Field-Pvt.		Samaguri	
10	AP-5	AP-5	Four Pole	68°71'47"	23	388	4	2	26.40941	92.84413	Paddy Field-Pvt.	Over-33kV Line(D/Cir.)	Samaguri	
11		Loc-5/1	Double Pole	3°53'31"	11	411	2	1	26.4096	92.84423	Paddy Field-Pvt.	Under-33 kV Line	Samaguri	
12		Loc-5/2	Double Pole	5°20'35"	37	422	2	1	26.40969	92.84427	Paddy Field-Pvt.	Over-33kV Line	Samaguri	
13		Loc-5/3	Double Pole	5°91'00"	50	459	2	0	26.40999	92.84444	Paddy Field-Pvt.		Samaguri	
14		Loc-5/4	Single Pole	3°64'38"	50	509	0	0	26.41041	92.84462	Paddy Field-Pvt.		Samaguri	
15		Loc-5/5	Single Pole	0°02'41"	53	559	0	0	26.41082	92.84483	Paddy Field-Pvt.		Samaguri	
16		Loc-5/6	Single Pole	1°01'85"	50	612	0	0	26.41125	92.84505	Paddy Field-Pvt.		Samaguri	
17		Loc-5/7	Single Pole	1°04'25"	50	662	0	0	26.41166	92.84525	Paddy Field-Pvt.		Samaguri	
18		Loc-5/8	Single Pole	1°01'81"	52	712	0	1	26.41207	92.84546	Paddy Field-Pvt.		Samaguri	
19		Loc-5/9	Single Pole	1°56'85"	50	764	0	0	26.4125	92.84567	Paddy Field-Pvt.		Samaguri	
20		Loc-5/10	Single Pole	7°62'46"	28	814	0	0	26.41292	92.84586	Paddy Field-Pvt.		Samaguri	
21	AP-6	AP-6	Single Pole	12°16'77"	34	842	1	0	26.41314	92.846	Paddy Field-Pvt.		Samaguri	
22		Loc-6/1	Single Pole	5°37'87"		876	1	0	26.41337	92.84623	Paddy Field-Pvt.		Samaguri	

100	Loc-20/9	Single Pole	1°23'51"			4737	0	0	26.42505	92.87871	Paddy Field-Pvt.	Samaguri
				51		0						
101	Loc-20/10	Single Pole	0°19'46"			4788	0	0	26.42497	92.87921	Paddy Field-Pvt.	Samaguri
				52		0						
102	Loc-20/11	Single Pole	1°02'81"			4840	0	1	26.42489	92.87972	Paddy Field-Pvt.	Samaguri
				57		0						
103	Loc-20/12	Single Pole	0°94'69"			4897	0	0	26.42481	92.88029	Paddy Field-Pvt.	Samaguri
				45		0						
104	Loc-20/13	Single Pole	0°21'94"			4942	0	0	26.42474	92.88074	Paddy Field-Pvt.	Samaguri
				44		0						
105	AP-21	Double Pole	64°09'03"			4986	2	1	26.42467	92.88118	Paddy Field-Pvt.	Samaguri
				102		0						
106	Loc-21/2	Double Pole	2°43'73"			5088	2	0	26.42541	92.88178	Paddy Field-Pvt.	Samaguri
				50		0						
107	Loc-21/3	Single Pole	25°18'44"			5138	1	0	26.42576	92.88209	Paddy Field-Pvt.	Samaguri
				50		0						
108	Loc-21/4	Single Pole	0°51'62"			5188	1	0	26.42596	92.88254	Paddy Field-Pvt.	Samaguri
				49		0						
109	Loc-21/5	Single Pole	1°19'36"			5237	0	0	26.42616	92.88298	Paddy Field-Pvt.	Samaguri
				52		0						
110	Loc-21/6	Single Pole	4°72'80"			5289	1	0	26.42638	92.88344	Paddy Field-Pvt.	Samaguri
				34		0						
111	AP-22	Single Pole	2°96'05"			5323	1	0	26.42665	92.88375	Paddy Field-Pvt.	Samaguri
				35		0						
112	Loc-22/1	Single Pole	3°65'24"			5358	0	0	26.42661	92.88408	Paddy Field-Pvt.	Samaguri
				49		0						
113	Loc-22/2	Single Pole	4°45'36"			5407	0	1	26.42679	92.88453	Paddy Field-Pvt.	Samaguri
				50		0						
114	Loc-22/3	Single Pole	3°53'93"			5457	0	0	26.42694	92.885	Paddy Field-Pvt.	Samaguri
				51		0						
115	Loc-22/4	Single Pole	0°43'29"			5508	0	0	26.42712	92.88547	Paddy Field-Pvt.	Samaguri
				52		0						
116	Loc-22/5	Single Pole	0°43'29"			5560	0	0	26.4273	92.88595	Paddy Field-Pvt.	Samaguri
				51		0						
117	Loc-22/6	Single Pole	1°16'06"			5611	0	0	26.42748	92.88642	Paddy Field-Pvt.	Samaguri
				50		0						
118	Loc-22/7	Single Pole	2°46'88"			5661	1	0	26.42765	92.88689	Paddy Field-Pvt.	Rangagora
				50		0						
119	Loc-22/8	Single Pole	0°59'34"			5711	0	1	26.427837	92.887349	Paddy Field-Pvt.	Rangagora
				51		0						
120	Loc-22/9	Single Pole	1°90'16"			5762	0	0	26.42803	92.88781	Paddy Field-Pvt.	Rangagora
				51		0						
121	Loc-22/10	Single Pole	0°91'43"			5813	0	0	26.42821	92.88828	Paddy Field-Pvt.	Rangagora
				49		0						
122	Loc-22/11	Single Pole	0°22'66"			5862	0	0	26.42839	92.88873	Paddy Field-Pvt.	Rangagora
				51		0						
123	Loc-22/12	Single Pole	0°22'66"			5913	0	0	26.42858	92.8892	Paddy Field-Pvt.	Rangagora
				49		0						
124	Loc-22/13	Single Pole	1°17'43"			5962	0	1	26.42876	92.88965	Paddy Field-Pvt.	Rangagora
				50		0						
125	Loc-22/14	Single Pole	3°38'83"			6012	1	0	26.42895	92.8901	Paddy Field-Pvt.	Rangagora
				51		0						
126	Loc-22/15	Single Pole	1°03'54"			6063	1	0	26.42917	92.89055	Paddy Field-Pvt.	Rangagora

152		Loc-28/3	Single Pole	0°37'42"		48	7288	0	0	26.4347	92.90056	Tea Garden-Pvt.		Rangagora
153		Loc-28/4	Single Pole	3°28'41"		53	7336	1	0	26.435	92.90091	Tea Garden-Pvt.		Rangagora
154		Loc-28/5	Single Pole	2°12'57"		60	7389	0	0	26.435348	92.901272	Tea Garden-Pvt.		Rangagora
155		Loc-28/6	Single Pole	1°29'90"		47	7449	0	0	26.43573	92.9017	Tea Garden-Pvt.	Kachha Road (2.50m)	Rangagora
156		Loc-28/7	Single Pole	1°27'25"		51	7496	0	0	26.43602	92.90204	Tea Garden-Pvt.		Rangagora
157		Loc-28/8	Single Pole	1°41'31"		48	7547	0	0	26.43633	92.90242	Tea Garden-Pvt.		Rangagora
158		Loc-28/9	Single Pole	0°29'05"		45	7595	0	0	26.43663	92.90277	Tea Garden-Pvt.		Rangagora
159		Loc-28/10	Single Pole	0°36'11"		50	7640	0	0	26.43691	92.9031	Tea Garden-Pvt.		Rangagora
160	AP-29	AP-29	Double Pole	26°85'44"		48	7690	1	1	26.43722	92.90347	Tea Garden-Pvt.		Rangagora
161		Loc-29/1	Single Pole	4°17'57"		54	7738	0	0	26.43734	92.90393	Tea Garden-Pvt.		Rangagora
162		Loc-29/2	Single Pole	9°87'46"		55	7792	2	0	26.43751	92.90444	Along the Tea Garden Road-Pvt.		Rangagora
163		Loc-29/3	Single Pole	2°04'69"		51	7847	0	0	26.4376	92.90498	Along the Tea Garden Road-Pvt.		Rangagora
164		Loc-29/4	Single Pole	9°74'93"		45	7898	0	0	26.4377	92.90548	Along the Tea Garden Road-Pvt.		Rangagora
165		Loc-29/5	Single Pole	7°01'37"		45	7943	0	0	26.43772	92.90593	Along the Tea Garden Road-Pvt.		Rangagora
166		Loc-29/6	Single Pole	2°51'77"		57	7988	0	0	26.43779	92.90638	Along the Tea Garden Road-Pvt.		Rangagora
167		Loc-29/7	Single Pole	2°62'39"		53	8045	0	0	26.4379	92.90694	Along the Tea Garden Road-Pvt.		Rangagora
168		Loc-29/8	Single Pole	9°48'99"		51	8098	1	0	26.43798	92.90746	Along the Tea Garden Road-Pvt.	Kachha Road (2.50m)	Rangagora
169		Loc-29/9	Single Pole	7°16'78"		48	8149	2	1	26.43813	92.90794	Along the Tea Garden Road-Pvt.		Rangagora
170		Loc-29/10	Single Pole	1°73'77"		50	8197	1	0	26.43822	92.90841	Along the Tea Garden Road-Pvt.		Rangagora
171		Loc-29/11	Single Pole	1°40'42"		44	8247	0	0	26.4383	92.90889	Along the Tea Garden Road-Pvt.		Rangagora
172		Loc-29/12	Single Pole	0°55'55"		42	8291	0	0	26.43838	92.90933	Along the Tea Garden Road-Pvt.		Rangagora
173		Loc-29/13	Single Pole	2°21'85"		44	8333	0	0	26.43846	92.90974	Along the Tea Garden Road-Pvt.		Rangagora
174		Loc-29/14	Single Pole	1°49'64"		61	8377	0	0	26.43853	92.91018	Along the Tea Garden Road-Pvt.		Rangagora
175		Loc-29/15	Single Pole	1°01'97"		51	8438	0	0	26.43864	92.91078	Along the Tea Garden Road-Pvt.		Rangagora
176		Loc-29/16	Single Pole	0°90'60"		55	8489	0	0	26.43874	92.91128	Along the Tea Garden Road-Pvt.		Rangagora
177		Loc-29/17	Single Pole	0°43'64"		53	8544	0	0	26.43884	92.91182	Along the Tea Garden Road-Pvt.		Rangagora
178		Loc-29/18	Single Pole	0°49'62"			8597	0	0	26.43894	92.91234	Along the Tea Garden Road-Pvt.		Rangagora

205	Loc-32/9	Single Pole	4°49'76"			9865	0	0	26.44644	92.92116	Along the Tea Garden Road-Pvt.		Amoni
206	Loc-32/10	Single Pole	1°63'55"		49	0	0	0	26.44666	92.92159	Along the Tea Garden Road-Pvt.		Amoni
207	Loc-32/11	Single Pole	3°34'16"		52	0	0	0	26.44688	92.92205	Along the Tea Garden Road-Pvt.		Amoni
208	Loc-32/12	Single Pole	3°39'09"		49	0	0	0	26.44711	92.92247	Along the Tea Garden Road-Pvt.		Amoni
209	Loc-32/13	Single Pole	0°04'92"		50	0	0	0	26.44732	92.92291	Along the Tea Garden Road-Pvt.		Amoni
210	Loc-32/14	Single Pole	2°36'19"		52	0	0	0	26.44754	92.92337	Along the Tea Garden Road-Pvt.		Amoni
211	Loc-32/15	Single Pole	9°16'95"		49	0	0	0	26.44773	92.92381	Along the Tea Garden Road-Pvt.		Amoni
212	Loc-32/16	Single Pole	10°86'10"		39	0	0	0	26.44793	92.92413	Along the Tea Garden Road-Pvt.		Amoni
213	AP-33	Single Pole	16°59'72"		36	0	1	1	26.44816	92.92438	Along the Tea Garden Road-Pvt.	Kachha Road (3m)	Amoni
214	AP-34	Single Pole	0°56'41"		34	0	0	0	26.44831	92.92468	Along the Tea Garden Road-Pvt.		Amoni
215	Loc-34/1	Single Pole	3°34'55"		49	0	0	0	26.44853	92.92511	Along the Tea Garden Road-Pvt.		Amoni
216	Loc-34/2	Single Pole	0°82'07"		50	0	0	0	26.44873	92.92556	Along the Tea Garden Road-Pvt.		Amoni
217	AP-35	Double Pole	30°61'83"		31	0	3	1	26.44885	92.92584	Along the Tea Garden Road-Pvt.		Amoni
218	Loc-35/1	Single Pole	5°03'91"		38	0	1	1	26.44882	92.92622	Tea Garden-Pvt.	Kachha Road (3m)	Amoni
219	Loc-35/2	Single Pole	2°78'02"		51	0	0	0	26.44882	92.92673	Tea Garden-Pvt.		Amoni
220	Loc-35/3	Single Pole	1°61'68"		46	0	0	0	26.44884	92.92719	Tea Garden-Pvt.	Kachha Road (2.50m)	Amoni
221	Loc-35/4	Single Pole	0°09'12"		55	0	0	0	26.44885	92.92774	Tea Garden-Pvt.		Amoni
222	Loc-35/5	Single Pole	0°02'41"		51	0	0	0	26.44886	92.92825	Tea Garden-Pvt.		Amoni
223	Loc-35/6	Single Pole	2°39'38"		52	0	0	0	26.44887	92.92877	Tea Garden-Pvt.		Amoni
224	Loc-35/7	Single Pole	0°22'75"		55	0	0	0	26.44886	92.92932	Tea Garden-Pvt.		Amoni
225	Loc-35/8	Single Pole	9°02'47"		46	0	0	0	26.44885	92.92978	Tea Garden-Pvt.		Amoni
226	Loc-35/9	Single Pole	9°23'32"		50	0	0	0	26.44891	92.93028	Tea Garden-Pvt.		Amoni
227	Loc-35/10	Double Pole	0°39'96"		40	0	0	1	26.44891	92.93068	Tea Garden-Pvt.		Amoni
228	Loc-35/11	Single Pole	5°54'97"		32	0	0	1	26.44889	92.931	Tea Garden-Pvt.	Under- 33kV Line	Amoni
229	Loc-35/12	Single Pole	1°09'09"		36	0	0	0	26.44891	92.93136	Tea Garden-Pvt.		Amoni
230	Loc-35/13	Single Pole	1°12'68"		52	0	0	0	26.44893	92.93188	Tea Garden-Pvt.		Amoni
231	Loc-35/14	Single Pole	1°33'30"		48	0	0	0	26.44894	92.93236	Tea Garden-Pvt.		Amoni

258	AP-39	Double Pole	89°51'58"		12280	2	2	26.45028	92.94429	Tea Garden-Pvt.	Rail Line Crossing	Amoni
259		Double Pole	15°08'17"	71	0		2	26.45093	92.94436	Paddy Field-Pvt.		Amoni
260		Single Pole	2°58'22"	51	0	0	0	26.451359	92.94454	Tea Garden-Pvt.		Amoni
261		Single Pole	1°37'16"	55	0	0	0	26.45183	92.944711	Tea Garden-Pvt.		Amoni
262		Single Pole	1°02'57"	43	0	0	0	26.452194	92.944854	Tea Garden-Pvt.		Amoni
263		Single Pole	0°78'45"	56	0	0	0	26.452669	92.94503	Tea Garden-Pvt.		Amoni
264		Single Pole	2°67'31"	55	0	0	0	26.453136	92.945211	Tea Garden-Pvt.		Amoni
265		Single Pole	6°08'73"	47	0	0	0	26.453532	92.945388	Tea Garden-Pvt.		Amoni
266		Single Pole	3°10'62"	45	0	1	1	26.45392	92.94551	Tea Garden-Pvt.		Amoni
267		Single Pole	0°22'68"	50	0	0	0	26.45436	92.94562	Tea Garden-Pvt.		Amoni
268		Single Pole	0°64'72"	55	0	0	0	26.454845	92.945739	Tea Garden-Pvt.		Amoni
269		Single Pole	0°05'09"	53	0	0	0	26.455309	92.945859	Tea Garden-Pvt.		Amoni
270		Single Pole	0°97'39"	53	0	0	0	26.455771	92.945978	Tea Garden-Pvt.		Amoni
271		Single Pole	0°04'00"	51	0	0	0	26.456214	92.946101	Tea Garden-Pvt.	Kachha Road (2.50m)	Amoni
272		Single Pole	7°83'57"	53	0	0	0	26.45668	92.94623	Tea Garden-Pvt.		Amoni
273		Double Pole	11°82'62"	47	0	2	1	26.4571	92.94628	Tea Garden-Pvt.		Amoni
274		Single Pole	1°40'49"	52	0	0	0	26.457546	92.946441	Tea Garden-Pvt.		Amoni
275		Single Pole	3°28'00"	49	0	0	0	26.457969	92.946581	Paddy Field-Pvt.		Amoni
276		Single Pole	3°65'88"	52	0	0	0	26.458412	92.946759	Tea Garden-Pvt.		Amoni
277		Single Pole	3°86'28"	54	0	0	0	26.45886	92.946976	Tea Garden-Pvt.		Amoni
278		Single Pole	20°10'40"	53	0	2	1	26.459308	92.947154	Paddy Field-Pvt.		Amoni
279		Single Pole	12°60'69"	44	0	1	0	26.4597	92.94715	Tea Garden-Pvt.		Amoni
280		Single Pole	2°02'09"	47	0	0	0	26.46014	92.947249	Tea Garden-Pvt.		Amoni
281		Single Pole	0°73'63"	51	0	0	0	26.460563	92.947338	Tea Garden-Pvt.		Amoni
282		Single Pole	1°03'46"	50	0	0	0	26.46101	92.94742	Tea Garden-Pvt.		Amoni
283		Single Pole	0°95'33"	48	0	0	0	26.46144	92.94749	Tea Garden-Pvt.	Kachha Road (2.50m)	Amoni
				50	0	0	0					Amoni

335	AP-45	Single Pole (SP 76 Pole)	80°75'16"		16048	1	0	1	26.47947	92.95619	Along the road -Pvt.		Missa
336	Loc-44/1A	Single Pole	4°9'64"	18	16066	0	0	0	26.47963	92.95623	Along the road -Pvt.		Missa
337	Loc-45/1	Double Pole	2°25'22"	22	16088	0	0	1	26.47983	92.95626	Tea Garden-Pvt.	Over- LT Line	Missa
338	Loc-45/2	Double Pole	1°9'730"	54	16142	0	0	1	26.480307	92.956353	Tea Garden-Pvt.	Kachha Road (2.50m)	Missa
339	Loc-45/3	Double Pole	1°34'82"	47	16189	0	0	1	26.48072	92.95645	Tea Garden-Pvt.	Over- LT Line	Missa
340	Loc-45/4	Double Pole	1°75'89"	60	16249	0	0	1	26.48125	92.95656	Tea Garden-Pvt.		Missa
341	Loc-45/5	Single Pole	2°82'84"	42	16291	0	0	0	26.48162	92.95665	Tea Garden-Pvt.		Missa
342	Loc-45/6	Single Pole	0°9'16"	48	16339	0	0	0	26.48205	92.95673	Tea Garden-Pvt.	Kachha Road (2.50m)	Missa
343	Loc-45/7	Single Pole	0°9'16"	43	16382	0	0	0	26.48243	92.95668	Tea Garden-Pvt.		Missa
344	Loc-45/8	Single Pole		48	16430	0	0	0	26.48286	92.95688	Tea Garden-Pvt.		Missa
345	AP-46	Four Pole	1°55'66"	52	16482	2	0	2	26.48332	92.95698	Tea Garden-Pvt.		Missa
346	Loc-46/1	Single Pole	7°14'48"	53	16535	0	0	0	26.48337	92.95751	Tea Garden-Pvt.		Missa
347	AP-47	Double Pole	17°98'14"	44	16579	0	0	1	26.48346	92.95794	Tea Garden-Pvt.		Missa
348	Loc-47/1	Single Pole	0°72'92"	53	16632	0	0	0	26.48342	92.95847	Tea Garden-Pvt.		Missa
349	Loc-47/2	Single Pole	1°38'15"	46	16678	0	0	0	26.48338	92.95893	Tea Garden-Pvt.		Missa
350	Loc-47/3	Single Pole	0°74'46"	46	16724	0	0	0	26.48335	92.95939	Tea Garden-Pvt.		Missa
351	Loc-47/4	Single Pole	4°91'20"	52	16776	0	0	0	26.48331	92.95991	Along the road -Pvt.	Kachha Road (2.50m)	Missa
352	Loc-47/5	Double Pole	6°01'68"	46	16822	0	0	1	26.48331	92.96037	Along the road -Pvt.		Missa
353	Loc-47/6	Double Pole	0°11'06"	53	16875	1	0	1	26.48326	92.96099	Along the road -Pvt.	Over- 11kV Line	Missa
354	Loc-47/7	Double Pole	5°69'04"	54	16929	2	0	1	26.48321	92.96144	Tea Garden-Pvt.	POND	Missa
355	Loc-47/8	Single Pole	8°87'46"	50	16979	0	0	0	26.48312	92.96193	Tea Garden-Pvt.		Missa
356	Loc-47/9	Single Pole	0°32'35"	47	17026	0	0	0	26.4831	92.9624	Tea Garden-Pvt.		Missa
357	Loc-47/10	Single Pole	2°16'58"	42	17068	0	0	0	26.48308	92.96282	Tea Garden-Pvt.		Missa
358	Loc-47/11	Double Pole	0°10'79"	49	17117	0	0	1	26.48304	92.96331	Tea Garden-Pvt.		Missa
359	Loc-47/12	Double Pole	6°05'16"	48	17165	0	0	1	26.483	92.96379	Tea Garden-Pvt.	Kachha Road (3m)	Missa
360	Loc-47/13	Single Pole	3°07'95"	51	17216	0	0	0	26.48291	92.96429	Tea Garden-Pvt.		Missa
				46	0	0	0	0					

361	Loc-47/14	Single Pole	0°34'10"			17262	0	0	26.48285	92.96475	Tea Garden-Pvt.		Missa
				48		0							
362	Loc-47/15	Single Pole	3°53'23"			17310	0	0	26.48279	92.96523	Tea Garden-Pvt.		Missa
				45		0							
363	Loc-47/16	Single Pole	0°11'40"			17355	0	0	26.48271	92.96567	Tea Garden-Pvt.		Missa
				50		0							
364	Loc-47/17	Single Pole	4°95'83"			17405	0	0	26.48262	92.96616	Tea Garden-Pvt.		Missa
				48		0							
365	Loc-47/18	Single Pole	0°59'73"			17453	0	0	26.48257	92.96664	Tea Garden-Pvt.		Missa
				44		0							
366	Loc-47/19	Single Pole	5°60'88"			17497	0	0	26.48252	92.96708	Tea Garden-Pvt.		Missa
				50		0							
367	Loc-47/20	Single Pole	3°10'59"			17547	0	0	26.48242	92.96757	Tea Garden-Pvt.		Missa
				45		0							
368	Loc-47/21	Single Pole	10°15'06"			17592	0	0	26.48231	92.968	Tea Garden-Pvt.		Missa
				44		0							
369	Loc-47/22	Single Pole	6°27'62"			17636	0	0	26.48227	92.96844	Tea Garden-Pvt.		Missa
				48		0							
370	AP-48	Double Pole	26°01'87"			17684	2	1	26.48218	92.96891	Tea Garden-Pvt.		Missa
				55		0							
371	Loc-48/1	Double Pole	6°90'74"			17739	0	1	26.4823	92.96945	Tea Garden-Pvt.		Missa
				47		0							
372	Loc-48/2	Single Pole	7°74'79"			17786	0	0	26.48245	92.96989	Tea Garden-Pvt.		Missa
				49		0							
373	Loc-48/3	Single Pole	5°56'06"			17835	0	0	26.48255	92.97037	Tea Garden-Pvt.		Missa
				45		0							
374	Loc-48/4	Single Pole	0°90'61"			17880	0	0	26.48268	92.9708	Tea Garden-Pvt.		Missa
				46		0							
375	Loc-48/5	Single Pole	10°31'56"			17926	0	0	26.48282	92.97124	Tea Garden-Pvt.		Missa
				48		0							
376	Loc-48/6	Double Pole	9°74'16"			17974	0	1	26.48289	92.97172	Tea Garden-Pvt.	Over-11KV Line & Kachha Road (4m)	Missa
				57		0							
377	Loc-48/7	Double Pole	0°61'86"			18031	0	1	26.483057	92.972262	Tea Garden-Pvt.		Missa
				55		0							
378	Loc-48/8	Single Pole	2°00'99"			18086	0	0	26.483214	92.97279	Tea Garden-Pvt.		Missa
				38		0							
379	Loc-48/9	Single Pole	1°67'68"			18124	0	0	26.483311	92.973159	Tea Garden-Pvt.		Missa
				51		0							
380	Loc-48/10	Single Pole	4°65'59"			18175	1	0	26.483453	92.973646	Tea Garden-Pvt.		Missa
				48		0							
381	Loc-48/11	Single Pole	4°33'04"			18223	0	0	26.483554	92.974119	Tea Garden-Pvt.		Missa
				46		0							
382	AP-49	Double Pole	22°27'07"			18269	1	1	26.48362	92.97458	Tea Garden-Pvt.		Missa
				51		0							
383	Loc-49/1	Single Pole	2°47'74"			18320	0	0	26.48386	92.97502	Tea Garden-Pvt.	Kachha Road (3m)	Missa
				54		0							
384	Loc-49/2	Single Pole	3°86'62"			18374	1	0	26.48413	92.97547	Tea Garden-Pvt.	Over- LT Line, Kachha Road (3m)	Missa
				36		0							
385	Loc-49/3	Double Pole	2°58'56"			18410	0	1	26.48429	92.97578	Tea Garden-Pvt.		Missa
				50		0							
386	Loc-49/4	Single Pole	2°16'63"			18460	0	0	26.48453	92.9762	Tea Garden-Pvt.		Missa

POLE SCHEDULE

132kV S/S TEOK TO TEOK (EXISTING) LINE

CONTRACTOR: M/S STERLING
AND WILSON PVT.
LTD. KOLKATA, WEST BENGAL

CLIENT: POWER GRID CORPORATION OF INDIA LIMITED

PACKAGE: ASM- ASM-DMS-02

LOA Ref. No.: I.CC-CS/94-NER/REW-3081/1/G10/CA-I/7117 -Supply
PACKAGE: ASM-DMS-02

2.CC-CS/94-NER/REW-3081/1/G10/CA-II/7118 -Services

SL. No.	Angle Point	Loc. No	Pole Type	Extn.	Angle of Deviation	Span Length (m)	Cumm. Span (m)	Co-Ordinates		Description of Land	Crossing Details	Village Name	Remarks
								Latitude	Longitude				
1		GANTRY	GANTRY					26 50 18.0	94 26 12.1	Existing 33/11kV Teok S/s			
2						42							
3	AP-1	FP-1	Four Pole		95°14'12"		42	26 50 18.2	94 26 13.6	Paddy Land			
4						47	42						
5	AP-2	DP-1	Double Pole		22°19'56"		89	26 50 19.6	94 26 12.9	Paddy Land			
6						49	89						
7	AP-3	DP-2	Double Pole		16°11'21"		138	26 50 20.7	94 26 11.6	Paddy Land			
8						46	138						
9	AP-4	DP-3	Double Pole		28°23'65"		184	26 50 22.0	94 26 10.8	Paddy Land			
10						47	184						
11	AP-4/1	DP-4	Double Pole				231	26 50 23.0	94 26 09.5	Paddy Land			
12						45	231						
13	AP-4/2	DP-5	Double Pole				276	26 50 24.0	94 26 08.3	Paddy Land			
14						45	276				Lt line Crossing		
15	AP-4/3	DP-6	Double Pole				321	26 50 25.0	94 26 07.1	Paddy Land			
16						47	321						
17	AP-4/4	DP-7	Double Pole				368	26 50 26.0	94 26 05.8	Paddy Land			
18						43	368						
19	AP-4/5	DP-8	Double Pole				411	26 50 27.0	94 26 04.7	Paddy Land			
20						35	411						
21	AP-5	DP-9	Double Pole		52°51'06"		446	26 50 27.7	94 26 03.7	Paddy Land			11kv Crossing
22						50	446						
23	AP-5/1	DP-10	Double Pole				496	26 50 29.3	94 26 03.8	Paddy Land			
24						50	496						
25	AP-5/2	DP-11	Double Pole				546	26 50 30.9	94 26 03.9	Paddy Land			
26						46	546						



जि. सि. ए. ए. ए.

जि. गणेश स्वरूप, सहायक अभियन्ता
G. GANESH SWAROOP, ASSTT. ENGINEER
पावरग्रिड, एन.ई.आर.पि.एस.आइ.पि.टी.क

27	AP-5/3	DP-12	Double Pole				592	26 50 32.4	94 26 03.9	Paddy Land		
28						46	592					
29	AP-5/4	DP-13	Double Pole				638	26 50 33.9	94 26 04.0	Paddy Land		
30						49	638					
31	AP-5/5	DP-14	Double Pole				687	26 50 35.5	94 26 04.0	Paddy Land		
32						50	687					
33	AP-5/6	DP-15	Double Pole			46	737	26 50 37.1	94 26 04.1	Paddy Land		
34							737					
35	AP-5/7	DP-16	Double Pole				783	26 50 38.6	94 26 04.2	Paddy Land		
36						49	783					
37	AP-5/8	DP-17	Double Pole				832	26 50 40.2	94 26 04.2	Paddy Land		
38						46	832					
39	AP-5/9	DP-18	Double Pole				878	26 50 41.7	94 26 04.3	Paddy Land		
40						50	878					
41	AP-5/10	DP-19	Double Pole				928	26 50 43.3	94 26 04.4	Paddy Land		
42						46	928					
43	AP-5/11	DP-20	Double Pole				974	26 50 44.8	94 26 04.4	Paddy Land		
44						43	974					
45	AP-5/12	DP-21	Double Pole				1017	26 50 46.2	94 26 04.5	Paddy Land		
46						43	1017					
47	AP-5/13	DP-22	Double Pole				1060	26 50 47.6	94 26 04.5	Paddy Land		
48						37	1060					
49	AP-6	DP-23	Double Pole		30°24'41"		1097	26 50 48.8	94 26 04.6	Paddy Land		
50						42	1097					
51	AP-6/1	DP-24	Double Pole				1139	26 50 50.1	94 26 04.1	Paddy Land		
52						49	1139					
53	AP-7	DP-25	Double Pole		14°01'54"		1188	26 50 51.5	94 26 03.3	Paddy Land		11kv Crossing
54						45	1188					
55	AP-7/1	DP-26	Double Pole				1233	26 50 52.9	94 26 02.8	Paddy Land		



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वि. जि. ए. ए. ए.

वि. गणेश स्वरोप, सहायक जनीयन्त्रा
 G. GANESH SWAROOP, ASSTT. ENGINEER
 पावरग्रिड, एन. ई. आर. वि. ए. एस. आड. पि. टी. यक
 POWERGRID, NERPSIP, TEOK

85	AP-14	DP-41	Double Pole		07°52'05"			1938	26 50 54.9	94 26 24.4	Tea Garden Area	Road Crossing	Jagduar
86							20	1938					
87	AP-14/1	DP-42	Double Pole					1958	26 50 54.8	94 26 25.1	Paddy Land		
88							50	1958					
89	AP-14/2	DP-43	Double Pole					2008	26 50 54.9	94 26 26.9	Paddy Land		
90							47	2008					
91	AP-14/3	DP-44	Double Pole					2055	26 50 55.0	94 26 28.6	Paddy Land		
92							47	2055					
93	AP-14/4	DP-45	Double Pole				44	2102	26 50 55.1	94 26 30.3	Paddy Land		
94								2102					
95	AP-14/5	DP-46	Double Pole					2146	26 50 55.1	94 26 31.9	Paddy Land		
96							44	2146					
97	AP-15	DP-47	Double Pole		48°47'33"			2190	26 50 55.2	94 26 33.5	Paddy Land		
98							47	2190					
99	AP-15/1	DP-48	Double Pole					2237	26 50 54.2	94 26 34.8	Paddy Land		
100							49	2237					
101	AP-15/2	DP-49	Double Pole					2286	26 50 53.2	94 26 36.2	Paddy Land		
102							47	2286					
103	AP-15/3	DP-50	Double Pole					2333	26 50 52.2	94 26 37.5	Paddy Land		
104							49	2333					
105	AP-15/4	DP-51	Double Pole					2382	26 50 51.2	94 26 38.9	Paddy Land		
106							47	2382					
107	AP-15/5	DP-52	Double Pole					2429	26 50 50.2	94 26 40.2	Paddy Land		
108							49	2429					
109	AP-15/6	DP-53	Double Pole					2478	26 50 49.2	94 26 41.5	Paddy Land		
110							43	2478					
111	AP-16	DP-54	Double Pole		28°25'14"			2521	26 50 48.3	94 26 42.8	Paddy Land		



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ज. अ. ल. म.

जि गणेश स्वरूप, सहायक अभियन्ता
 G. GANESH SWAROOP, ASSTT. ENGINEER
 पावरग्रिड, एन.ई.आर.पि.एस.आइ.पि.टी.क
 POWERGRID, NERPSIP, TECK

											11kv & Road Crossing	
164								43	3749			
165	AP-21/1	DP-81	Double Pole						3792	26 50 37.5	94 27 21.6	Tea Garden Area
166								44	3792			11kv Crossing
167	AP-21/2	DP-82	Double Pole						3836	26 50 37.5	94 27 23.2	Tea Garden Area
168								45	3836			
169	AP-21/3	DP-83	Double Pole						3881	26 50 37.5	94 27 24.8	Paddy Land
170								45	3881			
171	AP-21/4	DP-84	Double Pole						3926	26 50 37.5	94 27 26.4	Paddy Land
172								44	3926			
173	AP-21/5	DP-85	Double Pole						3970	26 50 37.5	94 27 28.0	Paddy Land
174								44	3970			
175	AP-21/6	DP-86	Double Pole						4014	26 50 37.3	94 27 29.6	Paddy Land
176								44	4014			
177	AP-21/7	DP-87	Double Pole						4058	26 50 37.2	94 27 31.2	Paddy Land
178								46	4058			
179	AP-21/8	DP-88	Double Pole						4104	26 50 37.1	94 27 32.9	Paddy Land
180								45	4104			
181	AP-22	DP-89	Double Pole			26°31'56"			4149	26 50 37.0	94 27 34.5	Road Crossing
182								22	4149			Lt line Crossing
183	AP-22/1	DP-90	Double Pole						4171	26 50 36.5	94 27 35.1	Private Land
184								40	4171			
185	AP-22/2	DP-91	Double Pole						4211	26 50 35.9	94 27 36.4	Private Land
186								26	4211			
187	AP-22/3	DP-92	Double Pole						4237	26 50 35.5	94 27 37.2	Private Land
188								37	4237			
189	AP-23	DP-93	Double Pole			46°42'35"			4274	26 50 34.8	94 27 38.3	Private Land
190								41	4274			
191	AP-23/1	DP-94	Double Pole						4315	26 50 35.2	94 27 39.7	Private Land

जि.सि.स्व.प

श्री गणेश स्वल्प, सहायक अभियन्ता
 G. GANESH SWARPOO, ASSTT. ENGINEER
 सार्वत्रिक, एन.ई.आर.पि.एम.आर.पि.टी.के.
 POWERGRID, NERPSIP, TEOK



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219	AP-30/2	DP-107	Double Pole				4888	26 50 31.4	94 27 54.0	Private Land		
220						48	4888					
221	AP-30/3	DP-108	Double Pole				4936	26 50 29.9	94 27 54.5	Private Land		
222						44	4936					
223	AP-30/4	DP-109	Double Pole				4980	26 50 28.5	94 27 54.8	Private Land		
224						46	4980					
225	AP-31	DP-110	Double Pole		35°19'34"		5026	26 50 27.0	94 27 54.8	Substation Area		
226						30	5026					
227	AP-32	DP-111	Double Pole		42°6'15"		5056	26 50 26.3	94 27 55.5	Substation Area		
228						30	5056					
229	AP-32/1	DP-112	Double Pole				5086	26 50 26.2	94 27 56.6	Substation Area		
230						31	5086					
231	AP-33	FP-3	Four Pole		91°56'36"		5117	26 50 26.1	94 27 57.7	Substation Area		
232						36	5117					
233	AP-33/1	DP-113	Double Pole				5153	26 50 25.0	94 27 57.8	Substation Area		
234						41	5153					
235	AP-33/2	DP-114	Double Pole				5194	26 50 23.7	94 27 57.8	Substation Area		
236						43	5194					
237	AP-33/3	DP-115	Double Pole				5237	26 50 22.3	94 27 57.9	Substation Area		
238						39	5237					
239	AP-34	FP-4	Four Pole		94°68'33"		5276	26 50 21.0	94 27 58.0	Substation Area		
240						28	5276					
241	AP-34/1	DP-116	Double Pole				5304	26 50 21.0	94 27 57.0	Substation Area		
242						30	5304					
243	AP-35	FP-5	Four Pole		86°44'18"		5334	26 50 21.0	94 27 55.9	Substation Area		
244						16	5334					
245		GANTRY	GANTRY				5350	26 50 21.5	94 27 55.8	Proposed 132/33KV S/s		

Wilson Pvt. Ltd. Sterling
Kolkata

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जि.पि.स्वयं

जि. गणेश स्वयं, सहायक अभियन्ता
G. GANESH SWAROOP, ASSTT. ENGINEER
पावरग्रिड, एन.ई.आर.पि.एम.आइ.पि.टीयक
POWERGRID, NERPSIP, TEOK

POLE SCHEDULE

132kV S/S TEOK TO Kokojan (EXSISTING) LINE


CLIENT: POWR GRID CORPORATION OF INDIA LIMITED

CONTRACTOR: M/S
STERLING AND WILSON
PVT. LTD. KOLKATA, WESTLOA Ref. No.: 1.CC-CS/94-NER/REW-3081/1/G10/CA-1/7117 -Supply
2.CC-CS/94-NER/REW-3081/1/G10/CA-1/7118 -Services

PACKAGE: ASM-DMS-02

PACKAGE: ASM- ASM-DMS-
02

SL. No.	Angle Point	Loc. No	Pole Type	Extn.	Angle of Deviation	Span Length (m)	Cumm. Span (m)	Co-Ordinates		Description of Land	Crossing Details	Village Name	Remarks
								Latitude	Longitude				
1		GANTRY	GANTRY					26 47 17.2	94 19 27.7	Paddy Field/Private Land			
2						9							
3	AP-1	FP-1	Four Pole		88°27'39"		9	26 47 17.0	94 19 27.4	Paddy Field/Private Land			
4						50	9						
5	AP-2	DP-1	Double Pole		38°54'45"		59	26 47 15.6	94 19 28.2	Paddy Field/Private Land			
6						49	59						
7	AP-2/1	SP-1	Single Pole				108	26 47 14.7	94 19 29.7	Paddy Field/Private Land			
8						49	108						
9	AP-3	FP-2	Four Pole		79°36'25"		157	26 47 13.8	94 19 31.2	Paddy Field/Private Land			
10						41	157						
11	AP-3/1	SP-2	Single Pole				198	26 47 14.4	94 19 32.5	Paddy Field/Private Land			
12						39	198						
13	AP-3/2	SP-3	Single Pole				237	26 47 14.9	94 19 33.8	Paddy Field/Private Land			
14						32	237						
15	AP-4	DP-2	Double Pole		24°38'08"		269	26 47 15.4	94 19 34.8	Paddy Field/Private Land			
16						48	269						
17	AP-4/1	SP-4	Single Pole				317	26 47 15.5	94 19 36.5	Paddy Field/Private Land			
18						49	317						
19	AP-4/2	SP-5	Single Pole				366	26 47 15.7	94 19 38.3	Paddy Field/Private Land			
20						50	366						
21	AP-4/3	SP-6	Single Pole				416	26 47 15.9	94 19 40.1	Paddy Field/Private Land			
22						50	416						
23	AP-4/4	SP-7	Single Pole				466	26 47 16.1	94 19 41.9	Paddy Field/Private Land			
24						49	466						
25	AP-4/5	SP-8	Single Pole				515	26 47 16.2	94 19 43.6	Paddy Field/Private Land			
26						49	515						
27	AP-4/6	SP-9	Single Pole				564	26 47 16.4	94 19 45.4	Paddy Field/Private Land			
28						49	564						
29	AP-4/7	SP-10	Single Pole				613	26 47 16.6	94 19 47.2	Paddy Field/Private Land			
30						50	613						
31	AP-4/8	SP-11	Single Pole				663	26 47 16.8	94 19 49.0	Paddy Field/Private Land			
32						50	663						
33	AP-5	DP-3	Double Pole		46°61'51"		713	26 47 17.0	94 19 50.8	Paddy Field/Private Land			
34						32	713						
35	AP-5/1	SP-12	Single Pole				745	26 47 17.6	94 19 51.7	Road Crossing			
36						30	745						
37	AP-5/2	SP-13	Single Pole				775	26 47 18.2	94 19 52.6	Paddy Field/Private Land			
38						48	775						
39	AP-5/3	SP-14	Single Pole				823	26 47 19.1	94 19 54.0	Paddy Field/Private Land			
40						49	823						
41	AP-5/4	SP-15	Single Pole				872	26 47 20.1	94 19 55.4	Paddy Field/Private Land			
42						43	872						
43	AP-5/5	SP-16	Single Pole				915	26 47 20.9	94 19 56.6	Paddy Field/Private Land			
44						46	915						
45	AP-6	DP-4	Double Pole		58°35'52"		961	26 47 21.8	94 19 58.0	Paddy Field/Private Land			
46						50	961						
47	AP-6/1	SP-17	Single Pole				1011	26 47 23.3	94 19 58.7	Paddy Field/Private Land			
48						48	1011						
49	AP-6/2	SP-18	Single Pole				1059	26 47 24.7	94 19 59.3	Paddy Field/Private Land			
50						47	1059						
51	AP-6/3	SP-19	Single Pole				1106	26 47 26.1	94 20 00.0	Paddy Field/Private Land			
52						50	1106						
53	AP-6/4	SP-20	Single Pole				1156	26 47 27.6	94 20 00.7	Paddy Field/Private Land			
54						49	1156						
55	AP-6/5	SP-21	Single Pole				1205	26 47 29.1	94 20 01.4	Paddy Field/Private Land			
56						50	1205						
57	AP-6/6	SP-22	Single Pole				1255	26 47 30.6	94 20 02.1	Paddy Field/Private Land			
58						50	1255						
59	AP-6/7	SP-23	Single Pole				1305	26 47 32.1	94 20 02.8	Paddy Field/Private Land			
60						49	1305						
61	AP-6/8	SP-24	Single Pole				1354	26 47 33.6	94 20 03.5	Paddy Field/Private Land			
62						50	1354						


 जि. गणेश स्वरोप, सहायक अभियन्ता
 G. GANESH SWAROOP, ASSTT. ENGINEER
 पावरग्रिड, एन.ई.आर.वि.एस.आइ.वि.टी.यक
 POWERGRID, NEARPSIP, TEOK



63	AP-7	FP-3	Four Pole	77°31'47"	1404	26 47 35.1	94 20 04.2	Road Crossing
64					43	1404		
65	AP-7/1	SP-25	Single Pole		1447	26 47 34.9	94 20 05.8	Tea Garden
66					48	1447		
67	AP-7/2	SP-26	Single Pole		1495	26 47 34.7	94 20 07.5	Tea Garden
68					48	1495		
69	AP-7/3	SP-27	Single Pole		1543	26 47 34.5	94 20 09.2	Tea Garden
70					50	1543		
71	AP-7/4	SP-28	Single Pole		1593	26 47 34.2	94 20 11.0	Tea Garden
72					50	1593		
73	AP-7/5	SP-29	Single Pole		1643	26 47 34.0	94 20 12.8	Tea Garden
74					49	1643		
75	AP-7/6	SP-30	Single Pole		1692	26 47 33.8	94 20 14.6	Tea Garden
76					50	1692		
77	AP-7/7	SP-31	Single Pole		1742	26 47 33.6	94 20 16.3	Tea Garden
78					50	1742		
79	AP-7/8	SP-32	Single Pole		1792	26 47 33.4	94 20 18.1	Tea Garden
80					50	1792		
81	AP-7/9	SP-33	Single Pole		1842	26 47 33.2	94 20 20.0	Tea Garden
82					49	1842		
83	AP-7/10	SP-34	Single Pole		1891	26 47 32.9	94 20 21.7	Paddy Field/Private Land
84					50	1891		
85	AP-7/11	SP-35	Single Pole		1941	26 47 32.7	94 20 23.5	Paddy Field/Private Land
86					50	1941		
87	AP-7/12	SP-36	Single Pole		1991	26 47 32.5	94 20 25.3	Paddy Field/Private Land
88					50	1991		
89	AP-7/13	SP-37	Single Pole		2041	26 47 32.3	94 20 27.1	Paddy Field/Private Land
90					50	2041		
91	AP-8	FP-4	Four Pole	68°31'28"	2091	26 47 32.1	94 20 28.9	Village Road
92					42	2091		
93	AP-8/1	SP-38	Single Pole		2133	26 47 30.8	94 20 29.6	Village Road
94					43	2133		
95	AP-8/2	SP-39	Single Pole		2176	26 47 29.6	94 20 30.2	Village Road
96					40	2176		
97	AP-8/3	SP-40	Single Pole		2216	26 47 28.4	94 20 30.9	Village Road
98					43	2216		
99	AP-9	FP-5	Four Pole	94°46'48"	2239	26 47 27.2	94 20 31.6	Road Crossing
100					33	2239		
101	AP-9/1	SP-41	Single Pole		2292	26 47 27.7	94 20 32.6	Paddy Field/Private Land
102					38	2292		
103	AP-9/2	SP-42	Single Pole		2330	26 47 28.3	94 20 33.8	Paddy Field/Private Land
104					36	2330		
105	AP-10	DP-5	Double Pole	45°38'51"	2366	26 47 28.9	94 20 35.0	Paddy Field/Private Land
106					48	2366		
107	AP-10/1	SP-43	Single Pole		2414	26 47 28.6	94 20 36.7	Paddy Field/Private Land
108					49	2414		
109	AP-10/2	SP-44	Single Pole		2463	26 47 28.4	94 20 38.4	Paddy Field/Private Land
110					50	2463		
111	AP-10/3	SP-45	Single Pole		2513	26 47 28.1	94 20 40.2	Paddy Field/Private Land
112					49	2513		
113	AP-10/4	SP-46	Single Pole		2562	26 47 27.9	94 20 42.0	Paddy Field/Private Land
114					49	2562		
115	AP-10/5	SP-47	Single Pole		2611	26 47 27.6	94 20 43.7	Paddy Field/Private Land
116					49	2611		
117	AP-10/6	SP-48	Single Pole		2660	26 47 27.4	94 20 45.5	Paddy Field/Private Land
118					50	2660		
119	AP-10/7	SP-49	Single Pole		2710	26 47 27.1	94 20 47.2	Paddy Field/Private Land
120					50	2710		
121	AP-10/8	SP-50	Single Pole		2760	26 47 26.9	94 20 49.0	Paddy Field/Private Land
122					49	2760		
123	AP-10/9	SP-51	Single Pole		2809	26 47 26.6	94 20 50.8	Paddy Field/Private Land
124					49	2809		
125	AP-10/10	SP-52	Single Pole		2858	26 47 26.4	94 20 52.5	Paddy Field/Private Land
126					49	2858		
127	AP-10/11	SP-53	Single Pole		2907	26 47 26.2	94 20 54.3	Paddy Field/Private Land
128					50	2907		
129	AP-10/12	SP-54	Single Pole		2957	26 47 25.9	94 20 56.1	Paddy Field/Private Land
130					50	2957		
131	AP-11	DP-6	Double Pole	32°46'19"	3007	26 47 25.7	94 20 57.9	Paddy Field/Private Land
132					47	3007		
133	AP-11/1	SP-55	Single Pole		3054	26 47 24.8	94 20 59.3	Paddy Field/Private Land
134					49	3054		
135	AP-12	DP-7	Double Pole	59°63'37"	3103	26 47 23.9	94 21 00.7	Paddy Field/Private Land

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G. GANESH SWAROOP, ASSTT. ENGINEER
पावरग्रिड, एन.ई.आर.पि.एस.आइ.पि.टीयक
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136					44	3103							
137	AP-12/1	SP-56	Single Pole			3147	26 47 24.6	94 21 02.2		Paddy Field/Private Land			
138					45	3147							
139	AP-12/2	SP-57	Single Pole			3192	26 47 25.2	94 21 03.6		Paddy Field/Private Land			
140					46	3192							
141	AP-13	DP-8	Double Pole	12°71'23"		3238	26 47 25.9	94 21 05.1		Road Crossing			
142					43	3238							
143	AP-13/1	SP-58	Single Pole			3281	26 47 26.9	94 21 06.3		Paddy Field/Private Land			
144					49	3281							
145	AP-13/2	SP-59	Single Pole			3330	26 47 27.9	94 21 07.6		Paddy Field/Private Land			
146					47	3330							
147	AP-13/3	SP-60	Single Pole			3377	26 47 28.9	94 21 08.9		Paddy Field/Private Land			
148					47	3377							
149	AP-13/4	SP-61	Single Pole			3424	26 47 29.9	94 21 10.2		Paddy Field/Private Land			
150					45	3424							
151	AP-13/5	SP-62	Single Pole			3469	26 47 30.9	94 21 11.4		Paddy Field/Private Land			
152					49	3469							
153	AP-13/6	SP-63	Single Pole			3518	26 47 31.9	94 21 12.7		Paddy Field/Private Land			
154					49	3518							
155	AP-13/7	SP-64	Single Pole			3567	26 47 32.9	94 21 14.1		Paddy Field/Private Land			
156					47	3567							
157	AP-14	DP-9	Double Pole	26°32'41"		3614	26 47 33.9	94 21 15.4		Paddy Field/Private Land			
158					51	3614							
159	AP-14/1	SP-65	Single Pole			3665	26 47 34.5	94 21 17.1		Paddy Field/Private Land			
160					48	3665							
161	AP-14/2	SP-66	Single Pole			3713	26 47 35.1	94 21 18.7		Paddy Field/Private Land			
162					48	3713							
163	AP-14/3	SP-67	Single Pole			3761	26 47 35.7	94 21 20.3		Paddy Field/Private Land			
164					48	3761							
165	AP-14/4	SP-68	Single Pole			3809	26 47 36.3	94 21 22.0		Paddy Field/Private Land			
166					49	3809							
167	AP-14/5	SP-69	Single Pole			3858	26 47 36.8	94 21 23.6		Paddy Field/Private Land			
168					49	3858							
169	AP-14/6	SP-70	Single Pole			3907	26 47 37.4	94 21 25.2		Paddy Field/Private Land			
170					48	3907							
171	AP-14/7	SP-71	Single Pole			3955	26 47 38.0	94 21 26.9		Paddy Field/Private Land			
172					48	3955							
173	AP-14/8	SP-72	Single Pole			4003	26 47 38.6	94 21 28.5		Paddy Field/Private Land			
174					48	4003							
175	AP-14/9	SP-73	Single Pole			4051	26 47 39.1	94 21 30.1		Paddy Field/Private Land			
176					49	4051							
177	AP-14/10	SP-74	Single Pole			4100	26 47 39.7	94 21 31.8		Paddy Field/Private Land			
178					49	4100							
179	AP-14/11	SP-75	Single Pole			4149	26 47 40.3	94 21 33.4		Paddy Field/Private Land			
180					49	4149							
181	AP-14/12	SP-76	Single Pole			4198	26 47 40.9	94 21 35.0		Paddy Field/Private Land			
182					49	4198							
183	AP-14/13	SP-77	Single Pole			4247	26 47 41.4	94 21 36.7		Paddy Field/Private Land			
184					49	4247							
185	AP-14/14	SP-78	Single Pole			4296	26 47 42.0	94 21 38.3		Paddy Field/Private Land			
186					48	4296							
187	AP-14/15	SP-79	Single Pole			4344	26 47 42.6	94 21 40.0		Paddy Field/Private Land			
188					48	4344							
189	AP-15	DP-10	Double Pole	18°62'52"		4392	26 47 43.2	94 21 41.6		Paddy Field/Private Land			
190					46	4392							
191	AP-15/1	SP-80	Single Pole			4438	26 47 44.2	94 21 42.8		Paddy Field/Private Land			
192					45	4438							
193	AP-16	DP-11	Double Pole	41°46'29"		4483	26 47 45.2	94 21 43.9		Paddy Field/Private Land			
194					48	4483							
195	AP-16/1	SP-81	Single Pole			4531	26 47 45.4	94 21 45.6		Tea Garden			
196					50	4531							
197	AP-16/2	SP-82	Single Pole			4581	26 47 45.7	94 21 47.4		Tea Garden			
198					46	4581							
199	AP-17	FP-6	Four Pole			4627	26 47 45.9	94 21 49.1		Road Crossing			
200					36	4627							
201	AP-18	DP-12	Double Pole	08°83'35"		4663	26 47 47.0	94 21 49.5		Road			
202					27	4663							
203	AP-19	FP-7	Four Pole	91°26'14"		4690	26 47 47.8	94 21 49.5		Katcha Road			
204					47	4690							
205	AP-19/1	SP-83	Single Pole			4737	26 47 47.8	94 21 51.2		Katcha Road			
206					49	4737							
207	AP-19/2	SP-84	Single Pole			4786	26 47 47.8	94 21 53.0		Katcha Road			
208					46	4786							

जि.मि.लक्ष्म
 G. GANESH SWAROOP, ASSTT. ENGINEER
 पावरग्रिड, एन.ई.आर.पि.एस.आइ.पि.टीयक
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209	AP-20	FP-8	Four Pole	78°43'56"	4832	26 47 47.8	94 21 54.7	Paddy Field/Private Land
210					41	4832		
211	AP-20/1	SP-85	Single Pole		4873	26 47 48.9	94 21 55.5	Paddy Field/Private Land
212					49	4873		
213	AP-20/2	SP-86	Single Pole		4922	26 47 50.2	94 21 56.4	Paddy Field/Private Land
214					49	4922		
215	AP-20/3	SP-87	Single Pole		4971	26 47 51.6	94 21 57.4	Paddy Field/Private Land
216					50	4971		
217	AP-20/4	SP-88	Single Pole		5021	26 47 52.9	94 21 58.4	Paddy Field/Private Land
218					50	5021		
219	AP-20/5	SP-89	Single Pole		5071	26 47 54.3	94 21 59.3	Paddy Field/Private Land
220					49	5071		
221	AP-20/6	SP-90	Single Pole		5120	26 47 55.6	94 22 00.3	Paddy Field/Private Land
222					49	5120		
223	AP-20/7	SP-91	Single Pole		5169	26 47 57.0	94 22 01.3	Paddy Field/Private Land
224					50	5169		
225	AP-20/8	SP-92	Single Pole		5219	26 47 58.3	94 22 02.2	Paddy Field/Private Land
226					49	5219		
227	AP-20/9	SP-93	Single Pole		5268	26 47 59.6	94 22 03.2	Paddy Field/Private Land
228					50	5268		
229	AP-20/10	SP-94	Single Pole		5318	26 48 01.0	94 22 04.2	Paddy Field/Private Land
230					49	5318		
231	AP-20/11	SP-95	Single Pole		5367	26 48 02.3	94 22 05.1	Paddy Field/Private Land
232					49	5367		
233	AP-20/12	SP-96	Single Pole		5416	26 48 03.7	94 22 06.1	Paddy Field/Private Land
234					50	5416		
235	AP-20/13	SP-97	Single Pole		5466	26 48 05.0	94 22 07.1	Paddy Field/Private Land
236					49	5466		
237	AP-20/14	SP-98	Single Pole		5515	26 48 06.4	94 22 08.0	Paddy Field/Private Land
238					49	5515		
239	AP-20/15	SP-99	Single Pole		5564	26 48 07.7	94 22 09.0	Paddy Field/Private Land
240					50	5564		
241	AP-20/16	SP-100	Single Pole		5614	26 48 09.0	94 22 10.0	Paddy Field/Private Land
242					49	5614		
243	AP-20/17	SP-101	Single Pole		5663	26 48 10.4	94 22 10.9	Paddy Field/Private Land
244					49	5663		
245	AP-21	DP-13	Double Pole	52°71'29"	5712	26 48 11.7	94 22 11.9	Paddy Field/Private Land
246					42	5712		
247	AP-21/1	SP-102	Single Pole		5754	26 48 11.8	94 22 13.4	Paddy Field/Private Land
248					50	5754		
249	AP-21/2	SP-103	Single Pole		5804	26 48 11.9	94 22 15.2	Paddy Field/Private Land
250					47	5804		
251	AP-22	DP-14	Double Pole	06°46'38"	5851	26 48 11.9	94 22 16.9	Paddy Field/Private Land
252					42	5851		
253	AP-22/1	SP-104	Single Pole		5893	26 48 11.8	94 22 18.4	Paddy Field/Private Land
254					48	5893		
255	AP-22/2	SP-105	Single Pole		5941	26 48 11.6	94 22 20.2	Paddy Field/Private Land
256					46	5941		
257	AP-22/3	SP-106	Single Pole		5987	26 48 11.4	94 22 21.8	Paddy Field/Private Land
258					49	5987		
259	AP-22/4	SP-107	Single Pole		6036	26 48 11.2	94 22 23.6	Paddy Field/Private Land
260					50	6036		
261	AP-22/5	SP-108	Single Pole		6086	26 48 11.0	94 22 25.4	Paddy Field/Private Land
262					49	6086		
263	AP-22/6	SP-109	Single Pole		6135	26 48 10.8	94 22 27.1	Paddy Field/Private Land
264					49	6135		
265	AP-22/7	SP-110	Single Pole		6184	26 48 10.6	94 22 28.9	Paddy Field/Private Land
266					49	6184		
267	AP-22/8	SP-111	Single Pole		6233	26 48 10.4	94 22 30.7	Paddy Field/Private Land
268					49	6233		
269	AP-22/9	SP-112	Single Pole		6282	26 48 10.2	94 22 32.4	Paddy Field/Private Land
270					49	6282		
271	AP-22/10	SP-113	Single Pole		6331	26 48 10.0	94 22 34.2	Paddy Field/Private Land
272					49	6331		
273	AP-22/11	DP-15	Double Pole		6380	26 48 09.8	94 22 36.0	Village Road
274					50	6380		
275	AP-22/12	SP-114	Single Pole		6430	26 48 09.6	94 22 37.7	Paddy Field/Private Land
276					49	6430		
277	AP-22/13	SP-115	Single Pole		6479	26 48 09.3	94 22 39.5	Paddy Field/Private Land
278					49	6479		
279	AP-22/14	SP-116	Single Pole		6528	26 48 09.1	94 22 41.3	Paddy Field/Private Land
280					49	6528		
281	AP-22/15	SP-117	Single Pole		6577	26 48 08.9	94 22 43.0	Paddy Field/Private Land

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G. GANESH SWAROOP, ASSTT. ENGINEER
पावरग्रिड, एन.ई.आर.पि.एस.आइ.पि.टीयक
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282					49	6577					
283	AP-22/16	SP-118	Single Pole			6626	26 48 08.7	94 22 44.8		Paddy Field/Private Land	
284					49	6626					
285	AP-22/17	SP-119	Single Pole			6675	26 48 08.5	94 22 46.6		Paddy Field/Private Land	
286					48	6675					
287	AP-22/18	SP-120	Single Pole			6723	26 48 08.3	94 22 48.3		Paddy Field/Private Land	
288					49	6723					
289	AP-22/19	SP-121	Single Pole			6772	26 48 08.1	94 22 50.0		Paddy Field/Private Land	
290					49	6772					
291	AP-22/20	SP-122	Single Pole			6821	26 48 07.9	94 22 51.8		Paddy Field/Private Land	
292					48	6821					
293	AP-22/21	SP-123	Single Pole			6869	26 48 07.7	94 22 53.5		Paddy Field/Private Land	
294					49	6869					
295	AP-22/22	SP-124	Single Pole			6918	26 48 07.5	94 22 55.3		Paddy Field/Private Land	
296					50	6918					
297	AP-23	DP-16	Double Pole	45°34'42"		6968	26 48 07.3	94 22 57.1		Paddy Field/Private Land	
298					51	6968					
299	AP-23/1	SP-125	Single Pole			7019	26 48 08.1	94 22 58.8		Paddy Field/Private Land	
300					50	7019					
301	AP-23/2	SP-126	Single Pole			7069	26 48 08.8	94 23 00.4		Paddy Field/Private Land	
302					50	7069					
303	AP-23/3	SP-127	Single Pole			7119	26 48 09.5	94 23 02.0		Paddy Field/Private Land	
304					50	7119					
305	AP-24	FP-9	Four Pole	81°62'18"		7169	26 48 10.3	94 23 03.6		Village Road	
306					42	7169					
307	AP-24/1	SP-128	Single Pole			7211	26 48 11.6	94 23 03.5		Paddy Field/Private Land	
308					40	7211					
309	AP-24/2	DP-17	Double Pole			7251	26 48 12.9	94 23 03.3		Paddy Field/Private Land	
310					40	7251					
311	AP-24/3	SP-129	Single Pole			7291	26 48 14.2	94 23 03.2		Paddy Field/Private Land	
312					41	7291					
313	AP-24/4	SP-130	Single Pole			7332	26 48 15.5	94 23 03.1		Paddy Field/Private Land	
314					42	7332					
315	AP-24/5	SP-131	Single Pole			7374	26 48 16.8	94 23 03.0		Katcha Road	
316					41	7374					
317	AP-25	FP-10	Four Pole	84°09'57"		7415	26 48 18.2	94 23 02.9		Paddy Field/Private Land	
318					50	7415					
319	AP-25/1	SP-132	Single Pole			7465	26 48 18.9	94 23 04.4		Paddy Field/Private Land	
320					48	7465					
321	AP-25/2	SP-133	Single Pole			7513	26 48 19.7	94 23 06.0		Paddy Field/Private Land	
322					50	7513					
323	AP-25/3	SP-134	Single Pole			7563	26 48 20.4	94 23 07.6		Paddy Field/Private Land	
324					50	7563					
325	AP-25/4	SP-135	Single Pole			7613	26 48 21.2	94 23 09.2		Paddy Field/Private Land	
326					50	7613					
327	AP-25/5	SP-136	Single Pole			7663	26 48 22.0	94 23 10.7		Paddy Field/Private Land	
328					50	7663					
329	AP-25/6	SP-137	Single Pole			7713	26 48 22.8	94 23 12.3		Paddy Field/Private Land	
330					50	7713					
331	AP-26	DP-18	Double Pole	03°37'48"		7763	26 48 23.5	94 23 13.9		Road Crossing	
332					42	7763					
333	AP-26/1	SP-138	Single Pole			7805	26 48 24.1	94 23 15.3		Tea Garden	
334					45	7805					
335	AP-26/2	SP-139	Single Pole			7850	26 48 24.6	94 23 16.8		Paddy Field/Private Land	
336					49	7850					
337	AP-26/3	SP-140	Single Pole			7899	26 48 25.2	94 23 18.4		Paddy Field/Private Land	
338					48	7899					
339	AP-27	DP-19	Double Pole	14°7'58"		7947	26 48 25.8	94 23 20.0		Paddy Field/Private Land	
340					45	7947					
341	AP-27/1	SP-141	Single Pole			7992	26 48 26.8	94 23 21.2		Paddy Field/Private Land	
342					46	7992					
343	AP-27/2	SP-142	Single Pole			8038	26 48 27.8	94 23 22.4		Paddy Field/Private Land	
344					48	8038					
345	AP-27/3	SP-143	Single Pole			8086	26 48 28.9	94 23 23.7		Paddy Field/Private Land	
346					49	8086					
347	AP-27/4	SP-144	Single Pole			8135	26 48 29.9	94 23 25.0		Paddy Field/Private Land	
348					48	8135					
349	AP-27/5	SP-145	Single Pole			8183	26 48 31.0	94 23 26.3		Paddy Field/Private Land	
350					48	8183					
351	AP-27/6	SP-146	Single Pole			8231	26 48 32.0	94 23 27.6		Paddy Field/Private Land	
352					49	8231					
353	AP-27/7	SP-147	Single Pole			8280	26 48 33.1	94 23 28.9		Paddy Field/Private Land	
354					49	8280					

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पावरग्रिड, एन.ई.आर.पि.एस.आइ.पि.टीयक
POWERGRID, NEAPSIP, TEOK



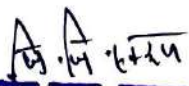
355	AP-27/8	SP-148	Single Pole		49	8329	26 48 34.2	94 23 30.2	Paddy Field/Private Land		
356						8329					
357	AP-27/9	SP-149	Single Pole		50	8378	26 48 35.2	94 23 31.5	Paddy Field/Private Land		
358						8378					
359	AP-27/10	SP-150	Single Pole		50	8428	26 48 36.3	94 23 32.9	Paddy Field/Private Land		
360						8428					
361	AP-27/11	DP-20	Double Pole		49	8478	26 48 37.4	94 23 34.2	Paddy Field/Private Land		
362						8478					
363	AP-27/12	SP-151	Single Pole		49	8527	26 48 38.5	94 23 35.5	Paddy Field/Private Land		
364						8527					
365	AP-27/13	SP-152	Single Pole		49	8576	26 48 39.6	94 23 36.8	Paddy Field/Private Land		
366						8576					
367	AP-27/14	SP-153	Single Pole		49	8625	26 48 40.7	94 23 38.2	Paddy Field/Private Land		
368						8625					
369	AP-27/15	SP-154	Single Pole		49	8674	26 48 41.7	94 23 39.5	Paddy Field/Private Land		
370						8674					
371	AP-27/16	SP-155	Single Pole		49	8723	26 48 42.8	94 23 40.8	Paddy Field/Private Land		
372						8723					
373	AP-27/17	SP-156	Single Pole		50	8772	26 48 43.9	94 23 42.1	Paddy Field/Private Land		
374						8772					
375	AP-27/18	SP-157	Single Pole		48	8822	26 48 45.0	94 23 43.4	Paddy Field/Private Land		
376						8822					
377	AP-28	DP-21	Double Pole	44°37'28"	42	8870	26 48 46.0	94 23 44.7	Katcha Road		
378						8870					
379	AP-28/1	SP-158	Single Pole		42	8912	26 48 46.0	94 23 46.2	Paddy Field/Private Land		
380						8912					
381	AP-28/2	SP-159	Single Pole		47	8954	26 48 46.0	94 23 47.8	Paddy Field/Private Land		
382						8954					
383	AP-28/3	SP-160	Single Pole		47	9001	26 48 45.9	94 23 49.5	Paddy Field/Private Land		
384						9001					
385	AP-29	DP-22	Double Pole	45°34'55"	32	9048	26 48 45.9	94 23 51.2	Paddy Field/Private Land		
386						9048					
387	AP-29/1	SP-161	Single Pole		36	9080	26 48 45.0	94 23 51.8	Paddy Field/Private Land		
388						9080					
389	AP-29/2	SP-162	Single Pole		36	9116	26 48 44.1	94 23 52.6	Paddy Field/Private Land		
390						9116					
391	AP-30	DP-23	Double Pole	44°22'13"	40	9152	26 48 43.1	94 23 53.3	Paddy Field/Private Land		
392						9152					
393	AP-30/1	SP-163	Single Pole		42	9192	26 48 43.1	94 23 54.7	Paddy Field/Private Land		
394						9192					
395	AP-30/2	SP-164	Single Pole		40	9234	26 48 43.1	94 23 56.3	Paddy Field/Private Land		
396						9234					
397	AP-30/3	SP-165	Single Pole		41	9274	26 48 43.0	94 23 57.7	Paddy Field/Private Land		
398						9274					
399	AP-30/4	SP-166	Single Pole		47	9315	26 48 43.0	94 23 59.2	Paddy Field/Private Land		
400						9315					
401	AP-30/5	DP-24	Double Pole		49	9362	26 48 42.9	94 24 00.9	Paddy Field/Private Land		
402						9362					
403	AP-30/6	SP-167	Single Pole		45	9411	26 48 42.9	94 24 02.7	Paddy Field/Private Land		
404						9411					
405	AP-30/7	SP-168	Single Pole		47	9456	26 48 42.8	94 24 04.3	Paddy Field/Private Land		
406						9456					
407	AP-30/8	SP-169	Single Pole		43	9503	26 48 42.7	94 24 06.0	Paddy Field/Private Land		
408						9503					
409	AP-30/9	SP-170	Single Pole		50	9546	26 48 42.7	94 24 07.5	Paddy Field/Private Land		
410						9546					
411	AP-30/10	SP-171	Single Pole		47	9596	26 48 42.6	94 24 09.3	Paddy Field/Private Land		
412						9596					
413	AP-30/11	SP-172	Single Pole		46	9643	26 48 42.6	94 24 11.1	Paddy Field/Private Land		
414						9643					
415	AP-30/12	SP-173	Single Pole		46	9689	26 48 42.5	94 24 12.7	Paddy Field/Private Land		
416						9689					
417	AP-30/13	DP-25	Double Pole		49	9735	26 48 42.5	94 24 14.4	Paddy Field/Private Land		
418						9735					
419	AP-30/14	SP-174	Single Pole		47	9784	26 48 42.4	94 24 16.2	Paddy Field/Private Land		
420						9784					
421	AP-31	DP-26	Double Pole	02°41'61"	43	9831	26 48 42.3	94 24 17.9	Nallah Crossing		
422						9831					
423	AP-31/1	DP-27	Double Pole		47	9874	26 48 42.1	94 24 19.4	Paddy Field/Private Land		
424						9874					
425	AP-31/2	SP-175	Single Pole		46	9921	26 48 41.9	94 24 21.1	Paddy Field/Private Land		
426						9921					
427	AP-31/3	SP-176	Single Pole			9967	26 48 41.7	94 24 22.8	Paddy Field/Private Land		

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जि. गणेश स्वरूप, सहायक अभियन्ता
G. GANESH SWAROOP, ASST. ENGINEER
पावरग्रिड, एन.ई.आर.पि.एस.आइ.पि.टीयक
POWERGRID, NEARPSIP, TEOK

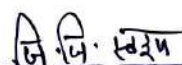


501	AP-34/8	SP-209	Single Pole			11740	26 48 45.7	94 25 22.7	Paddy Field/Private Land			
502						50	11740					
503	AP-34/9	SP-210	Single Pole			11790	26 48 46.8	94 25 24.0	Paddy Field/Private Land			
504						48	11790					
505	AP-34/10	SP-211	Single Pole			11838	26 48 47.9	94 25 25.2	Paddy Field/Private Land			
506						49	11838					
507	AP-34/11	SP-212	Single Pole			11887	26 48 49.0	94 25 26.5	Paddy Field/Private Land			
508						49	11887					
509	AP-34/12	SP-213	Single Pole			11936	26 48 50.0	94 25 27.8	Paddy Field/Private Land			
510						50	11936					
511	AP-34/13	SP-214	Single Pole			11986	26 48 51.1	94 25 29.1	Paddy Field/Private Land			
512						49	11986					
513	AP-34/14	SP-215	Single Pole			12035	26 48 52.2	94 25 30.4	Paddy Field/Private Land			
514						47	12035					
515	AP-34/15	SP-216	Single Pole			12082	26 48 53.3	94 25 31.7	Paddy Field/Private Land			
516						49	12082					
517	AP-34/16	SP-217	Single Pole			12131	26 48 54.4	94 25 32.9	Paddy Field/Private Land			
518						49	12131					
519	AP-34/17	SP-218	Single Pole			12180	26 48 55.5	94 25 34.2	Paddy Field/Private Land			
520						49	12180					
521	AP-34/18	SP-219	Single Pole			12229	26 48 56.6	94 25 35.5	Paddy Field/Private Land			
522						48	12229					
523	AP-34/19	SP-220	Single Pole			12277	26 48 57.7	94 25 36.8	Paddy Field/Private Land			
524						50	12277					
525	AP-35	DP-32	Double Pole	01*32*28"		12327	26 48 58.8	94 25 38.1	Paddy Field/Private Land			
526						49	12327					
527	AP-35/1	SP-221	Single Pole			12376	26 48 59.9	94 25 39.4	Paddy Field/Private Land			
528						49	12376					
529	AP-35/2	SP-222	Single Pole			12425	26 49 01.0	94 25 40.7	Paddy Field/Private Land			
530						50	12425					
531	AP-35/3	SP-223	Single Pole			12475	26 49 02.1	94 25 42.0	Paddy Field/Private Land			
532						50	12475					
533	AP-35/4	SP-224	Single Pole			12525	26 49 03.2	94 25 43.3	Paddy Field/Private Land			
534						50	12525					
535	AP-35/5	SP-225	Single Pole			12575	26 49 04.3	94 25 44.6	Paddy Field/Private Land			
536						48	12575					
537	AP-35/6	SP-226	Single Pole			12623	26 49 05.4	94 25 45.9	Paddy Field/Private Land			
538						49	12623					
539	AP-35/7	SP-227	Single Pole			12672	26 49 06.5	94 25 47.2	Paddy Field/Private Land			
540						50	12672					
541	AP-35/8	SP-228	Single Pole			12722	26 49 07.6	94 25 48.5	Paddy Field/Private Land			
542						50	12722					
543	AP-35/9	SP-229	Single Pole			12772	26 49 08.7	94 25 49.8	Paddy Field/Private Land			
544						49	12772					
545	AP-35/10	SP-230	Single Pole			12821	26 49 09.8	94 25 51.1	Paddy Field/Private Land			
546						50	12821					
547	AP-35/11	SP-231	Single Pole			12871	26 49 10.9	94 25 52.4	Paddy Field/Private Land			
548						50	12871					
549	AP-35/12	SP-232	Single Pole			12921	26 49 12.0	94 25 53.7	Paddy Field/Private Land			
550						50	12921					
551	AP-35/13	SP-233	Single Pole			12971	26 49 13.1	94 25 55.0	Paddy Field/Private Land			
552						50	12971					
553	AP-35/14	SP-234	Single Pole			13021	26 49 14.2	94 25 56.3	Paddy Field/Private Land			
554						50	13021					
555	AP-35/15	SP-235	Single Pole			13071	26 49 15.3	94 25 57.7	Paddy Field/Private Land			
556						50	13071					
557	AP-35/16	SP-236	Single Pole			13121	26 49 16.5	94 25 59.0	Paddy Field/Private Land			
558						50	13121					
559	AP-35/17	SP-237	Single Pole			13171	26 49 17.6	94 26 00.3	Paddy Field/Private Land			
560						50	13171					
561	AP-35/18	SP-238	Single Pole			13221	26 49 18.7	94 26 01.6	Paddy Field/Private Land			
562						49	13221					
563	AP-35/19	SP-239	Single Pole			13270	26 49 19.8	94 26 02.9	Paddy Field/Private Land			
564						50	13270					
565	AP-35/20	SP-240	Single Pole			13320	26 49 20.9	94 26 04.2	Paddy Field/Private Land			
566						49	13320					
567	AP-35/21	SP-241	Single Pole			13369	26 49 22.0	94 26 05.5	Tea Garden			
568						46	13369					
569	AP-36	DP-33	Double Pole	25*12*62"		13415	26 49 23.3	94 26 06.3	Tea Garden			
570						48	13415					
571	AP-36/1	SP-242	Single Pole			13463	26 49 24.6	94 26 07.2	Tea Garden			
572						49	13463					
573	AP-36/2	SP-243	Single Pole			13512	26 49 26.0	94 26 08.1	Tea Garden			


 जि. गणेश स्वरोप, सहायक अभियन्ता
 G. GANESH SWAROOP, ASSTT. ENGINEER
 पावरग्रिड, एन.ई.आर.पि.एस.आइ.पि.टी.यक
 POWERGRID, NERPSIP, TEOK



574					50	13512						
575	AP-36/3	SP-244	Single Pole			13562	26 49 27.4	94 26 09.0	Tea Garden			
576					50	13562						
577	AP-36/4	SP-245	Single Pole			13612	26 49 28.8	94 26 09.9	Tea Garden			
578					49	13612						
579	AP-36/5	SP-246	Single Pole			13661	26 49 30.2	94 26 10.8	Tea Garden			
580					50	13661						
581	AP-36/6	SP-247	Single Pole			13711	26 49 31.6	94 26 11.7	Tea Garden			
582					50	13711						
583	AP-36/7	SP-248	Single Pole			13761	26 49 33.0	94 26 12.6	Road Crossing			
584					43	13761						
585	AP-36/8	DP-34	Double Pole			13804	26 49 34.2	94 26 13.4	Tea Garden			
586					49	13804						
587	AP-36/9	SP-249	Single Pole			13853	26 49 35.6	94 26 14.3	Tea Garden			
588					48	13853						
589	AP-36/10	SP-250	Single Pole			13901	26 49 36.9	94 26 15.1	Tea Garden			
590					45	13901						
591	AP-36/11	SP-251	Single Pole			13946	26 49 38.2	94 26 15.9	Tea Garden			
592					46	13946						
593	AP-36/12	SP-252	Single Pole			13992	26 49 39.5	94 26 16.8	Tea Garden			
594					45	13992						
595	AP-36/13	SP-253	Single Pole			14037	26 49 40.7	94 26 17.6	Road Crossing			
596					47	14037						
597	AP-36/14	SP-254	Single Pole			14084	26 49 42.1	94 26 18.4	Tea Garden			
598					47	14084						
599	AP-36/15	SP-255	Single Pole			14131	26 49 43.4	94 26 19.3	Tea Garden			
600					46	14131						
601	AP-37	DP-35	Double Pole	48°58'51"		14177	26 49 44.8	94 26 19.1	Tea Garden			
602					47	14177						
603	AP-37/1	SP-256	Single Pole			14224	26 49 46.4	94 26 19.0	Tea Garden			
604					49	14224						
605	AP-37/2	SP-257	Single Pole			14273	26 49 47.9	94 26 18.8	Tea Garden			
606					50	14273						
607	AP-37/3	SP-258	Single Pole			14323	26 49 49.6	94 26 18.6	Tea Garden			
608					49	14323						
609	AP-37/4	SP-259	Single Pole			14372	26 49 51.1	94 26 18.4	Katcha Road			
610					50	14372						
611	AP-37/5	SP-260	Single Pole			14422	26 49 52.7	94 26 18.3	Tea Garden			
612					49	14422						
613	AP-37/6	SP-261	Single Pole			14471	26 49 54.3	94 26 18.1	Tea Garden			
614					50	14471						
615	AP-37/7	SP-262	Single Pole			14521	26 49 55.9	94 26 17.9	Tea Garden			
616					50	14521						
617	AP-37/8	SP-263	Single Pole			14571	26 49 57.5	94 26 17.7	Tea Garden			
618					49	14571						
619	AP-37/9	SP-264	Single Pole			14620	26 49 59.1	94 26 17.6	Tea Garden			
620					50	14620						
621	AP-37/10	SP-265	Single Pole			14670	26 50 00.7	94 26 17.4	Tea Garden			
622					50	14670						
623	AP-37/11	SP-266	Single Pole			14720	26 50 02.3	94 26 17.2	Tea Garden			
624					50	14720						
625	AP-38	DP-36	Double Pole	02°09'33"		14770	26 50 03.9	94 26 17.0	Tea Garden			
626					43	14770						
627	AP-38/1	SP-267	Single Pole			14813	26 50 05.3	94 26 17.0	Tea Garden			
628					46	14813						
629	AP-38/2	SP-268	Single Pole			14859	26 50 06.8	94 26 17.0	Tea Garden			
630					41	14859						
631	AP-38/3	SP-269	Single Pole			14900	26 50 08.1	94 26 17.0	Tea Garden			
632					43	14900						
633	AP-38/4	SP-270	Single Pole			14943	26 50 09.5	94 26 17.0	Tea Garden			
634					41	14943						
635	AP-39	DP-37	Double Pole	12°21'54"		14984	26 50 10.8	94 26 17.0	NH Crossing with UG Cabling			
636					34	14984						
637	AP-40	DP-38	Double Pole	08°19'22"		15018	26 50 11.9	94 26 16.7	Substation land			
638					42	15018						
639	AP-40/1	SP-271	Single Pole			15060	26 50 13.1	94 26 16.1	Substation land			
640					44	15060						
641	AP-40/2	SP-272	Single Pole			15104	26 50 14.4	94 26 15.4	Substation land			
642					43	15104						
643	AP-40/3	SP-273	Single Pole			15147	26 50 15.7	94 26 14.8	Substation land			
644					44	15147						
645	AP-40/4	SP-274	Single Pole			15191	26 50 17.0	94 26 14.2	Existing 33/11KV Teok S/s			
646					39	15191						


 जि गणेश स्वरोप, सहायक अभियन्ता
 G. GANESH SWAROOP, ASSTT. ENGINEER
 पावरग्रिड, एन.ई.आर.पि.एस.आइ.पि.टीयक
 POWERGRID, NERPSIP, TEOK



647	AP-41	FP-11	Four Pole	95°14'12"	15230	26 50 18.2	94 26 13.6	Paddy Land
648					47	15230		
649	AP-42	DP-39	Double Pole	22°19'56"	15277	26 50 19.6	94 26 12.9	Paddy Land
650					49	15277		
651	AP-43	DP-40	Double Pole(Double Circuit)	16°11'21"	15326	26 50 20.7	94 26 11.6	Paddy Land
652					46	15326		
653	AP-44	DP-41	Double Pole(Double Circuit)	28°23'65"	15372	26 50 22.0	94 26 10.8	Paddy Land
654					47	15372		
655	AP-44/1	DP-42	Double Pole(Double Circuit)		15419	26 50 23.0	94 26 09.5	Paddy Land
656					45	15419		
657	AP-44/2	DP-43	Double Pole(Double Circuit)		15464	26 50 24.0	94 26 08.3	Paddy Land
658					45	15464		
659	AP-44/3	DP-44	Double Pole(Double Circuit)		15509	26 50 25.0	94 26 07.1	Paddy Land
660					47	15509		
661	AP-44/4	DP-45	Double Pole(Double Circuit)		15556	26 50 26.0	94 26 05.8	Paddy Land
662					43	15556		
663	AP-44/5	DP-46	Double Pole(Double Circuit)		15599	26 50 27.0	94 26 04.7	Paddy Land
664					35	15599		
665	AP-45	DP-47	Double Pole(Double Circuit)	52°51'06"	15634	26 50 27.7	94 26 03.7	Paddy Land
666					50	15634		
667	AP-45/1	DP-48	Double Pole(Double Circuit)		15684	26 50 29.3	94 26 03.8	Paddy Land
668					50	15684		
669	AP-45/2	DP-49	Double Pole(Double Circuit)		15734	26 50 30.9	94 26 03.9	Paddy Land
670					46	15734		
671	AP-45/3	DP-50	Double Pole		15780	26 50 32.4	94 26 03.9	Paddy Land
672					46	15780		
673	AP-45/4	DP-51	Double Pole(Double Circuit)		15826	26 50 33.9	94 26 04.0	Paddy Land
674					49	15826		
675	AP-45/5	DP-52	Double Pole(Double Circuit)		15875	26 50 35.5	94 26 04.0	Paddy Land
676					50	15875		
677	AP-45/6	DP-53	Double Pole(Double Circuit)		15925	26 50 37.1	94 26 04.1	Paddy Land
678					46	15925		
679	AP-45/7	DP-54	Double Pole(Double Circuit)		15971	26 50 38.6	94 26 04.2	Paddy Land
680					49	15971		
681	AP-45/8	DP-55	Double Pole(Double Circuit)		16020	26 50 40.2	94 26 04.2	Paddy Land
682					46	16020		
683	AP-45/9	DP-56	Double Pole(Double Circuit)		16066	26 50 41.7	94 26 04.3	Paddy Land
684					50	16066		
685	AP-45/10	DP-57	Double Pole(Double Circuit)		16116	26 50 43.3	94 26 04.4	Paddy Land
686					46	16116		
687	AP-45/11	DP-58	Double Pole(Double Circuit)		16162	26 50 44.8	94 26 04.4	Paddy Land
688					43	16162		
689	AP-45/12	DP-59	Double Pole(Double Circuit)		16205	26 50 46.2	94 26 04.5	Paddy Land
690					43	16205		
691	AP-45/13	DP-60	Double Pole(Double Circuit)		16248	26 50 47.6	94 26 04.5	Paddy Land
692					37	16248		
693	AP-46	DP-61	Double Pole(Double Circuit)	30°24'41"	16285	26 50 48.8	94 26 04.6	Paddy Land
694					42	16285		
695	AP-46/1	DP-62	Double Pole(Double Circuit)		16327	26 50 50.1	94 26 04.1	Paddy Land
696					49	16327		
697	AP-47	DP-63	Double Pole(Double Circuit)	14°01'54"	16376	26 50 51.5	94 26 03.3	Paddy Land
698					45	16376		
699	AP-47/1	DP-64	Double Pole(Double Circuit)		16421	26 50 52.9	94 26 02.8	Paddy Land
700					50	16421		
701	AP-48	DP-65	Double Pole(Double Circuit)	11°19'63"	16471	26 50 54.5	94 26 02.5	Paddy Land
702					46	16471		
703	AP-49	DP-66	Double Pole(Double Circuit)	87°21'32"	16517	26 50 56.0	94 26 02.6	Paddy Land
704					47	16517		
705	AP-50	DP-67	Double Pole(Double Circuit)	08°6'22"	16564	26 50 55.9	94 26 04.3	Paddy Land
706					52	16564		
707	AP-51	DP-68	Double Pole(Double Circuit)	05°6'45"	16616	26 50 55.4	94 26 06.1	Paddy Land
708					50	16616		
709	AP-52	DP-69	Double Pole(Double Circuit)	16°19'38"	16666	26 50 55.3	94 26 07.9	Tea Garden Area
710					50	16666		
711	AP-53	DP-70	Double Pole(Double Circuit)	09°19'22"	16716	26 50 54.7	94 26 09.6	Tea Garden Area
712					47	16716		
713	AP-53/1	DP-71	Double Pole(Double Circuit)		16763	26 50 54.7	94 26 11.3	Tea Garden Area
714					47	16763		
715	AP-53/2	DP-72	Double Pole(Double Circuit)		16810	26 50 54.7	94 26 13.0	Tea Garden Area
716					47	16810		
717	AP-53/3	DP-73	Double Pole(Double Circuit)		16857	26 50 54.7	94 26 14.7	Tea Garden Area
718					50	16857		
719	AP-53/4	DP-74	Double Pole(Double Circuit)		16907	26 50 54.8	94 26 16.5	Tea Garden Area

जि.अ.स्व५

जि गणेश स्वरूप, सहायक अभियन्ता
G. GANESH SWAROOP, ASSTT. ENGINEER

एम्प्लॉयड एन्ड ई आर पि एम् आर पि टीयक



720					50	16907						
721	AP-53/5	DP-75	Double Pole(Double Circuit)			16957	26 50 54.8	94 26 18.3	Tea Garden Area			
722					50	16957						
723	AP-53/6	DP-76	Double Pole(Double Circuit)			17007	26 50 54.8	94 26 20.1	Tea Garden Area			
724					47	17007						
725	AP-53/7	DP-77	Double Pole(Double Circuit)			17054	26 50 54.8	94 26 21.8	Tea Garden Area			
726					36	17054						
727	AP-53/8	DP-78	Double Pole(Double Circuit)			17090	26 50 54.9	94 26 23.1	Tea Garden Area			
728					36	17090						
729	AP-54	DP-79	Double Pole(Double Circuit)	07°52'05"		17126	26 50 54.9	94 26 24.4	Road Crossing			
730					20	17126						
731	AP-54/1	DP-80	Double Pole(Double Circuit)			17146	26 50 54.8	94 26 25.1	Paddy Land			
732					50	17146						
733	AP-54/2	DP-81	Double Pole(Double Circuit)			17196	26 50 54.9	94 26 26.9	Paddy Land			
734					47	17196						
735	AP-54/3	DP-82	Double Pole(Double Circuit)			17243	26 50 55.0	94 26 28.6	Paddy Land			
736					47	17243						
737	AP-54/4	DP-83	Double Pole(Double Circuit)			17290	26 50 55.1	94 26 30.3	Paddy Land			
738					44	17290						
739	AP-54/5	DP-84	Double Pole(Double Circuit)			17334	26 50 55.1	94 26 31.9	Paddy Land			
740					44	17334						
741	AP-55	DP-85	Double Pole(Double Circuit)	48°47'33"		17378	26 50 55.2	94 26 33.5	Paddy Land			
742					47	17378						
743	AP-55/1	DP-86	Double Pole(Double Circuit)			17425	26 50 54.2	94 26 34.8	Paddy Land			
744					49	17425						
745	AP-55/2	DP-87	Double Pole(Double Circuit)			17474	26 50 53.2	94 26 36.2	Paddy Land			
746					47	17474						
747	AP-55/3	DP-88	Double Pole(Double Circuit)			17521	26 50 52.2	94 26 37.5	Paddy Land			
748					49	17521						
749	AP-55/4	DP-89	Double Pole(Double Circuit)			17570	26 50 51.2	94 26 38.9	Paddy Land			
750					47	17570						
751	AP-55/5	DP-90	Double Pole(Double Circuit)			17617	26 50 50.2	94 26 40.2	Paddy Land			
752					49	17617						
753	AP-55/6	DP-91	Double Pole(Double Circuit)			17666	26 50 49.2	94 26 41.6	Paddy Land			
754					43	17666						
755	AP-56	DP-92	Double Pole(Double Circuit)	28°25'14"		17709	26 50 48.3	94 26 42.8	Paddy Land			
756					49	17709						
757	AP-56/1	DP-93	Double Pole(Double Circuit)			17758	26 50 47.8	94 26 44.5	Paddy Land			
758					49	17758						
759	AP-56/2	DP-94	Double Pole(Double Circuit)			17807	26 50 47.3	94 26 46.2	Paddy Land			
760					47	17807						
761	AP-56/3	DP-95	Double Pole(Double Circuit)			17854	26 50 46.8	94 26 47.8	Paddy Land			
762					46	17854						
763	AP-57	FP-12	Four Pole(Double Circuit)	44°25'35"		17900	26 50 46.0	94 26 49.2	Paddy Land			
764					49	17900						
765	AP-57/1	DP-96	Double Pole(Double Circuit)			17949	26 50 46.4	94 26 50.9	Paddy Land			
766					49	17949						
767	AP-57/2	DP-97	Double Pole(Double Circuit)			17998	26 50 46.9	94 26 52.6	Paddy Land			
768					49	17998						
769	AP-57/3	DP-98	Double Pole(Double Circuit)			18047	26 50 47.3	94 26 54.3	Paddy Land			
770					48	18047						
771	AP-57/4	DP-99	Double Pole(Double Circuit)			18095	26 50 47.7	94 26 56.0	Paddy Land			
772					49	18095						
773	AP-57/5	DP-100	Double Pole(Double Circuit)			18144	26 50 48.1	94 26 57.7	Paddy Land			
774					49	18144						
775	AP-57/6	DP-101	Double Pole(Double Circuit)			18193	26 50 48.5	94 26 59.4	Paddy Land			
776					43	18193						
777	AP-58	DP-102	Double Pole(Double Circuit)	45°56'21"		18236	26 50 48.9	94 27 00.9	Paddy Land			
778					44	18236						
779	AP-58/1	DP-103	Double Pole(Double Circuit)			18280	26 50 48.4	94 27 02.4	Paddy Land			
780					44	18280						
781	AP-58/2	DP-104	Double Pole(Double Circuit)			18324	26 50 47.9	94 27 03.9	Paddy Land			
782					38	18324						
783	AP-58/3	DP-105	Double Pole(Double Circuit)			18362	26 50 47.5	94 27 05.2	Paddy Land			
784					39	18362						
785	AP-59	DP-106	Double Pole(Double Circuit)	32°18'42"		18401	26 50 47.0	94 27 06.5	Paddy Land			
786					49	18401						
787	AP-59/1	DP-107	Double Pole(Double Circuit)			18450	26 50 45.8	94 27 07.6	Paddy Land			
788					48	18450						
789	AP-59/2	DP-108	Double Pole(Double Circuit)			18498	26 50 44.6	94 27 08.8	Paddy Land			
790					46	18498						
791	AP-59/3	DP-109	Double Pole(Double Circuit)			18544	26 50 43.4	94 27 09.8	Tea Garden Area			
792					48	18544						

जि. जि. स्वयं

जि गणेश स्वरोप, सहायक अभीबन्ता
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पावरग्रिड, एन.ई.आर.पि.एस.आइ.पि.टीयक
POWERGRID, NERPSIP, TEOK



793	AP-59/4	DP-110	Double Pole(Double Circuit)			18592	26 50 42.2	94 27 10.9	Tea Garden Area			
794					48	18592						

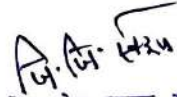
जि.गि.स्व.रूप

अभिषेक

जि गणेश स्वरूप, सहायक अभियन्ता
G. GANESH SWAROOP, ASSTT. ENGINEER
पावरग्रिड, एन.ई.आर.पि.एस.आइ.पि.टीयक
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795	AP-59/5	DP-111	Double Pole(Double Circuit)			18640	26 50 41.0	94 27 12.1	Tea Garden Area		
796					47	18640					
797	AP-59/6	DP-112	Double Pole(Double Circuit)			18687	26 50 39.9	94 27 13.1	Tea Garden Area		
798					48	18687					
799	AP-59/7	DP-113	Double Pole(Double Circuit)			18735	26 50 38.7	94 27 14.2	Tea Garden Area		
800					48	18735					
801	AP-59/8	DP-114	Double Pole(Double Circuit)			18783	26 50 37.5	94 27 15.3	Tea Garden Area		
802					49	18783					
803	AP-60	DP-115	Double Pole(Double Circuit)	78°71'39"		18832	26 50 36.3	94 27 16.5	Tea Garden Area		
804					55	18832					
805	AP-60/1	DP-116	Double Pole(Double Circuit)			18887	26 50 36.9	94 27 18.3	Paddy Land		
806					50	18887					
807	AP-61	DP-117	Double Pole(Double Circuit)	28°23'43"		18937	26 50 37.5	94 27 20.0	Road Crossing		
808					43	18937					
809	AP-61/1	DP-118	Double Pole(Double Circuit)			18980	26 50 37.5	94 27 21.6	Tea Garden Area		
810					44	18980					
811	AP-61/2	DP-119	Double Pole(Double Circuit)			19024	26 50 37.5	94 27 23.2	Tea Garden Area		
812					45	19024					
813	AP-61/3	DP-120	Double Pole(Double Circuit)			19069	26 50 37.5	94 27 24.8	Paddy Land		
814					45	19069					
815	AP-61/4	DP-121	Double Pole(Double Circuit)			19114	26 50 37.5	94 27 26.4	Paddy Land		
816					44	19114					
817	AP-61/5	DP-122	Double Pole(Double Circuit)			19158	26 50 37.5	94 27 28.0	Paddy Land		
818					44	19158					
819	AP-61/6	DP-123	Double Pole(Double Circuit)			19202	26 50 37.3	94 27 29.6	Paddy Land		
820					44	19202					
821	AP-61/7	DP-124	Double Pole(Double Circuit)			19246	26 50 37.2	94 27 31.2	Paddy Land		
822					46	19246					
823	AP-61/8	DP-125	Double Pole(Double Circuit)			19292	26 50 37.1	94 27 32.9	Paddy Land		
824					45	19292					
825	AP-62	DP-126	Double Pole(Double Circuit)	26°31'56"		19337	26 50 37.0	94 27 34.5	Road Crossing		
826					22	19337					
827	AP-62/1	DP-127	Double Pole(Double Circuit)			19359	26 50 36.5	94 27 35.1	Private Land		
828					40	19359					
829	AP-62/2	DP-128	Double Pole(Double Circuit)			19399	26 50 35.9	94 27 36.4	Private Land		
830					26	19399					
831	AP-62/3	DP-129	Double Pole(Double Circuit)			19425	26 50 35.5	94 27 37.2	Private Land		
832					37	19425					
833	AP-63	DP-130	Double Pole(Double Circuit)	46°42'35"		19462	26 50 34.8	94 27 38.3	Private Land		
834					41	19462					
835	AP-63/1	DP-131	Double Pole(Double Circuit)			19503	26 50 35.2	94 27 39.7	Private Land		
836					47	19503					
837	AP-63/2	DP-132	Double Pole(Double Circuit)			19550	26 50 35.7	94 27 41.3	Private Land		
838					49	19550					
839	AP-64	DP-133	Double Pole(Double Circuit)	22°32'12"		19599	26 50 36.2	94 27 43.0	Private Land		
840					42	19599					
841	AP-64/1	DP-134	Double Pole(Double Circuit)			19641	26 50 36.0	94 27 44.5	Private Land		
842					41	19641					
843	AP-64/2	DP-135	Double Pole(Double Circuit)			19682	26 50 36.0	94 27 46.0	Private Land		
844					41	19682					
845	AP-65	DP-136	Double Pole(Double Circuit)	18°58'54"		19723	26 50 36.0	94 27 47.5	Private Land		
846					35	19723					
847	AP-66	DP-137	Double Pole(Double Circuit)	19°41'53"		19758	26 50 35.6	94 27 48.7	Private Land		
848					49	19758					
849	AP-67	DP-138	Double Pole(Double Circuit)	15°84'09"		19807	26 50 36.0	94 27 50.4	Private Land		
850					39	19807					
851	AP-67/1	DP-139	Double Pole(Double Circuit)			19846	26 50 36.8	94 27 51.5	Private Land		
852					33	19846					
853	AP-68	DP-140	Double Pole(Double Circuit)	89°61'28"		19879	26 50 37.5	94 27 52.4	Private Land		
854					34	19879					
855	AP-68/1	DP-141	Double Pole(Double Circuit)			19913	26 50 36.5	94 27 52.9	Private Land		
856					38	19913					
857	AP-69	DP-142	Double Pole(Double Circuit)	21°56'15"		19951	26 50 35.4	94 27 53.5	Private Land		
858					31	19951					
859	AP-70	DP-143	Double Pole(Double Circuit)	06°24'45"		19982	26 50 34.4	94 27 53.4	Private Land		
860					50	19982					
861	AP-70/1	DP-144	Double Pole(Double Circuit)			20032	26 50 32.8	94 27 53.7	Private Land		
862					44	20032					
863	AP-70/2	DP-145	Double Pole(Double Circuit)			20076	26 50 31.4	94 27 54.0	Private Land		
864					48	20076					
865	AP-70/3	DP-146	Double Pole(Double Circuit)			20124	26 50 29.9	94 27 54.5	Private Land		
866					44	20124					
867	AP-70/4	DP-147	Double Pole(Double Circuit)			20168	26 50 28.5	94 27 54.8	Private Land		


 जि गणेश स्वरूप, सहायक अभियन्ता
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 पावरग्रिड, एन.ई.आर.पि.एस.आड.पि.टीयन.
 POWERGRID, NERPSIP, TEOK






23	AP-5/10	SP-18	Single Pole				920m	26 50 48.5	94 27 57.8	Paddy Field/Private Land		
24	AP-6	DP-2	Double Pole	14°73'26"	46 m	0	966m	26 50 49.9	94 27 57.7	Paddy Field/Private Land		
25	AP-7	DP-3	Double Pole	32°09'78"	46 m	0	1012m	26 50 51.4	94 27 58.1	Paddy Field/Private Land		
26	AP-7/1	SP-19	Single Pole		44 m	0	1056m	26 50 52.3	94 27 59.3	Paddy Field/Private Land		
27	AP-7/2	SP-20	Single Pole		45 m	0	1101m	26 50 53.3	94 28 00.6	Paddy Field		
28	AP-7/3	SP-21	Single Pole		46 m	0	1147m	26 50 54.3	94 28 01.8	Paddy Field		
29	AP-7/4	SP-22	Single Pole		45 m	0	1192m	26 50 55.2	94 28 03.0	Paddy Field		
30	AP-7/5	SP-23	Single Pole		45 m	0	1237m	26 50 56.1	94 28 04.3	Paddy Field		
31	AP-7/6	SP-24	Single Pole		46 m	0	1283m	26 50 57.1	94 28 05.5	Paddy Field		
32	AP-7/7	SP-25	Single Pole		45 m	0	1328m	26 50 58.1	94 28 06.8	Paddy Field		
33	AP-7/8	SP-26	Single Pole		47 m	0	1375m	26 50 59.0	94 28 08.0	Paddy Field		
34	AP-7/9	SP-27	Single Pole		45 m	0	1420m	26 51 00.0	94 28 09.3	Paddy Field		
35	AP-7/10	SP-28	Single Pole		45 m	0	1465m	26 51 00.9	94 28 10.5	Paddy Field		
36	AP-7/11	SP-29	Single Pole		46 m	0	1511m	26 51 01.9	94 28 11.8	Paddy Field		
37	AP-8	FP-4	Four Pole	84°98'54"	43 m	0	1554m	26 51 02.9	94 28 12.9	Paddy Field		
38	AP-8/1	SP-30	Single Pole		46 m	0	1600m	26 51 02.3	94 28 14.4	Paddy Field		
39	AP-8/2	SP-31	Single Pole		46 m	0	1646m	26 51 01.7	94 28 15.9	Paddy Field		
40	AP-8/3	SP-32	Single Pole		46 m	0	1692m	26 51 01.1	94 28 17.4	Paddy Field		
41	AP-9	DP-4	Double Pole	10°46'19"	46 m	0	1738m	26 51 00.5	94 28 18.9	Paddy Field		
42	AP-9/1	SP-33	Single Pole		47 m	0	1785m	26 51 00.3	94 28 20.6	Paddy Field		
43	AP-9/2	SP-34	Single Pole		46 m	0	1831m	26 51 00.0	94 28 22.3	Paddy Field		
44	AP-9/3	SP-35	Single Pole		45 m	0	1876m	26 50 59.8	94 28 23.9	Paddy Field		
45	AP-9/4	SP-36	Single Pole		46 m	0	1922m	26 50 59.6	94 28 25.5	Paddy Field		
46	AP-9/5	SP-37	Single Pole		46 m	0	1968m	26 50 59.4	94 28 27.2	Paddy Field		
47	AP-9/6	SP-38	Single Pole		46 m	0	2014m	26 50 59.1	94 28 28.8	Paddy Field		
48	AP-9/7	SP-39	Single Pole		46 m	0	2060m	26 50 58.9	94 28 30.5	Paddy Field	11kv crossing	simulguri gaon
49	AP-9/8	SP-40	Single Pole		45 m	0	2105m	26 50 58.7	94 28 32.1	Paddy Field		
50	AP-10	DP-5	Double Pole	16°24'32"	47 m	0	2152m	26 50 58.4	94 28 33.8	Paddy Field		
51	AP-10/1	SP-41	Single Pole		45 m	0	2197m	26 50 58.5	94 28 35.4	Paddy Field	Road Crossing	simulguri gaon
52	AP-10/2	SP-42	Single Pole		45 m	0	2242m	26 50 58.5	94 28 37.1	Paddy Field		

Boonla (G.S)

Signature

श्री गणेश स्वरोप, सहायक अभियन्ता
 G. GANESH SWAROOP, ASSTT. ENGINEER
 नागरिक, एन.ई.आर.सि.एस.आइ.पि.डी.क



113	AP-21/2	SP-92	Single Pole			49 m	5074m	26 51 36.3	94 29 42.5	Village Road	
114	AP-21/3	SP-93	Single Pole			50m	5123m	26 51 37.8	94 29 42.9	Village Road	
115	AP-21/4	SP-94	Single Pole			50 m	5173m	26 51 39.4	94 29 43.4	Village Road	
116	AP-21/5	SP-95	Single Pole			50 m	5223m	26 51 41.0	94 29 43.9	Village Road	
117	AP-22	DP-15	Double Pole	16°84'24"		44 m	5273m	26 51 42.6	94 29 44.4	Paddy Field	
118	AP-22/1	SP-96	Single Pole			43 m	5317m	26 51 43.7	94 29 45.3	Paddy Field	
119	AP-22/2	SP-97	Single Pole			48 m	5360m	26 51 44.9	94 29 46.1	Paddy Field	
120	AP-22/3	SP-98	Single Pole			47 m	5408m	26 51 46.1	94 29 47.1	Paddy Field	
121	AP-22/4	SP-99	Single Pole			48 m	5455m	26 51 47.4	94 29 48.1	Paddy Field	
122	AP-22/5	SP-100	Single Pole			48 m	5503m	26 51 48.7	94 29 49.1	Paddy Field	
123	AP-22/6	SP-101	Single Pole			48 m	5551m	26 51 49.9	94 29 50.1	Paddy Field	
124	AP-22/7	SP-102	Single Pole			48 m	5599m	26 51 51.2	94 29 51.1	Paddy Field	
125	AP-22/8	SP-103	Single Pole			48 m	5647m	26 51 52.5	94 29 52.1	Paddy Field	
126	AP-22/9	SP-104	Single Pole			48 m	5695m	26 51 53.8	94 29 53.1	Paddy Field	
127	AP-22/10	SP-105	Single Pole			47 m	5743m	26 51 55.0	94 29 54.1	Paddy Field	
128	AP-22/11	SP-106	Single Pole			48 m	5790m	26 51 56.3	94 29 55.0	Paddy Field	
129	AP-22/12	SP-107	Single Pole			48 m	5838m	26 51 57.6	94 29 56.0	Paddy Field	
130	AP-22/13	SP-108	Single Pole			48 m	5886m	26 51 58.8	94 29 57.0	Paddy Field	
131	AP-22/14	SP-109	Single Pole			46 m	5934m	26 52 00.1	94 29 58.0	Paddy Field	11kv crossing
132	AP-23	DP-16	Double Pole	47°65'15"		44 m	5980m	26 52 01.4	94 29 59.0	Paddy Field	
133	AP-23/1	SP-110	Single Pole			45 m	6024m	26 52 02.8	94 29 59.0	Paddy Field	Village Road Crossing
134	AP-23/2	SP-111	Single Pole			46 m	6069m	26 52 04.2	94 29 58.9	Paddy Field	
135	AP-23/3	SP-112	Single Pole			44 m	6115m	26 52 05.7	94 29 58.8	Paddy Field	
136	AP-23/4	SP-113	Single Pole			45 m	6159m	26 52 07.2	94 29 58.7	Paddy Field	
137	AP-24	DP-17	Double Pole	44°46'25"		26 m	6204m	26 52 08.6	94 29 58.5	Paddy Field	
138	AP-25	DP-18	Double Pole	45°12'47"		43 m	6230m	26 52 09.30	94 29 59.10	Substation Area	
139	AP-26	FP-7	Four Pole	99°78'12"		11 m	6273m	26 52 10.7	94 29 59.1	Substation Area	
140		GANTRY	GANTRY				6284m	26 52 10.6	94 29 58.70	Existing 33KV Jhant S6	

Amit Kaur

वि. गणेश स्वरोप, सहायक अभियन्ता
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 पावरग्रिड, एम.ई.आर. वि. म.स. शा.स. वि. दीयक
 POWERGRID

POLE SCHEDULE

132KV S/S TEOK TO AMGURI (EXISTING) LINE

CLIENT: POWER GRID CORPORATION OF INDIA LIMITED

LOA Ref. No.: 1,CC-CS/94-NER/REW-3081/1/G10/CA-1/7117-Supply
 2,CC-CS/94-NER/REW-3081/1/G10/CA-1/7118-Services
 DMS-02

PACKAGE: ASM-

CONTRACTOR: M/S STERLING AND WILSON PVT.

PACKAGE:ASM- ASM-DMS-02

SL. No.	Angle Point	Loc. No	Pole Type	Extn.	Angle of Deviation	Span Length (m)	Cumm. Span (m)	Co-Ordinates		Description of Land	Crossing Details	Village Name	Remarks
								Latitude	Longitude				
		GANTRY	GANTRY					26 50 21.2	94 27 57.4	Teok S/s			
1	AP-1	SP-1	Single Pole			31		26 50 21.2	94 27 56.5	Substation Area			
2	AP-2	DP-1	Double pole		11°15'35"	63	31	26 50 20.2	94 27 56.5	NH Crossing			UG Cable
3	AP-3	DP-2	Double Pole		83°18'41"	50	94	26 50 18.2	94 27 56.6	Private Land			
4	AP-3/1	SP-2	Single Pole			50	144	26 50 18.1	94 27 58.4	Private Land	Nala Crossing	Kohapani	
5	AP-3/2	SP-3	Single Pole			50	194	26 50 17.9	942800.2	Private Land			
6	AP-3/2	SP-4	Single Pole			50	244	26 50 17.8	94 28 02.0	Paddy Field			
7	AP-3/3	SP-5	Single Pole			50	294	26 50 17.7	94 28 03.8	Paddy Field			
8	AP-3/4	SP-6	Single Pole			50	344	26 50 17.6	94 28 05.6	Paddy Field Village Road			
9	AP-3/5	SP-7	Single Pole			50	394	26 50 17.5	94 28 07.4	Paddy Field			
10	AP-3/6	SP-8	Single Pole			52	444	26 50 17.5	94 28 09.2	Private Land Pond			
11	AP-3/7	SP-9	Single Pole			52	496	26 50 17.3	94 28 11.1	Private Land/Residential			
12	AP-3/8	SP-10	Single Pole			52	548	26 50 17.1	94 28 13.0	Private Land/Residential			
13	AP-4	DP-3	Double Pole		12°33'05"	48	600	26 50 17.2	94 28 14.9	Private Land/Residential Village Road			
14	AP-4/1	SP-11	Single Pole			50	648	26 50 16.7	94 28 16.6	Private Land/Residential			
15	AP-4/2	SP-12	Single Pole			45	698	26 50 16.3	94 28 18.3	Tea Garden			
16	AP-4/3	SP-13	Single Pole			50	743	26 50 16.7	94 28 16.6	Tea Garden			
17	AP-4/4	SP-14	Single Pole			50	793	26 50 15.8	94 28 21.7	Tea Garden			
18	AP-5	DP-4	Double Pole		20°23'15"	50	841	26 50 15.5	94 28 23.4	Tea Garden			
19	AP-5/1	SP-15	Single Pole			50	891	26 50 15.5	94 28 25.2	Tea Garden			
20	AP-5/2	SP-16	Single Pole			48	941	26 50 15.5	94 28 27.0	Tea Garden Village Road			
21	AP-6	DP-5	Double Pole		13°18'10"	50	989	26 50 15.5	94 28 28.5	Paddy Field/Private Land			
22	AP-6/1	SP-17	Single Pole			50	1039	26 50 15.8	94 28 30.6	Paddy Field/Private Land			
23	AP-6/2	SP-18	Single Pole			50	1089	26 50 16.1	94 28 32.3	Paddy Field/Private Land Village Road			
24	AP-6/3	SP-19	Single Pole			50	1139	26 50 16.4	94 28 34.1	Paddy Field/Private Land			
25	AP-6/4	SP-20	Single Pole			50	1189	26 50 16.8	94 28 35.9	Paddy Field/Private Land			SP76 Pole
26	AP-6/5	SP-21	Single Pole			50	1239	26 50 17.1	94 28 37.1	Residential area	11KV Line Crossing	Hanhchara village	SP76 Pole
27	AP-6/6	SP-22	Single Pole			50	1289	26 50 17.4	94 28 39.4	Residential area			
28	AP-6/7	SP-23	Single Pole			50	1339	26 50 17.8	94 28 41.2	Residential area			
29	AP-6/8	SP-24	Single Pole			28	1389	26 50 18.1	94 28 43.0	Residential area Road Crossing			
30	AP-7	DP-6	Double Pole		16°33'05"	50	1417	26 50 18.3	94 28 44.0	Residential area			
31	AP-7/1	SP-25	Single Pole			50	1467	26 50 18.7	94 28 45.7	Residential area			
32	AP-7/2	SP-26	Single Pole			50	1517	26 50 19.1	94 28 47.5	Residential area			
33	AP-7/3	SP-27	Single Pole			50	1567	26 50 19.5	94 28 49.2	Residential area			
34	AP-7/4	SP-28	Single Pole			50	1617	26 50 19.9	94 28 51.0	Residential area Pond			
35	AP-7/5	SP-29	Single Pole			45	1667	26 50 20.3	94 28 52.7	Temple/Residential Area			
36	AP-7/6	SP-30	Single Pole			50	1712	26 50 20.6	94 28 44.3	Residential area Road crossing			
37	AP-7/7	SP-31	Single Pole			54	1762	26 50 21.0	94 28 56.1	Residential area			
38	AP-8	DP-7	Double Pole		35°51'00"	54	1816	26 50 21.4	94 28 58.0	Paddy Field			
39	AP-8/1	SP-32	Single Pole			54	1870	26 50 22.6	94 28 59.4	Paddy Field			
40	AP-8/2	SP-33	Double Pole			54	1924	26 50 23.9	94 29 00.8	Paddy Field			

Amit Raj

Amit Raj
 Site In-Charge
 STERLING & WILSON (P) LTD.
 ASM-DMS-02

Manish B. Kharadi

MANISH B. KHARADI, AMGURI ELECTRICAL SUB DIVISION
 पावरग्रिड, एन. ई. आर पी. एस. आई. पो, दियक
 POWERGRID, NERPSIP, TEOK
 AMGURI ELECTRICAL SUB DIVISION
 APDCI AMGURI

चन्द्र शेखर भाट्ट, ENGINEER
 CHANDRA SHEKHAR BHATT, ENGINEER
 ई. आर पी. एस. आई. पो, दियक
 POWERGRID, NERPSIP, TEOK

Nazira Aseem Nazira
 Nazira Aseem Nazira
 General Manager
 AMGURI ELECT-DIVISION
 APDCI-ASEEM NAZIRA

20/05/2017
 17.6.2017

सन्धु वारायण दे, उप महा प्र
 S. N. DEY, DY. GENERAL M
 पावरग्रिड, एन. ई. आर पी. एस. आई. पो
 POWERGRID, NERPSIP

41	AP-8/3	SP-34	Single Pole		54	1978	26 50 25.1	94 29 02.2	Paddy Field				
42	AP-8/4	SP-35	Single Pole		55	2032	26 50 26.4	94 29 03.6	Paddy Field				
43	AP-8/5	SP-36	Single Pole		55	2087	26 50 27.6	94 29 05.0	Paddy Field				
44	AP-8/6	SP-37	Single Pole		55	2133	26 50 28.9	94 29 06.4	Paddy Field				
45	AP-8/7	SP-38	Single Pole		55	2188	26 50 30.1	94 29 07.8	Paddy Field				
46	AP-9	DP-8	Double Pole	15°11'51"	51	2243	26 50 31.4	94 29 09.2	Paddy Field	11KV Line Crossing	Hanbchara village/Jhanji	SP76 Pole	
47	AP-9/1	SP-39	Single Pole		51	2294	26 50 32.6	94 29 10.5	Paddy Field			SP76 Pole	
48	AP-9/2	SP-40	Single Pole		50	2345	26 50 33.8	94 29 11.8	Paddy Field				
49	AP-9/3	SP-41	Single Pole		51	2395	26 50 34.9	94 29 13.1	Paddy Field				
50	AP-10	DP-9	Double Pole	14°19'03"	56	2446	26 50 36.1	94 29 14.4	Paddy Field				
51	AP-10/1	SP-42	Single Pole		55	2502	26 50 37.1	94 29 14.4	Paddy Field				
52	AP-10/2	SP-43	Single Pole		56	2557	26 50 38.2	94 29 17.6	Paddy Field				
53	AP-10/3	SP-44	Single Pole		56	2613	26 50 39.3	94 29 19.2	Paddy Field				
54	AP-10/4	SP-45	Single Pole		56	2669	26 50 40.3	94 29 20.9	Paddy Field				
55	AP-11	FP-1	Four pole	89°35'21"	51	2725	26 50 41.4	94 29 22.5	Paddy Field				
56	AP-11/1	SP-46	Single Pole		51	2776	26 50 40.6	94 29 24.2	Paddy Field				
57	AP-11/2	SP-47	Single Pole		51	2827	26 50 39.8	94 29 25.7	Paddy Field				
58	AP-12	DP-10	Double Pole	05°19'03"	112	2878	26 50 38.9	94 29 27.3		River Crossing	Jhanji River	Jhanji	SP76 Pole
59	AP-13	DP-11	Double Pole	02°10'06"	50+	2990	26 50 36.8	94 29 30.6					SP76 Pole
60	AP-13/1	SP-48	Single Pole		50	3040	26 50 35.7	94 29 32.0	Paddy Field				
61	AP-13/2	SP-49	Single Pole		51	3090	26 50 34.6	94 29 33.3	Paddy Field				
62	AP-13/3	SP-50	Single Pole		51	3141	26 50 33.5	94 29 34.7	Paddy Field				
63	AP-13/4	SP-51	Single Pole		51	3192	26 50 32.5	94 29 36.1	Paddy Field				
64	AP-13/5	SP-52	Single Pole		50	3243	26 50 31.4	94 29 37.5	Paddy Field				
65	AP-13/6	SP-53	Single Pole		50	3293	26 50 30.4	94 29 38.9	Paddy Field				
66	AP-13/7	SP-54	Single Pole		50	3343	26 50 29.4	94 29 40.3	Paddy Field				
67	AP-13/8	SP-55	Single Pole		50	3393	26 50 28.3	94 29 41.7	Paddy Field				
68	AP-14	DP-12	Double Pole	26°32'25"	52	3443	26 50 27.3	94 28 43.1	Paddy Field				
69	AP-14/1	SP-56	Single Pole		52	3495	26 50 25.9	94 28 44.2	Paddy Field				
70	AP-14/2	SP-57	Single Pole		52	3547	26 50 24.5	94 29 45.3	Paddy Field	Road crossing/11 KV line	Cheenu Ali		SP76 Pole
71	AP-14/3	SP-58	Single Pole		53	3599	26 50 23.2	94 29 46.5	Stone crusher plant				SP76 Pole
72	AP-14/4	SP-59	Single Pole		50	3652	26 50 21.7	94 29 47.5	Paddy Field				
73	AP-14/5	SP-60	Single Pole		52	3702	26 50 20.4	94 29 48.6	Paddy Field				
74	AP-14/6	SP-61	Single Pole		52	3754	26 50 19.0	94 29 49.7	Paddy Field				
75	AP-14/7	SP-62	Single Pole		52	3806	26 50 17.7	94 29 50.8	Paddy Field				
76	AP-14/8	SP-63	Single Pole		52	3858	26 50 16.3	94 29 51.9	Paddy Field				
77	AP-15	DP-13	Double Pole	16°19'05"	52	3910	26 50 15.0	94 29 53.1	Paddy Field				
78	AP-15/1	SP-64	Single Pole		52	3962	26 50 13.6	94 29 54.1	Paddy Field				
79	AP-15/2	SP-65	Single Pole		52	4014	26 50 12.2	94 29 55.2	Paddy Field				
80	AP-15/3	SP-66	Single Pole		52	4066	26 50 10.8	94 29 56.3	Paddy Field				
81	AP-15/4	SP-67	Single Pole		52	4118	26 50 09.4	94 29 57.4	Paddy Field				
82	AP-15/5	SP-68	Single Pole		52	4170	26 50 08.1	94 29 58.5	Paddy Field				
83	AP-15/6	SP-69	Single Pole		45	4222	26 50 06.7	94 29 59.6	Paddy Field				
84	AP-15/7	SP-70	Single Pole		53	4277	26 50 05.5	94 30 00.6	Paddy Field				
85	AP-15/8	SP-71	Single Pole		55	4320	26 50 04.1	94 30 01.7	Paddy Field	11 KV Line Crossing	Gadhali Bazar		SP76 Pole
86	AP-16	DP-14	Double Pole	10°59'22"	52	4375	26 50 02.7	94 30 02.9	Paddy Field				
87	AP-16/1	SP-72	Single Pole		52	4427	26 50 01.4	94 30 04.1	Paddy Field				
88	AP-16/2	SP-73	Single Pole		52	4479	26 50 00.0	94 30 05.62	Paddy Field				
89	AP-16/3	SP-74	Single Pole			4531	26 49 58.6	94 30 06.3	Paddy Field				

Amit Raj
Site In-Charge
STERLING & WILSON (P) LTD.
DMS-02

Manish B. Kharadi
MANISH B. KHARADI, ENGINEER
पावरग्रिड, एन. ई. आर. पी. एस. आई. पी, रियक
POWERGRID, NERPSIP, TEOK

Chandra Shekhar Bhatt
CHANDRA SHEKHAR BHATT, ENGINEER
पावरग्रिड, एन. ई. आर. पी. एस. आई. पी, रियक
POWERGRID, NERPSIP, TEOK

Regional Engineer
REGIONAL ENGINEER
ELECTRICAL SUB DIVISION
APDCI AMGIIRA

सम्भु नारायण दे, उप महा प्रबंधक
S. N. DEY, DY. GENERAL MANAGER
पावरग्रिड, एन. ई. आर. पी. एस. आई. पी.
POWERGRID, NERPSIP, TEOK

Amit General Manager
NAZIRA ELECT-DIVISION
APDCI-ASE-NAZIRA

राज 17.6.20

138	AP-22/4	SP-117	Single Pole			37	7094	26 48 58.5	94 31 01.6	Residential Area			
139	AP-23	DP-20	Double Pole	09°45'31"		14	7131	26 48 59.0	94 31 02.8	Residential Area			SP76 Pole
140	AP-24	DP-21	Double Pole	02°03'01"			7145	26 48 59.2	94 31 03.3	Residential Area	Highway Crossing	Amguri Honda Motor	SP76 Pole
141	AP-24/1	SP-118	Single Pole				7187	26 48 59.7	94 31 04.6	Residential Area/Honda Motor			
142	AP-25	DP-22	Double Pole	29°48'42"		50	7237	26 49 00.4	94 31 06.3	Residential Area			
143	AP-25/1	SP-119	Single Pole				7287	26 49 00.4	94 31 08.1	Residential Area			
144	AP-25/2	SP-120	Single Pole				7337	26 49 00.8	94 31 09.9	Paddy Field			SP76 Pole
145	AP-25/3	SP-121	Single Pole			50	7390	26 49 01.1	94 31 11.8	Paddy Field	11 KV Line Crossing	Amguri	SP76 Pole
146	AP-25/4	SP-122	Single Pole			50	7440	26 49 01.3	94 31 13.6	Paddy Field			
147	AP-26	DP-23	Double Pole	35°18'48"		48	7490	26 49 02.7	94 31 15.1	Paddy Field			
148	AP-26/1	SP-123	Single Pole				7538	26 49 01.1	94 31 17.0	Paddy Field	132 KV HT line	Amguri	
149	AP-27	DP-24	Double Pole	29°38'25"		45	7586	26 49 00.7	94 31 18.7	Paddy Field			
150	AP-27/1	SP-124	Single Pole			50	7633	26 49 00.9	94 31 20.3	Paddy Field			SP76 Pole
151	AP-27/2	SP-125	Single Pole			45	7681	26 49 02.2	94 31 22.1	Paddy Field	11 KV Line Crossing	Amguri	SP76 Pole
152	AP-27/3	SP-126	Single Pole			45	7726	26 49 01.5	94 31 23.7	Paddy Field			
153	AP-27/4	SP-127	Single Pole			50	7771	26 49 01.8	94 31 25.3	Paddy Field			
154	AP-28	DP-25	Double Pole	19°23'42"		56	7821	26 49 02.1	94 31 26.9	Residential Area	Road Crossing		SP76 Pole
155	AP-28/1	SP-128	Single Pole			57	7877	26 49 01.9	94 31 28.9	Residential Area	11 KV Line Crossing/Road	Amguri	SP76 Pole
156	AP-28/2	SP-129	Single Pole			56	7934	26 49 01.7	94 31 30.9	Residential Area			
157	AP-29	DP-26	Double Pole	25°20'56"		48	7990	26 49 01.5	94 31 32.9	Residential Area			
158	AP-29/1	SP-130	Single Pole			50	8038	26 49 01.3	94 31 34.4	Residential Area			
159	AP-30	DP-27	Double Pole	22°47'32"		42	8088	26 49 01.0	94 31 35.8	Field			
160	AP-31	DP-28	Double Pole	10°02'42"		51	8130	26 49 00.3	94 31 37.1	Field	Railway Crossing	Amguri	UG Cable SP76 Pole
161	AP-31/1	SP-131	Single Pole			50	8181	26 48 59.6	94 31 38.8	Residential Area	Road Crossing	Amguri	SP76 Pole
162	AP-32	DP-29	Double Pole	08°14'01"			8231	26 49 59.0	94 31 40.5	Sub-station Area			

Amit Raj

Amit Raj
Site In-Charge
STERLING & WILSON (P) LTD.
ASM-DMS-02

Ramesh
SUB-DIVISIONAL ENGINEER
AMGURI ELECTRICAL SUB DIVISION
APDCI AMGURI

Manish B. Kharadi
15/06/2020

मनीष बी. खराड़ी, अभियन्ता
MANISH B. KHARADI, ENGINEER
पावरग्रिड, एन. ई. आर. पी. एस. आई. पी, टियक
POWERGRID, NERPSIP, TEOK

Chandra Shekhar Bhatt
15/06/2020

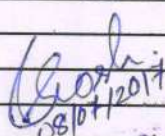
चन्द्र शेखर भट्ट, अभियन्ता
CHANDRA SHEKHAR BHATT, ENGINEER
पावरग्रिड, एन. ई. आर. पी. एस. आई. पी, टियक
POWERGRID, NERPSIP, TEOK

Abdul Aziz
17/06/2020
ABDUL AZIZ
SUB-DIVISIONAL ENGINEER
AMGURI ELECTRICAL SUB DIVISION
APDCI AMGURI

S. N. Dey
17.6.20

सम्भु नारायण दे, उप महा प्रबंधक
S. N. DEY, DY. GENERAL MANAGER
पावरग्रिड, एन. ई. आर. पी. एस. आई. पी, टियक
POWERGRID, NERPSIP, TEOK

Name of Package:		ASM-DMS-02			
Name of Work:		33kV New Line from Proposed 132kV/33kV Sarupathar Substation to Existing 33/11kV Barapathar Substation			
SL NO	Pole From	Route 1 Pole To	Span (Meter)	Description of Land	Nature of damage
1	GANTRY	SP-1	49 m	Proposed 132kV/33kV Sarupathar S/s	
2	SP-1	SP-2	49 m	Substation Area	
3	SP-2	DP-1	50 m	Substation Area	
4	DP-1	SP-3	50 m	Paddy Field	
5	SP-3	SP-4	49 m	Paddy Field	
6	SP-4	SP-5	47 m	Paddy Field	
7	SP-5	SP-6	49 m	Paddy Field	
8	SP-6	SP-7	49 m	Paddy Field	
9	SP-7	DP-2	50 m	Paddy Field	
10	DP-2	DP-3	50 m	Paddy Field	
11	DP-3	DP-4	50 m	Paddy Field	
12	DP-4	SP-8	39 m	Paddy Field	
13	SP-8	DP-5	32 m	Paddy Field	
14	DP-5	SP-9	47 m	Road	
15	SP-9	SP-10	50 m	Road	
16	SP-10	SP-11	43 m	Road	
17	SP-11	SP-12	53 m	Road	
18	SP-12	SP-13	48 m	Road	
19	SP-13	SP-14	44 m	Road	
20	SP-14	DP-6	39 m	Road	
21	DP-6	SP-15	50 m	Road	
22	SP-15	SP-16	48 m	Road	
23	SP-16	SP-17	48 m	Road	
24	SP-17	SP-18	45 m	Road	
25	SP-18	SP-19	45 m	Road	
26	SP-19	SP-20	53 m	Road	
27	SP-20	SP-21	45 m	Road	
28	SP-21	SP-22	48 m	Road	
29	SP-22	SP-23	48 m	Road	
30	SP-23	SP-24	48 m	Road	
31	SP-24	SP-25	45 m	Road	
32	SP-25	SP-26	48 m	Road	
33	SP-26	DP-7	49 m	Road	
34	DP-7	SP-27	50 m	Road	
35	SP-27	SP-28	44 m	Road	
36	SP-28	SP-29	50 m	Road	
37	SP-29	SP-30	47 m	Road	
38	SP-30	SP-31	40 m	Road	
39	SP-31	SP-32	37 m	Road	
40	SP-32	SP-33	37 m	Road	
41	SP-33	SP-34	34 m	Road	
42	SP-34	SP-35	47 m	Road	
43	SP-35	SP-36	47 m	Road	
44	SP-36	DP-8	47 m	Road	
45	DP-8	SP-37	46 m	Road	
46	SP-37	SP-38	49 m	Road	
47	SP-38	SP-39	46 m	Road	
48	SP-39	SP-40	46 m	Road	
49	SP-40	SP-41	47 m	Road	
50	SP-41	SP-42	49 m	Road	
51	SP-42	SP-43	34 m	Road	
52	SP-43	DP-9	40 m	Road	


 08/07/2017
 सुमन घोष / Suman Ghosh
 (विद्युत) / Field Engineer (Elect.)
 क्षेत्र अभियंता (विद्युत) / Field Engineer (Elect.)
 एन. डी. आर. पि. एस. आई. पि. / NERPSIP
 पावरग्रिड / Powergrid
 सरुपथार / Sarupathar



Name of Package:		ASM-DMS-02			
Name of Work:		33kV New Line from Proposed 132kV/33kV Sarupathar Substation to Existing 33/11kV Barapathar Substation			
SL NO	Pole From	Route 1 Pole To	Span (Meter)	Description of Land	Nature of damage
53	DP-9	SP-44	40 m	Road	
54	SP-44	SP-45	47 m	Road	
55	SP-45	SP-46	47 m	Road	
56	SP-46	SP-47	50 m	Road	
57	SP-47	SP-48	47 m	Road	
58	SP-48	SP-49	46 m	Road	
59	SP-49	DP-10	37 m	Road	
60	DP-10	DP-11	36 m	Road	
61	DP-11	SP-50	50 m	Road	
62	SP-50	SP-51	46 m	Road	
63	SP-51	SP-52	46 m	Road	
64	SP-52	SP-53	49 m	Road	
65	SP-53	SP-54	46 m	Road	
66	SP-54	SP-55	50 m	Road	
67	SP-55	SP-56	44 m	Road	
68	SP-56	DP-12	41 m	Road	
69	DP-12	SP-57	50 m	Road	
70	SP-57	SP-58	38 m	Road	
71	SP-58	DP-13	34 m	Road	
72	DP-13	SP-59	45 m	Road	
73	SP-59	SP-60	48 m	Road	
74	SP-60	SP-61	46 m	Road	
75	SP-61	SP-62	50 m	Road	
76	SP-62	SP-63	48 m	Road	
77	SP-63	SP-64	46 m	Road	
78	SP-64	SP-65	50 m	Road	
79	SP-65	SP-66	45 m	Road	
80	SP-66	DP-14	36 m	Road	
81	DP-14	SP-67	50 m	Road	
82	SP-67	SP-68	47 m	Road	
83	SP-68	SP-69	50 m	Road	
84	SP-69	SP-70	50 m	Road	
85	SP-70	SP-71	49 m	Road	
86	SP-71	SP-72	50 m	Road	
87	SP-72	SP-73	45 m	Road	
88	SP-73	SP-74	50 m	Road	
89	SP-74	SP-75	50 m	Road	
90	SP-75	SP-76	45 m	Road	
91	SP-76	SP-77	42 m	Road	
92	SP-77	DP-15	41 m	Road	
93	DP-15	SP-78	48 m	Road	
94	SP-78	SP-79	44 m	Road	
95	SP-79	SP-80	39 m	Road	
96	SP-80	SP-81	39 m	Road	
97	SP-81	SP-82	32 m	Road	
98	SP-82	SP-83	19 m	Road	
99	SP-83	SP-84	43 m	Road	
100	SP-84	SP-85	47 m	Road	
101	SP-85	SP-86	45 m	Road	
102	SP-86	SP-87	42 m	Road	
103	SP-87	SP-88	49 m	Road	
104	SP-88	SP-89	50 m	Road	

Tree cutting may be required

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Name of Package:		ASM-DMS-02			
Name of Work:		33kV New Line from Proposed 132kV/33kV Sarupathar Substation to Existing 33/11kV Barapathar Substation			
SL NO	Pole From	Route 1 Pole To	Span (Meter)	Description of Land	Nature of damage
105	SP-89	DP-16	49 m	Road	
106	DP-16	SP-90	50 m	Road	
107	SP-90	SP-91	44 m	Road	
108	SP-91	SP-92	50 m	Road	
109	SP-92	SP-93	45 m	Road	
110	SP-93	SP-94	50 m	Road	
111	SP-94	SP-95	46 m	Road	
112	SP-95	SP-96	30 m	Road	
113	SP-96	SP-97	46 m	Road	
114	SP-97	SP-98	47 m	Road	
115	SP-98	SP-99	46 m	Road	
116	SP-99	SP-100	39 m	Road	
117	SP-100	SP-101	46 m	Road	
118	SP-101	SP-102	50 m	Road	
119	SP-102	SP-103	45 m	Road	
120	SP-103	SP-104	49 m	Road	
121	SP-104	SP-105	46 m	Road	
122	SP-105	SP-106	49 m	Road	
123	SP-106	SP-107	49 m	Road	
124	SP-107	SP-108	45 m	Road	
125	SP-108	SP-109	49 m	Road	
126	SP-109	SP-110	47 m	Road	
127	SP-110	SP-111	44 m	Road	
128	SP-111	DP-17	42 m	Road	
129	DP-17	SP-112	47 m	Road	
130	SP-112	SP-113	47 m	Road	
131	SP-113	SP-114	47 m	Road	
132	SP-114	SP-115	50 m	Road	
133	SP-115	SP-116	44 m	Road	
134	SP-116	DP-18	49 m	Road	
135	DP-18	DP-19	47 m	Road	
136	DP-19	SP-117	50 m	Road	
137	SP-117	SP-118	47 m	Road	
138	SP-118	SP-119	47 m	Road	
139	SP-119	SP-120	50 m	Road	
140	SP-120	SP-121	45 m	Road	
141	SP-121	SP-122	50 m	Road	
142	SP-122	SP-123	47 m	Road	
143	SP-123	SP-124	50 m	Road	
144	SP-124	SP-125	44 m	Road	
145	SP-125	SP-126	50 m	Road	
146	SP-126	SP-127	42 m	Road	
147	SP-127	SP-128	50 m	Road	
148	SP-128	SP-129	50 m	Road	
149	SP-129	DP-20	47 m	Road	
150	DP-20	SP-130	49 m	Road	
151	SP-130	SP-131	48 m	Road	
152	SP-131	SP-132	47 m	Road	
153	SP-132	SP-133	48 m	Road	
154	SP-133	SP-134	49 m	Road	
155	SP-134	SP-135	50 m	Road	
156	SP-135	DP-21	50 m	Road	

Tree cutting may be required

Book



Name of Package:		ASM-DMS-02			
Name of Work:		33kV New Line from Proposed 132kV/33kV Sarupathar Substation to Existing 33/11kV Barapathar Substation			
SL NO	Pole From	Route 1		Description of Land	Nature of damage
		Pole To	Span (Meter)		
157	DP-21	DP-22	50 m	Road	
158	DP-22	SP-136	48 m	Road	
159	SP-136	SP-137	50 m	Road	
160	SP-137	SP-138	47 m	Road	
161	SP-138	SP-139	50 m	Road	
162	SP-139	SP-140	50 m	Road	
163	SP-140	DP-23	35 m	Road	
164	DP-23	DP-24	44 m	Road	
165	DP-24	DP-25	47 m	Road	
166	DP-25	SP-141	44 m	Road	
167	SP-141	SP-142	32 m	Road	
168	SP-142	DP-26	36 m	Road	
169	DP-26	SP-143	46 m	Road	
170	SP-143	SP-144	47 m	Road	
171	SP-144	SP-145	38 m	Road	
172	SP-145	DP-27	31 m	Road	
173	DP-27	SP-146	47 m	Road	
174	SP-146	SP-147	46 m	Road	
175	SP-147	FP-1	44 m	Road	
176	FP-1	SP-148	45 m	Road	
177	SP-148	SP-149	44 m	Paddy Field	
178	SP-149	SP-150	45 m	Paddy Field	
179	SP-150	SP-151	47 m	Paddy Field	
180	SP-151	SP-152	45 m	Paddy Field	
181	SP-152	SP-153	39 m	Paddy Field	
182	SP-153	DP-28	37 m	Paddy Field	
183	DP-28	SP-154	45 m	Paddy Field	
184	SP-154	SP-155	45 m	Paddy Field	
185	SP-155	SP-156	45 m	Paddy Field	
186	SP-156	SP-157	37 m	Paddy Field	
187	SP-157	DP-29	31 m	Paddy Field	
188	DP-29	DP-30	26 m UG	Railway Crossing	
189	DP-30	SP-158	44 m	Paddy Field	
190	SP-158	SP-159	47 m	Paddy Field	
191	SP-159	SP-160	47 m	Paddy Field	
192	SP-160	DP-31	50 m	Paddy Field	
193	DP-31	SP-161	36 m	Tea Garden Area	
194	SP-161	SP-162	30 m	Tea Garden Area	
195	SP-162	SP-163	47 m	Tea Garden Area	
196	SP-163	SP-164	46 m	Tea Garden Area	
197	SP-164	SP-165	44 m	Tea Garden Area	
198	SP-165	SP-166	46 m	Tea Garden Area	
199	SP-166	SP-167	44 m	Tea Garden Area	
200	SP-167	SP-168	48 m	Tea Garden Area	
201	SP-168	SP-169	43 m	Tea Garden Area	
202	SP-169	SP-170	44 m	Tea Garden Area	
203	SP-170	SP-171	39 m	Tea Garden Area	
204	SP-171	SP-172	35 m	Tea Garden Area	
205	SP-172	DP-32	27 m	Tea Garden Area	
206	DP-32	DP-33	13 m	State Highway Crossing	
207	DP-33	SP-173	33 m	Private Land	
208	SP-173	SP-174	37 m	Private Land	



Name of Package:		ASM-DMS-02			
Name of Work:		33kV New Line from Proposed 132kV/33kV Sarupathar Substation to Existing 33/11kV Barapathar Substation			
SL NO	Pole From	Route 1 Pole To	Span (Meter)	Description of Land	Nature of damage
209	SP-174	FP-2	33 m	Private Land	
210	FP-2	SP-175	45 m	Paddy Field	
211	SP-175	SP-176	45 m	Paddy Field	
212	SP-176	SP-177	43 m	Paddy Field	
213	SP-177	SP-178	45 m	Paddy Field	
214	SP-178	SP-179	40 m	Paddy Field	
215	SP-179	SP-180	36 m	Paddy Field	
216	SP-180	DP-34	29 m	Paddy Field	
217	DP-34	SP-181	43 m	Paddy Field	
218	SP-181	SP-182	46 m	Paddy Field	
219	SP-182	SP-183	46 m	Paddy Field	
220	SP-183	SP-184	43 m	Paddy Field	
221	SP-184	SP-185	43 m	Paddy Field	
222	SP-185	SP-186	46 m	Paddy Field	
223	SP-186	SP-187	46 m	Paddy Field	
224	SP-187	SP-188	46 m	Paddy Field	
225	SP-188	SP-189	46 m	Paddy Field	
226	SP-189	SP-190	46 m	Paddy Field	
227	SP-190	SP-191	46 m	Paddy Field	
228	SP-191	SP-192	43 m	66KV Line Crossing	
229	SP-192	SP-193	46 m	Paddy Field	
230	SP-193	SP-194	46 m	Paddy Field	
231	SP-194	SP-195	46 m	Private Land	Dense Trees (Tree Cutting Required)
232	SP-195	SP-196	46 m	Private Land	
233	SP-196	DP-35	40 m	Private Land	
234	DP-35	SP-197	50 m	Road (Residential Area)	
235	SP-197	DP-36	50 m	Road (Residential Area)	
236	DP-36	SP-198	48 m	Road (Residential Area)	
237	SP-198	FP-3	42 m	Road (Residential Area)	
238	FP-3	DP-37	36 m	Road (Residential Area)	
239	DP-37	SP-199	27 m	Road (Residential Area)	
240	SP-199	FP-4	29 m	Road (Residential Area)	
241	FP-4	SP-200	25 m	Road (Residential Area)	
242	SP-200	DP-38	29 m	Govt. Land	
243	DP-38	SP-201	35 m	Govt. Land	
244	SP-201	DP-39	38 m	Substation Area	
245	DP-39	GANTRY	21 m	33/11KV Existing Barapathar S/s	

Gosh
08/07/2017
सुमन घोष/Suman Ghosh
क्षेत्र अभियंता (विद्युत)/Field Engineer (Elect.)
एन.इ.आर.पि.एस.आइ.पि./NERPSIP
पावरग्रिड/Powergrid
सरुपथार/Sarupathar

Misra
08/07/17
दि.दि.मिश्रा/D. D. Misra
सह महा प्रबंधक/Asst. General Manager
एन.इ.आर.पि.एस.आइ.पि./NERPSIP
पावरग्रिड/Powergrid
सरुपथार/Sarupathar

Ambhar Dutta
Deputy Manager (I/c)
Sarupathar Elect. Sub-Division
APDCL Sarupathar

A
Junior Manager
Sarupathar Elect. Sub-Division
A.P.D.C.L., Sarupathar
Page 5 of 5

A
Assistant General Manager
Golgahat Electrical Division
APDCL Golgahat



POLE COUNT FROM PROPOSED 132/33kV SARUPATHAR SUBSTATION TO EXISTING 33/11kV SARUPATHAR SUBSTATION

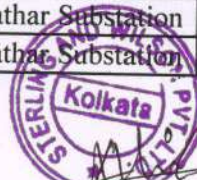
Sl No	Pole No	Pole Type	Route Name	Substation	Latitude	Longitude
1	GANTRY	GANTRY	Route 2	Existing Sarupathar Substation	26 11 50.8	93 54 07.1
2	SP-1	Single Pole	Route 2	Existing Sarupathar Substation	26 11 52.4	93 54 07.0
3	SP-2	Single Pole	Route 2	Existing Sarupathar Substation	26 11 53.7	93 54 07.0
4	FP-1	Four Pole	Route 2	Existing Sarupathar Substation	26 11 54.9	93 54 06.9
5	SP-3	Single Pole	Route 2	Existing Sarupathar Substation	26 11 54.7	93 54 05.2
6	SP-4	Single Pole	Route 2	Existing Sarupathar Substation	26 11 54.6	93 54 03.5
7	SP-5	Single Pole	Route 2	Existing Sarupathar Substation	26 11 54.4	93 54 01.8
8	SP-6	Single Pole	Route 2	Existing Sarupathar Substation	26 11 54.2	93 54 00.0
9	SP-7	Single Pole	Route 2	Existing Sarupathar Substation	26 11 54.1	93 53 58.3
10	SP-8	Single Pole	Route 2	Existing Sarupathar Substation	26 11 53.9	93 53 56.6
11	SP-9	Single Pole	Route 2	Existing Sarupathar Substation	26 11 53.8	93 53 54.9
12	SP-10	Single Pole	Route 2	Existing Sarupathar Substation	26 11 53.6	93 53 53.1
13	SP-11	Single Pole	Route 2	Existing Sarupathar Substation	26 11 53.5	93 53 51.4
14	SP-12	Single Pole	Route 2	Existing Sarupathar Substation	26 11 53.3	93 53 49.6
15	SP-13	Single Pole	Route 2	Existing Sarupathar Substation	26 11 53.2	93 53 47.9
16	SP-14	Single Pole	Route 2	Existing Sarupathar Substation	26 11 53.0	93 53 46.2
17	SP-15	Single Pole	Route 2	Existing Sarupathar Substation	26 11 52.9	93 53 44.5
18	SP-16	Single Pole	Route 2	Existing Sarupathar Substation	26 11 52.7	93 53 42.9
19	SP-17	Single Pole	Route 2	Existing Sarupathar Substation	26 11 52.6	93 53 41.1
20	SP-18	Single Pole	Route 2	Existing Sarupathar Substation	26 11 52.4	93 53 39.4
21	SP-19	Single Pole	Route 2	Existing Sarupathar Substation	26 11 52.2	93 53 37.7
22	SP-20	Single Pole	Route 2	Existing Sarupathar Substation	26 11 52.1	93 53 35.9
23	SP-21	Single Pole	Route 2	Existing Sarupathar Substation	26 11 51.9	93 53 34.2
24	SP-22	Single Pole	Route 2	Existing Sarupathar Substation	26 11 51.8	93 53 32.5
25	DP-1	Double Pole	Route 2	Existing Sarupathar Substation	26 11 51.6	93 53 30.8
26	SP-23	Single Pole	Route 2	Existing Sarupathar Substation	26 11 51.5	93 53 29.1
27	SP-24	Single Pole	Route 2	Existing Sarupathar Substation	26 11 51.3	93 53 27.3
28	SP-25	Single Pole	Route 2	Existing Sarupathar Substation	26 11 51.2	93 53 25.7
29	SP-26	Single Pole	Route 2	Existing Sarupathar Substation	26 11 51.0	93 53 24.0
30	SP-27	Single Pole	Route 2	Existing Sarupathar Substation	26 11 50.9	93 53 22.2
31	SP-28	Single Pole	Route 2	Existing Sarupathar Substation	26 11 50.7	93 53 20.5
32	SP-29	Single Pole	Route 2	Existing Sarupathar Substation	26 11 50.5	93 53 18.7
33	SP-30	Single Pole	Route 2	Existing Sarupathar Substation	26 11 50.4	93 53 17.0
34	SP-31	Single Pole	Route 2	Existing Sarupathar Substation	26 11 50.2	93 53 15.3
35	SP-32	Single Pole	Route 2	Existing Sarupathar Substation	26 11 50.1	93 53 13.5
36	SP-33	Single Pole	Route 2	Existing Sarupathar Substation	26 11 49.9	93 53 11.8
37	SP-34	Single Pole	Route 2	Existing Sarupathar Substation	26 11 49.8	93 53 10.1
38	SP-35	Single Pole	Route 2	Existing Sarupathar Substation	26 11 49.6	93 53 08.4
39	SP-36	Single Pole	Route 2	Existing Sarupathar Substation	26 11 49.5	93 53 06.6
40	SP-37	Single Pole	Route 2	Existing Sarupathar Substation	26 11 49.3	93 53 04.9
41	SP-38	Single Pole	Route 2	Existing Sarupathar Substation	26 11 49.1	93 53 03.2
42	SP-39	Single Pole	Route 2	Existing Sarupathar Substation	26 11 49.0	93 53 01.5
43	SP-40	Single Pole	Route 2	Existing Sarupathar Substation	26 11 48.8	93 52 59.8
44	SP-41	Single Pole	Route 2	Existing Sarupathar Substation	26 11 48.7	93 52 58.2
45	SP-42	Single Pole	Route 2	Existing Sarupathar Substation	26 11 48.6	93 52 57.0
46	SP-43	Single Pole	Route 2	Existing Sarupathar Substation	26 11 48.5	93 52 55.6



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**POLE COUNT FROM PROPOSED 132/33kV SARUPATHAR SUBSTATION TO
EXISTING 33/11kV SARUPATHAR SUBSTATION**

SI No	Pole No	Pole Type	Route Name	Substation	Latitude	Longitude
47	FP-2	Four Pole	Route 2	Existing Sarupathar Substation	26 11 48.3	93 52 54.1
48	SP-44	Single Pole	Route 2	Existing Sarupathar Substation	26 11 49.8	93 52 54.4
49	SP-45	Single Pole	Route 2	Existing Sarupathar Substation	26 11 51.3	93 52 54.6
50	DP-2	Double Pole	Route 2	Existing Sarupathar Substation	26 11 52.9	93 52 54.9
51	SP-46	Single Pole	Route 2	Existing Sarupathar Substation	26 11 54.37	93 52 54.23
52	SP-47	Single Pole	Route 2	Existing Sarupathar Substation	26 11 55.86	93 52 53.55
53	SP-48	Single Pole	Route 2	Existing Sarupathar Substation	26 11 57.33	93 52 52.88
54	SP-49	Single Pole	Route 2	Existing Sarupathar Substation	26 11 58.81	93 52 52.20
55	SP-50	Single Pole	Route 2	Existing Sarupathar Substation	26 12 00.30	93 52 51.52
56	SP-51	Single Pole	Route 2	Existing Sarupathar Substation	26 12 01.78	93 52 50.84
57	SP-52	Single Pole	Route 2	Existing Sarupathar Substation	26 12 03.26	93 52 50.16
58	SP-53	Single Pole	Route 2	Existing Sarupathar Substation	26 12 04.74	93 52 49.48
59	SP-54	Single Pole	Route 2	Existing Sarupathar Substation	26 12 06.23	93 52 48.80
60	SP-55	Single Pole	Route 2	Existing Sarupathar Substation	26 12 07.71	93 52 48.12
61	SP-56	Single Pole	Route 2	Existing Sarupathar Substation	26 12 09.20	93 52 47.44
62	SP-57	Single Pole	Route 2	Existing Sarupathar Substation	26 12 10.69	93 52 46.76
63	SP-58	Single Pole	Route 2	Existing Sarupathar Substation	26 12 12.17	93 52 46.09
64	SP-59	Single Pole	Route 2	Existing Sarupathar Substation	26 12 13.65	93 52 45.41
65	SP-60	Single Pole	Route 2	Existing Sarupathar Substation	26 12 15.12	93 52 44.74
66	SP-61	Single Pole	Route 2	Existing Sarupathar Substation	26 12 16.60	93 52 44.06
67	SP-62	Single Pole	Route 2	Existing Sarupathar Substation	26 12 17.99	93 52 43.43
68	SP-63	Single Pole	Route 2	Existing Sarupathar Substation	26 12 19.04	93 52 42.95
69	DP-3	Double Pole	Route 2	Existing Sarupathar Substation	26 12 19.8	93 52 42.6
70	DP-4	Double Pole	Route 2	Existing Sarupathar Substation	26 12 20.1	93 52 40.9
71	DP-5	Double Pole	Route 2	Existing Sarupathar Substation	26 12 19.7	93 52 39.1
72	SP-64	Single Pole	Route 2	Existing Sarupathar Substation	26 12 20.3	93 52 37.5
73	DP-6	Double Pole	Route 2	Existing Sarupathar Substation	26 12 20.9	93 52 35.7
74	DP-7	Double Pole	Route 2	Existing Sarupathar Substation	26 12 22.1	93 52 34.6
75	SP-65	Single Pole	Route 2	Existing Sarupathar Substation	26 12 22.7	93 52 33.0
76	SP-66	Single Pole	Route 2	Existing Sarupathar Substation	26 12 23.3	93 52 31.4
77	SP-67	Single Pole	Route 2	Existing Sarupathar Substation	26 12 23.8	93 52 30.0
78	SP-68	Single Pole	Route 2	Existing Sarupathar Substation	26 12 24.3	93 52 28.8
79	DP-8	Double Pole	Route 2	Existing Sarupathar Substation	26 12 24.8	93 52 27.6
80	SP-69	Single Pole	Route 2	Existing Sarupathar Substation	26 12 25.9	93 52 26.5
81	SP-70	Single Pole	Route 2	Existing Sarupathar Substation	26 12 27.0	93 52 25.4
82	SP-71	Single Pole	Route 2	Existing Sarupathar Substation	26 12 28.2	93 52 24.3
83	SP-72	Single Pole	Route 2	Existing Sarupathar Substation	26 12 29.4	93 52 23.1
84	DP-9	Double Pole	Route 2	Existing Sarupathar Substation	26 12 30.4	93 52 22.1
85	SP-73	Single Pole	Route 2	Existing Sarupathar Substation	26 12 31.9	93 52 22.7
86	SP-74	Single Pole	Route 2	Existing Sarupathar Substation	26 12 33.3	93 52 23.3
87	SP-75	Single Pole	Route 2	Existing Sarupathar Substation	26 12 34.8	93 52 23.8
88	SP-76	Single Pole	Route 2	Existing Sarupathar Substation	26 12 36.1	93 52 24.4
89	SP-77	Single Pole	Route 2	Existing Sarupathar Substation	26 12 37.5	93 52 24.9
90	SP-78	Single Pole	Route 2	Existing Sarupathar Substation	26 12 38.9	93 52 25.5
91	SP-79	Single Pole	Route 2	Existing Sarupathar Substation	26 12 40.1	93 52 25.9
92	FP-3	Four Pole	Route 2	Existing Sarupathar Substation	26 12 41.2	93 52 26.3



**POLE COUNT FROM PROPOSED 132/33KV SARUPATHAR SUBSTATION TO
EXISTING 33/11KV SARUPATHAR SUBSTATION**

SI No	Pole No	Pole Type	Route Name	Substation	Latitude	Longitude
93	SP-80	Single Pole	Route 2	Existing Sarupathar Substation	26 12 41.8	93 52 24.9
94	SP-81	Single Pole	Route 2	Existing Sarupathar Substation	26 12 42.4	93 52 23.4
95	SP-82	Single Pole	Route 2	Existing Sarupathar Substation	26 12 43.1	93 52 21.8
96	SP-83	Single Pole	Route 2	Existing Sarupathar Substation	26 12 43.7	93 52 20.3
97	SP-84	Single Pole	Route 2	Existing Sarupathar Substation	26 12 44.2	93 52 19.1
98	FP-4	Four Pole	Route 2	Existing Sarupathar Substation	26 12 44.7	93 52 18.1
99	SP-85	Single Pole	Route 2	Existing Sarupathar Substation	26 12 43.3	93 52 17.5
100	SP-86	Single Pole	Route 2	Existing Sarupathar Substation	26 12 41.8	93 52 16.8
101	SP-87	Single Pole	Route 2	Existing Sarupathar Substation	26 12 40.5	93 52 16.2
102	FP-5	Four Pole	Route 2	Existing Sarupathar Substation	26 12 39.0	93 52 15.6
103	SP-88	Single Pole	Route 2	Existing Sarupathar Substation	26 12 39.7	93 52 14.0
104	SP-89	Single Pole	Route 2	Existing Sarupathar Substation	26 12 40.3	93 52 12.3
105	SP-90	Single Pole	Route 2	Existing Sarupathar Substation	26 12 40.8	93 52 10.7
106	SP-91	Single Pole	Route 2	Existing Sarupathar Substation	26 12 41.2	93 52 09.3
107	SP-92	Single Pole	Route 2	Existing Sarupathar Substation	26 12 41.6	93 52 08.1
108	DP-10	Double Pole	Route 2	Existing Sarupathar Substation	26 12 41.9	93 52 07.0
109	SP-93	Single Pole	Route 2	Existing Sarupathar Substation	26 12 42.2	93 52 05.6
110	SP-94	Single Pole	Route 2	Existing Sarupathar Substation	26 12 42.5	93 52 04.2
111	DP-11	Double Pole	Route 2	Existing Sarupathar Substation	26 12 42.7	93 52 03.1
112	DP-12	Double Pole	Route 2	Existing Sarupathar Substation	26 12 42.6	93 52 02.0
113	SP-95	Single Pole	Route 2	Existing Sarupathar Substation	26 12 43.0	93 52 00.3
114	SP-96	Single Pole	Route 2	Existing Sarupathar Substation	26 12 43.3	93 51 59.1
115	SP-97	Single Pole	Route 2	Existing Sarupathar Substation	26 12 43.5	93 51 57.9
116	SP-98	Single Pole	Route 2	Existing Sarupathar Substation	26 12 44.1	93 51 56.2
117	DP-13	Double Pole	Route 2	Existing Sarupathar Substation	26 12 44.6	93 51 54.4
118	SP-99	Single Pole	Route 2	Existing Sarupathar Substation	26 12 45.6	93 51 53.3
119	SP-100	Single Pole	Route 2	Existing Sarupathar Substation	26 12 46.6	93 51 52.1
120	SP-101	Single Pole	Route 2	Existing Sarupathar Substation	26 12 47.5	93 51 51.2
121	DP-14	Double Pole	Route 2	Existing Sarupathar Substation	26 12 48.2	93 51 50.4
122	SP-102	Single Pole	Route 2	Existing Sarupathar Substation	26 12 48.5	93 51 48.7
123	SP-103	Single Pole	Route 2	Existing Sarupathar Substation	26 12 48.7	93 51 47.2
124	FP-6	Four Pole	Route 2	Existing Sarupathar Substation	26 12 48.8	93 51 46.0
125	SP-104	Single Pole	Route 2	Existing Sarupathar Substation	26 12 47.3	93 51 45.7
126	SP-105	Single Pole	Route 2	Existing Sarupathar Substation	26 12 46.2	93 51 45.4
127	SP-106	Single Pole	Route 2	Existing Sarupathar Substation	26 12 44.9	93 51 45.2
128	FP-7	Four Pole	Route 2	Existing Sarupathar Substation	26 12 44.1	93 51 45.2
129	GANTRY	GANTRY	Route 2	Existing Sarupathar Substation	26 12 44.1	93 51 46.2

Goshh
08/07/2017
सुमेन घोष/Suman Ghosh
क्षेत्र अभियंता (विद्युत)/Field Engineer (Elect.)
एन.डि.आर.पि.एस.आइ.पि./NERPSIP
पावरग्रिड/Powergrid
सरुपथार/Sarupathar

D. D. Misra
08/07/17
दि.दि.मिश्र/D. D. Misra
सहायक महा प्रबंधक/Asst. General Manager
एन.डि.आर.पि.एस.आइ.पि./NERPSIP
पावरग्रिड/Powergrid
सरुपथार/Sarupathar



Bhaskar
Junior Manager
Sarupathar Elect. Sub-Division
A.P.D.C.L., Sarupathar

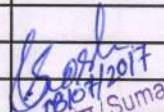
d
Assistant General Manager
Golgahat Electrical Division
APDC Golghat

Anubhav Dutta
Deputy Manager (I/C)
Sarupathar Elect. Sub-Division
A.P.D.C.L., Sarupathar

Name of Package:	ASM-DMS-02
Name of Work:	33kV New Line from Proposed 132kV/33kV Sarupathar Substation to Existing 33/11kV Sariajan Substation

Route 2

SL NO	Pole From	Pole To	Span (Meter)	Description of Land	Nature of damage
1	GANTRY	FP-1	5 m	Proposed 132kV/33kV Sarupathar Substation	
2	FP-1	FP-2	25 m	Paddy Field	
3	FP-2	SP-1	46 m	Paddy Field	
4	SP-1	SP-2	45 m	Paddy Field	
5	SP-2	DP-1	74 m	Paddy Field	
6	DP-1	SP-3	46 m	Paddy Field	
7	SP-3	SP-4	45 m	Paddy Field	
8	SP-4	SP-5	92 m	Paddy Field	
9	SP-5	SP-6	47 m	Paddy Field	
10	SP-6	SP-7	47 m	Paddy Field	
11	SP-7	SP-8	46 m	Paddy Field	
12	SP-8	SP-9	45 m	Paddy Field	
13	SP-9	SP-10	47 m	Paddy Field	
14	SP-10	SP-11	46 m	Paddy Field	
15	SP-11	SP-12	48 m	Paddy Field	
16	SP-12	SP-13	45 m	Paddy Field	
17	SP-13	SP-14	46 m	Paddy Field	
18	SP-14	SP-15	46 m	Paddy Field	
19	SP-15	SP-16	50 m	Paddy Field	
20	SP-16	SP-17	46 m	Paddy Field	
21	SP-17	SP-18	46 m	Paddy Field	
22	SP-18	SP-19	47 m	Paddy Field	
23	SP-19	DP-2	45 m	Paddy Field	
24	DP-2	SP-20	46 m	Paddy Field	
25	SP-20	SP-21	47 m	Paddy Field	
26	SP-21	SP-22	47 m	Paddy Field	
27	SP-22	SP-23	47 m	Paddy Field	
28	SP-23	SP-24	45 m	Paddy Field	
29	SP-24	SP-25	46 m	Paddy Field	
30	SP-25	SP-26	47 m	Paddy Field	
31	SP-26	SP-27	46 m	Paddy Field	
32	SP-27	SP-28	45 m	Paddy Field	
33	SP-28	SP-29	47 m	Paddy Field	
34	SP-29	SP-30	48 m	Paddy Field	
35	SP-30	SP-31	48 m	Paddy Field	
36	SP-31	SP-32	47 m	Paddy Field	
37	SP-32	SP-33	48 m	Paddy Field	
38	SP-33	SP-34	48 m	Paddy Field	
39	SP-34	SP-35	46 m	Paddy Field	
40	SP-35	DP-3	34 m	Paddy Field	
41	DP-3	SP-36	46 m	Paddy Field	
42	SP-36	SP-37	46 m	Paddy Field	
43	SP-37	SP-38	46 m	Paddy Field	
44	SP-38	SP-39	46 m	Paddy Field	
45	SP-39	SP-40	46 m	Paddy Field	
46	SP-40	SP-41	43 m	Paddy Field	
47	SP-41	SP-42	44 m	Paddy Field	
48	SP-42	SP-43	46 m	Paddy Field	
49	SP-43	SP-44	46 m	Paddy Field	


 28/07/2017
 Suman Ghosh, Suman Ghosh
 (विद्युत) / Field Engineer (Elect.)
 क्षेत्र अभियंता (विद्युत) / NERPSIP
 एन. डी. ओ. सि. एम. आर. सि. /
 पावरग्रिड / Powergrid
 सरुपथार / Sarupathar



Name of Package:	ASM-DMS-02
Name of Work:	33kV New Line from Proposed 132kV/33kV Sarupathar Substation to Existing 33/11kV Sariajan Substation

Route 2

SL NO	Pole From	Pole To	Span (Meter)	Description of Land	Nature of damage
50	SP-44	SP-45	46 m	Paddy Field	
51	SP-45	SP-46	46 m	Paddy Field	
52	SP-46	SP-47	47 m	Paddy Field	
53	SP-47	SP-48	48 m	Paddy Field	
54	SP-48	DP-4	44 m	Paddy Field	
55	DP-4	SP-49	46 m	Paddy Field	
56	SP-49	SP-50	45 m	Paddy Field	
57	SP-50	SP-51	46 m	Paddy Field	
58	SP-51	SP-52	47 m	Paddy Field	
59	SP-52	SP-53	47 m	Paddy Field	
60	SP-53	DP-5	46 m	Paddy Field	
61	DP-5	SP-54	48 m	Paddy Field	
62	SP-54	SP-55	93 m	Paddy Field	
63	SP-55	SP-56	46 m	Paddy Field	
64	SP-56	SP-57	92 m	Paddy Field	
65	SP-57	SP-58	45 m	Paddy Field	
66	SP-58	SP-59	46 m	Paddy Field	
67	SP-59	SP-60	45 m	Paddy Field	
68	SP-60	SP-61	46 m	Paddy Field	
69	SP-61	SP-62	46 m	Paddy Field	
70	SP-62	SP-63	45 m	Paddy Field	
71	SP-63	SP-64	46 m	Paddy Field	
72	SP-64	SP-65	45 m	Paddy Field	
73	SP-65	SP-66	46 m	Paddy Field	
74	SP-66	DP-6	44 m	Paddy Field	
75	DP-6	SP-67	45 m	Paddy Field	
76	SP-67	SP-68	46 m	Paddy Field	
77	SP-68	SP-69	45 m	Paddy Field	
78	SP-69	SP-70	46 m	Paddy Field	
79	SP-70	SP-71	45 m	Paddy Field	
80	SP-71	SP-72	45 m	Paddy Field	
81	SP-72	SP-73	45 m	Paddy Field	
82	SP-73	SP-74	46 m	Paddy Field	
83	SP-74	SP-75	45 m	Paddy Field	
84	SP-75	SP-76	45 m	Paddy Field	
85	SP-76	SP-77	46 m	Paddy Field	
86	SP-77	DP-7	48 m	Paddy Field	
87	DP-7	SP-78	45 m	Katcha Road	
88	SP-78	DP-8	45 m	Katcha Road	
89	DP-8	SP-79	44 m	Katcha Road	
90	SP-79	FP-3	46 m	Katcha Road	
91	FP-3	SP-80	45 m	Katcha Road	
92	SP-80	SP-81	46 m	Katcha Road	
93	SP-81	SP-82	46 m	Katcha Road	
94	SP-82	SP-83	49 m	Katcha Road	
95	SP-83	SP-84	47 m	Katcha Road	
96	SP-84	SP-85	45 m	Katcha Road	
97	SP-85	SP-86	47 m	Katcha Road	
98	SP-86	SP-87	46 m	Katcha Road	
99	SP-87	SP-88	46 m	Katcha Road	



Name of Package:	ASM-DMS-02
Name of Work:	33kV New Line from Proposed 132kV/33kV Sarupathar Substation to Existing 33/11kV Sariajan Substation

Route 2

SL NO	Pole From	Pole To	Span (Meter)	Description of Land	Nature of damage
100	SP-88	SP-89	47 m	Katcha Road	
101	SP-89	SP-90	46 m	Katcha Road	
102	SP-90	SP-91	47 m	Katcha Road	
103	SP-91	SP-92	46 m	Katcha Road	
104	SP-92	SP-93	44 m	Katcha Road	
105	SP-93	DP-9	45 m	Katcha Road	
106	DP-9	SP-94	47 m	Katcha Road	
107	SP-94	SP-95	46 m	Katcha Road	
108	SP-95	SP-96	45 m	Katcha Road	
109	SP-96	SP-97	47 m	Katcha Road	
110	SP-97	SP-98	45 m	Katcha Road	
111	SP-98	SP-99	45 m	Katcha Road	
112	SP-99	SP-100	46 m	Katcha Road	
113	SP-100	SP-101	45 m	Katcha Road	
114	SP-101	SP-102	46 m	Katcha Road	
115	SP-102	SP-103	43 m	Katcha Road	
116	SP-103	FP-4	44 m	Katcha Road	
117	FP-4	SP-104	47 m	Paddy Field	
118	SP-104	SP-105	46 m	Paddy Field	
119	SP-105	SP-106	45 m	Paddy Field	
120	SP-106	SP-107	45 m	Paddy Field	
121	SP-107	SP-108	46 m	Paddy Field	
122	SP-108	SP-109	45 m	Paddy Field	
123	SP-109	SP-110	46 m	Paddy Field	
124	SP-110	SP-111	46 m	Paddy Field	
125	SP-111	SP-112	46 m	Paddy Field	
126	SP-112	SP-113	46 m	Paddy Field	
127	SP-113	SP-114	45 m	Paddy Field	
128	SP-114	SP-115	45 m	Paddy Field	
129	SP-115	SP-116	45 m	Paddy Field	
130	SP-116	SP-117	47 m	Paddy Field	
131	SP-117	SP-118	44 m	Paddy Field	
132	SP-118	SP-119	46 m	Paddy Field	
133	SP-119	SP-120	45 m	Paddy Field	
134	SP-120	SP-121	46 m	Paddy Field	
135	SP-121	SP-122	47 m	Paddy Field	
136	SP-122	SP-123	46 m	Paddy Field	
137	SP-123	SP-124	46 m	Paddy Field	
138	SP-124	SP-125	45 m	Paddy Field	
139	SP-125	SP-126	47 m	Paddy Field	
140	SP-126	SP-127	91 m	Paddy Field	
141	SP-127	DP-10	46 m	Paddy Field	
142	DP-10	SP-128	87 m	Paddy Field	
143	SP-128	SP-129	47 m	Paddy Field	
144	SP-129	SP-130	47 m	Paddy Field	
145	SP-130	SP-131	47 m	Paddy Field	
146	SP-131	SP-132	45 m	Paddy Field	
147	SP-132	SP-133	47 m	Paddy Field	
148	SP-133	SP-134	46 m	Paddy Field	
149	SP-134	DP-11	45 m	Paddy Field	

Bank



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Name of Package:	ASM-DMS-02
Name of Work:	33kV New Line from Proposed 132kV/33kV Sarupathar Substation to Existing 33/11kV Sariajan Substation

Route 2

SL NO	Pole From	Pole To	Span (Meter)	Description of Land	Nature of damage
150	DP-11	SP-135	46 m	Paddy Field	
151	SP-135	SP-136	46 m	Paddy Field	
152	SP-136	SP-137	45 m	Paddy Field	
153	SP-137	SP-138	46 m	Paddy Field	
154	SP-138	SP-139	47 m	Paddy Field	
155	SP-139	SP-140	46 m	Paddy Field	
156	SP-140	SP-141	46 m	Paddy Field	
157	SP-141	SP-142	46 m	Paddy Field	
158	SP-142	SP-143	46 m	Paddy Field	
159	SP-143	SP-144	45 m	Paddy Field	
160	SP-144	SP-145	47 m	Paddy Field	
161	SP-145	SP-146	47 m	Paddy Field	
162	SP-146	SP-147	46 m	Paddy Field	
163	SP-147	SP-148	47 m	Paddy Field	
164	SP-148	SP-149	46 m	Paddy Field	
165	SP-149	SP-150	46 m	Paddy Field	
166	SP-150	SP-151	45 m	Paddy Field	
167	SP-151	SP-152	47 m	Paddy Field	
168	SP-152	SP-153	47 m	Paddy Field	
169	SP-153	SP-154	46 m	Paddy Field	
170	SP-154	SP-155	46 m	Paddy Field	
171	SP-155	SP-156	47 m	Paddy Field	
172	SP-156	SP-157	46 m	Paddy Field	
173	SP-157	SP-158	46 m	Paddy Field	
174	SP-158	SP-159	46 m	Paddy Field	
175	SP-159	SP-160	48 m	Paddy Field	
176	SP-160	SP-161	46 m	Paddy Field	
177	SP-161	FP-5	48 m	Naojan Road	
178	FP-5	SP-162	47 m	Naojan Road	
179	SP-162	SP-163	45 m	Naojan Road	
180	SP-163	SP-164	47 m	Naojan Road	
181	SP-164	SP-165	46 m	Naojan Road	
182	SP-165	SP-166	47 m	Naojan Road	
183	SP-166	SP-167	45 m	Naojan Road	
184	SP-167	SP-168	46 m	Naojan Road	
185	SP-168	SP-169	45 m	Naojan Road	
186	SP-169	SP-170	47 m	Naojan Road	
187	SP-170	FP-6	43 m	Naojan Road	
188	FP-6	SP-171	47 m UG	Railway Crossing	
189	SP-171	SP-172	46 m	Paddy Field/Private Land	
190	SP-172	SP-173	45 m	Paddy Field/Private Land	
191	SP-173	SP-174	47 m	Paddy Field/Private Land	
192	SP-174	SP-175	45 m	Paddy Field/Private Land	
193	SP-175	SP-176	47 m	Paddy Field/Private Land	
194	SP-176	SP-177	47 m	Paddy Field/Private Land	
195	SP-177	SP-178	47 m	Paddy Field/Private Land	
196	SP-178	SP-179	47 m	Paddy Field/Private Land	
197	SP-179	SP-180	46 m	Paddy Field/Private Land	
198	SP-180	DP-12	44 m	Paddy Field/Private Land	
199	DP-12	SP-181	47 m	Paddy Field/Private Land	



Name of Package:	ASM-DMS-02
Name of Work:	33kV New Line from Proposed 132kV/33kV Sarupathar Substation to Existing 33/11kV Sariajan Substation

Route 2

SL NO	Pole From	Pole To	Span (Meter)	Description of Land	Nature of damage
200	SP-181	SP-182	46 m	Paddy Field/Private Land	
201	SP-182	SP-183	46 m	Paddy Field/Private Land	
202	SP-183	SP-184	47 m	Paddy Field/Private Land	
203	SP-184	SP-185	45 m	Paddy Field/Private Land	
204	SP-185	SP-186	47 m	Paddy Field/Private Land	
205	SP-186	SP-187	46 m	Paddy Field/Private Land	
206	SP-187	SP-188	45 m	Paddy Field/Private Land	
207	SP-188	SP-189	45 m	Paddy Field/Private Land	
208	SP-189	SP-190	46 m	Paddy Field/Private Land	
209	SP-190	SP-191	45 m	Paddy Field/Private Land	
210	SP-191	SP-192	46 m	Paddy Field/Private Land	
211	SP-192	SP-193	46 m	Paddy Field/Private Land	
212	SP-193	SP-194	46 m	Paddy Field/Private Land	
213	SP-194	DP-13	49 m	Paddy Field/Private Land	
214	DP-13	SP-195	46 m	Paddy Field/Private Land	
215	SP-195	SP-196	46 m	Paddy Field/Private Land	
216	SP-196	SP-197	46 m	Paddy Field/Private Land	
217	SP-197	SP-198	47 m	Paddy Field/Private Land	
218	SP-198	SP-199	45 m	Paddy Field/Private Land	
219	SP-199	SP-200	46 m	Paddy Field/Private Land	
220	SP-200	SP-201	47 m	Paddy Field/Private Land	
221	SP-201	SP-202	46 m	Paddy Field/Private Land	
222	SP-202	SP-203	46 m	Paddy Field/Private Land	
223	SP-203	SP-204	46 m	Paddy Field/Private Land	
224	SP-204	SP-205	45 m	Paddy Field/Private Land	
225	SP-205	SP-206	46 m	Paddy Field/Private Land	
226	SP-206	SP-207	47 m	Paddy Field/Private Land	
227	SP-207	SP-208	45 m	Paddy Field/Private Land	
228	SP-208	FP-7	49 m	Paddy Field/Private Land	
229	FP-7	SP-209	47 m	Paddy Field/Private Land	
230	SP-209	SP-210	46 m	Paddy Field/Private Land	
231	SP-210	SP-211	45 m	Paddy Field/Private Land	
232	SP-211	SP-212	46 m	Paddy Field/Private Land	
233	SP-212	SP-213	46 m	Paddy Field/Private Land	
234	SP-213	SP-214	45 m	Paddy Field/Private Land	
235	SP-214	SP-215	46 m	Paddy Field/Private Land	
236	SP-215	DP-14	43 m	Paddy Field/Private Land	
237	DP-14	SP-216	46 m	Paddy Field/Private Land	
238	SP-216	SP-217	45 m	Paddy Field/Private Land	
239	SP-217	SP-218	45 m	Paddy Field/Private Land	
240	SP-218	SP-219	46 m	Paddy Field/Private Land	
241	SP-219	SP-220	46 m	Paddy Field/Private Land	
242	SP-220	DP-15	48 m	Paddy Field/Private Land	
243	DP-15	DP-16	46 m	Nallah Crossing	Dhansiri River
244	DP-16	SP-221	45 m	Paddy Field/Private Land	
245	SP-221	SP-222	46 m	Paddy Field/Private Land	
	SP-222	SP-223	47 m	Paddy Field/Private Land	
	SP-223	SP-224	45 m	Paddy Field/Private Land	
	SP-224	SP-225	46 m	Paddy Field/Private Land	
	SP-225	SP-226	45 m	Paddy Field/Private Land	

Name of Package:	ASM-DMS-02
Name of Work:	33kV New Line from Proposed 132kV/33kV Sarupathar Substation to Existing 33/11kV Sariajan Substation

Route 2

SL NO	Pole From	Pole To	Span (Meter)	Description of Land	Nature of damage
	SP-226	SP-227	46 m	Paddy Field/Private Land	
	SP-227	SP-228	46 m	Paddy Field/Private Land	
	SP-228	SP-229	46 m	Paddy Field/Private Land	
	SP-229	DP-17	48 m	Paddy Field/Private Land	
	DP-17	SP-230	45 m	Paddy Field/Private Land	
	SP-230	SP-231	45 m	Paddy Field/Private Land	
	SP-231	SP-232	47 m	Paddy Field/Private Land	
	SP-232	SP-233	45 m	Paddy Field/Private Land	
	SP-233	SP-234	46 m	Paddy Field/Private Land	
	SP-234	SP-235	46 m	Paddy Field/Private Land	
	SP-235	SP-236	47 m	Paddy Field/Private Land	
	SP-236	SP-237	47 m	Paddy Field/Private Land	
	SP-237	SP-238	45 m	Paddy Field/Private Land	
	SP-238	FP-8	47 m	Paddy Field/Private Land	
	FP-8	SP-239	45 m	Paddy Field/Private Land	
	SP-239	SP-240	47 m	Paddy Field/Private Land	
	SP-240	SP-241	46 m	Paddy Field/Private Land	
	SP-241	SP-242	46 m	Paddy Field/Private Land	
	SP-242	SP-243	46 m	Paddy Field/Private Land	
	SP-243	SP-244	46 m	Paddy Field/Private Land	
	SP-244	SP-245	47 m	Paddy Field/Private Land	
	SP-245	SP-246	45 m	Paddy Field/Private Land	
	SP-246	SP-247	46 m	Paddy Field/Private Land	
	SP-247	SP-248	47 m	Paddy Field/Private Land	
	SP-248	SP-249	47 m	Paddy Field/Private Land	
	SP-249	SP-250	46 m	Paddy Field/Private Land	
	SP-250	SP-251	46 m	Paddy Field/Private Land	
	SP-251	SP-252	46 m	Paddy Field/Private Land	
	SP-252	DP-18	45 m	Paddy Field/Private Land	
	DP-18	SP-253	46 m	Paddy Field/Private Land	
	SP-253	SP-254	45 m	Paddy Field/Private Land	
	SP-254	SP-255	46 m	Paddy Field/Private Land	
	SP-255	SP-256	46 m	Paddy Field/Private Land	
	SP-256	SP-257	46 m	Paddy Field/Private Land	
	SP-257	SP-258	47 m	Paddy Field/Private Land	
	SP-258	SP-259	46 m	Paddy Field/Private Land	
	SP-259	SP-260	47 m	Paddy Field/Private Land	
	SP-260	SP-261	45 m	Paddy Field/Private Land	
	SP-261	SP-262	46 m	Paddy Field/Private Land	
	SP-262	SP-263	45 m	Paddy Field/Private Land	
	SP-263	SP-264	46 m	Paddy Field/Private Land	
	SP-264	SP-265	46 m	Paddy Field/Private Land	
	SP-265	SP-266	46 m	Paddy Field/Private Land	
	SP-266	SP-267	46 m	Paddy Field/Private Land	
	SP-267	SP-268	47 m	Paddy Field/Private Land	
	SP-268	SP-269	46 m	Paddy Field/Private Land	
	SP-269	SP-270	47 m	Paddy Field/Private Land	
	SP-270	SP-271	46 m	Paddy Field/Private Land	
	SP-271	SP-272	47 m	Paddy Field/Private Land	
	SP-272	SP-273	46 m	Paddy Field/Private Land	



Name of Package:	ASM-DMS-02
Name of Work:	33kV New Line from Proposed 132kV/33kV Sarupathar Substation to Existing 33/11kV Sariajan Substation

Route 2

SL NO	Pole From	Pole To	Span (Meter)	Description of Land	Nature of damage
	SP-273	SP-274	48 m	Paddy Field/Private Land	
	SP-274	SP-275	46 m	Paddy Field/Private Land	
	SP-275	DP-19	45 m	Paddy Field/Private Land	
	DP-19	SP-276	45 m	Paddy Field/Private Land	
	SP-276	SP-277	46 m	Paddy Field/Private Land	
	SP-277	SP-278	46 m	Paddy Field/Private Land	
	SP-278	SP-279	46 m	Paddy Field/Private Land	
	SP-279	SP-280	47 m	Paddy Field/Private Land	
	SP-280	SP-281	46 m	Paddy Field/Private Land	
	SP-281	SP-282	46 m	Paddy Field/Private Land	
	SP-282	SP-283	46 m	Paddy Field/Private Land	
	SP-283	SP-284	45 m	Paddy Field/Private Land	
	SP-284	SP-285	45 m	Paddy Field/Private Land	
	SP-285	SP-286	46 m	Paddy Field/Private Land	
	SP-286	SP-287	45 m	Paddy Field/Private Land	
	SP-287	SP-288	46 m	Paddy Field/Private Land	
	SP-288	DP-20	45 m	Paddy Field/Private Land	
	DP-20	SP-289	47 m	Paddy Field/Private Land	
	SP-289	SP-290	46 m	Paddy Field/Private Land	
	SP-290	SP-291	47 m	Paddy Field/Private Land	
	SP-291	SP-292	47 m	Paddy Field/Private Land	
	SP-292	SP-293	47 m	Paddy Field/Private Land	
	SP-293	SP-294	47 m	Paddy Field/Private Land	
	SP-294	SP-295	47 m	Paddy Field/Private Land	
	SP-295	SP-296	47 m	Paddy Field/Private Land	
	SP-296	SP-297	47 m	Paddy Field/Private Land	
	SP-297	SP-298	47 m	Paddy Field/Private Land	
	SP-298	SP-299	47 m	Paddy Field/Private Land	
	SP-299	SP-300	46 m	Paddy Field/Private Land	
	SP-300	SP-301	47 m	Paddy Field/Private Land	
	SP-301	SP-302	46 m	Paddy Field/Private Land	
	SP-302	SP-303	47 m	Paddy Field/Private Land	
	SP-303	SP-304	46 m	Paddy Field/Private Land	
	SP-304	FP-9	43 m	Paddy Field/Private Land	
	FP-9	SP-305	45 m	Main Road (AH1)	
	SP-305	SP-306	46 m	Main Road (AH1)	
	SP-306	SP-307	47 m	Main Road (AH1)	
	SP-307	SP-308	46 m	Main Road (AH1)	
	SP-308	SP-309	46 m	Main Road (AH1)	
	SP-309	SP-310	46 m	Main Road (AH1)	
	SP-310	SP-311	46 m	Main Road (AH1)	
	SP-311	SP-312	46 m	Main Road (AH1)	
	SP-312	SP-313	47 m	Main Road (AH1)	
	SP-313	SP-314	46 m	Main Road (AH1)	
	SP-314	SP-315	45 m	Main Road (AH1)	
	SP-315	SP-316	45 m	Main Road (AH1)	
	SP-316	SP-317	46 m	Main Road (AH1)	
	SP-317	SP-318	47 m	Main Road (AH1)	
	SP-318	SP-319	47 m	Main Road (AH1)	
	SP-319	DP-21	46 m	Main Road (AH1)	

Name of Package:	ASM-DMS-02
Name of Work:	33kV New Line from Proposed 132kV/33kV Sarupathar Substation to Existing 33/11kV Sariajan Substation

Route 2

SL NO	Pole From	Pole To	Span (Meter)	Description of Land	Nature of damage
	DP-21	SP-320	44 m	Main Road (AH1)	
	SP-320	SP-321	46 m	Main Road (AH1)	
	SP-321	SP-322	47 m	Main Road (AH1)	
	SP-322	SP-323	47 m	Main Road (AH1)	
	SP-323	SP-324	46 m	Main Road (AH1)	
	SP-324	SP-325	46 m	Main Road (AH1)	
	SP-325	SP-326	47 m	Main Road (AH1)	
	SP-326	SP-327	46 m	Main Road (AH1)	
	SP-327	SP-328	47 m	Main Road (AH1)	
	SP-328	SP-329	46 m	Main Road (AH1)	
	SP-329	SP-330	46 m	Main Road (AH1)	
	SP-330	SP-331	45 m	Main Road (AH1)	
	SP-331	SP-332	46 m	Main Road (AH1)	
	SP-332	SP-333	46 m	Main Road (AH1)	
	SP-333	SP-334	46 m	Main Road (AH1)	
	SP-334	SP-335	47 m	Main Road (AH1)	
	SP-335	SP-336	46 m	Main Road (AH1)	
	SP-336	DP-22	46 m	Main Road (AH1)	
	DP-22	SP-337	45 m	Main Road (AH1)	
	SP-337	SP-338	46 m	Main Road (AH1)	
	SP-338	SP-339	45 m	Main Road (AH1)	
	SP-339	SP-340	46 m	Main Road (AH1)	
	SP-340	SP-341	45 m	Main Road (AH1)	
	SP-341	SP-342	45 m	Main Road (AH1)	
	SP-342	SP-343	48 m	Main Road (AH1)	
	SP-343	SP-344	46 m	Main Road (AH1)	
	SP-344	SP-345	45 m	Main Road (AH1)	
	SP-345	SP-346	46 m	Main Road (AH1)	
	SP-346	SP-347	46 m	Main Road (AH1)	
	SP-347	SP-348	48 m	Main Road (AH1)	
	SP-348	SP-349	47 m	Main Road (AH1)	
	SP-349	SP-350	47 m	Main Road (AH1)	
	SP-350	DP-23	47 m	Main Road (AH1)	
	DP-23	SP-351	47 m	Main Road (AH1)	
	SP-351	SP-352	45 m	Main Road (AH1)	
	SP-352	SP-353	45 m	Main Road (AH1)	
	SP-353	SP-354	45 m	Main Road (AH1)	
	SP-354	SP-355	45 m	Main Road (AH1)	
	SP-355	SP-356	46 m	Main Road (AH1)	
	SP-356	SP-357	45 m	Main Road (AH1)	
	SP-357	SP-358	45 m	Main Road (AH1)	
	SP-358	SP-359	45 m	Main Road (AH1)	
	SP-359	SP-360	45 m	Main Road (AH1)	
	SP-360	SP-361	47 m	Main Road (AH1)	
	SP-361	SP-362	47 m	Main Road (AH1)	
	SP-362	SP-363	45 m	Main Road (AH1)	
	SP-363	SP-364	46 m	Main Road (AH1)	
	SP-364	SP-365	47 m	Main Road (AH1)	
	SP-365	SP-366	47 m	Main Road (AH1)	
	SP-366	SP-367	46 m	Main Road (AH1)	



Name of Package:	ASM-DMS-02
Name of Work:	33kV New Line from Proposed 132kV/33kV Sarupathar Substation to Existing 33/11kV Sariajan Substation

Route 2

SL NO	Pole From	Pole To	Span (Meter)	Description of Land	Nature of damage
	SP-367	SP-368	47 m	Main Road (AH1)	
	SP-368	SP-369	46 m	Main Road (AH1)	
	SP-369	SP-370	46 m	Main Road (AH1)	
	SP-370	SP-371	46 m	Main Road (AH1)	
	SP-371	DP-24	44 m	Main Road (AH1)	
	DP-24	SP-372	46 m	Main Road (AH1)	
	SP-372	SP-373	47 m	Main Road (AH1)	
	SP-373	SP-374	46 m	Main Road (AH1)	
	SP-374	SP-375	47 m	Main Road (AH1)	
	SP-375	SP-376	47 m	Main Road (AH1)	
	SP-376	SP-377	47 m	Main Road (AH1)	
	SP-377	SP-378	47 m	Main Road (AH1)	
	SP-378	SP-379	46 m	Main Road (AH1)	
	SP-379	SP-380	47 m	Main Road (AH1)	
	SP-380	SP-381	47 m	Main Road (AH1)	
	SP-381	SP-382	46 m	Main Road (AH1)	
	SP-382	SP-383	47 m	Main Road (AH1)	
	SP-383	SP-384	46 m	Main Road (AH1)	
	SP-384	SP-385	46 m	Main Road (AH1)	
	SP-385	SP-386	46 m	Main Road (AH1)	
	SP-386	SP-387	46 m	Main Road (AH1)	
	SP-387	SP-388	46 m	Main Road (AH1)	
	SP-388	SP-389	46 m	Main Road (AH1)	
	SP-389	SP-390	47 m	Main Road (AH1)	
	SP-390	SP-391	47 m	Main Road (AH1)	
	SP-391	SP-392	47 m	Main Road (AH1)	
	SP-392	DP-25	46 m	Main Road (AH1)	
	DP-25	SP-393	46 m	Main Road (AH1)	
	SP-393	SP-394	46 m	Main Road (AH1)	
	SP-394	SP-395	47 m	Main Road (AH1)	
	SP-395	SP-396	47 m	Main Road (AH1)	
	SP-396	SP-397	47 m	Main Road (AH1)	
	SP-397	SP-398	47 m	Main Road (AH1)	
	SP-398	SP-399	45 m	Main Road (AH1)	
	SP-399	SP-400	47 m	Main Road (AH1)	
	SP-400	SP-401	47 m	Main Road (AH1)	
	SP-401	SP-402	47 m	Main Road (AH1)	
	SP-402	SP-403	46 m	Main Road (AH1)	
	SP-403	SP-404	47 m	Main Road (AH1)	
	SP-404	SP-405	45 m	Main Road (AH1)	
	SP-405	DP-26	50 m	Main Road (AH1)	
	DP-26	SP-406	46 m	Main Road (AH1)	
	SP-406	SP-407	46 m	Main Road (AH1)	
	SP-407	SP-408	45 m	Main Road (AH1)	
	SP-408	SP-409	48 m	Main Road (AH1)	
	SP-409	SP-410	46 m	Main Road (AH1)	
	SP-410	SP-411	46 m	Main Road (AH1)	
	SP-411	SP-412	47 m	Main Road (AH1)	
	SP-412	SP-413	46 m	Main Road (AH1)	
	SP-413	SP-414	45 m	Main Road (AH1)	

Name of Package:	ASM-DMS-02
Name of Work:	33kV New Line from Proposed 132kV/33kV Sarupathar Substation to Existing 33/11kV Sariajan Substation

Route 2

SL NO	Pole From	Pole To	Span (Meter)	Description of Land	Nature of damage
	SP-414	SP-415	45 m	Main Road (AH1)	
	SP-415	SP-416	47 m	Main Road (AH1)	
	SP-416	SP-417	47 m	Main Road (AH1)	
	SP-417	SP-418	47 m	Main Road (AH1)	
	SP-418	SP-419	46 m	Main Road (AH1)	
	SP-419	SP-420	46 m	Main Road (AH1)	
	SP-420	SP-421	46 m	Main Road (AH1)	
	SP-421	SP-422	47 m	Main Road (AH1)	
	SP-422	SP-423	46 m	Main Road (AH1)	
	SP-423	SP-424	46 m	Main Road (AH1)	
	SP-424	SP-425	45 m	Main Road (AH1)	
	SP-425	SP-426	47 m	Main Road (AH1)	
	SP-426	SP-427	47 m	Main Road (AH1)	
	SP-427	SP-428	46 m	Main Road (AH1)	
	SP-428	DP-27	47 m	Main Road (AH1)	
	DP-27	SP-429	49 m	Main Road (AH1)	
	SP-429	SP-430	47 m	Main Road (AH1)	
	SP-430	SP-431	46 m	Main Road (AH1)	
	SP-431	SP-432	46 m	Main Road (AH1)	
	SP-432	SP-433	46 m	Main Road (AH1)	
	SP-433	SP-434	46 m	Main Road (AH1)	
	SP-434	SP-435	45 m	Main Road (AH1)	
	SP-435	SP-436	46 m	Main Road (AH1)	
	SP-436	SP-437	45 m	Main Road (AH1)	
	SP-437	SP-438	46 m	Main Road (AH1)	
	SP-438	SP-439	45 m	Main Road (AH1)	
	SP-439	SP-440	46 m	Main Road (AH1)	
	SP-440	SP-441	46 m	Main Road (AH1)	
	SP-441	SP-442	47 m	Main Road (AH1)	
	SP-442	SP-443	46 m	Main Road (AH1)	
	SP-443	SP-444	47 m	Main Road (AH1)	
	SP-444	SP-445	47 m	Main Road (AH1)	
	SP-445	SP-446	46 m	Main Road (AH1)	
	SP-446	SP-447	45 m	Main Road (AH1)	
	SP-447	SP-448	45 m	Main Road (AH1)	
	SP-448	SP-449	45 m	Main Road (AH1)	
	SP-449	DP-28	48 m	Main Road (AH1)	
	DP-28	SP-450	47 m	Main Road (AH1)	
	SP-450	SP-451	47 m	Main Road (AH1)	
	SP-451	SP-452	46 m	Main Road (AH1)	
	SP-452	SP-453	47 m	Main Road (AH1)	
	SP-453	DP-29	47 m	Main Road (AH1)	
	DP-29	SP-454	46 m	Main Road (AH1)	
	SP-454	SP-455	45 m	Main Road (AH1)	
	SP-455	SP-456	45 m	Main Road (AH1)	
	SP-456	SP-457	45 m	Main Road (AH1)	
	SP-457	SP-458	47 m	Main Road (AH1)	
	SP-458	SP-459	39 m	Main Road (AH1)	
	SP-459	SP-460	51 m	Main Road (AH1)	
	SP-460	SP-461	47 m	Main Road (AH1)	



Name of Package:	ASM-DMS-02
Name of Work:	33kV New Line from Proposed 132kV/33kV Sarupathar Substation to Existing 33/11kV Sariajan Substation

Route 2

SL NO	Pole From	Pole To	Span (Meter)	Description of Land	Nature of damage
	SP-461	DP-30	48 m	Main Road (AH1)	
	DP-30	SP-462	46 m	Paddy Field/Private Land	
	SP-462	SP-463	45 m	Paddy Field/Private Land	
	SP-463	DP-31	48 m	Paddy Field/Private Land	
	DP-31	SP-464	46 m	Paddy Field/Private Land	
	SP-464	SP-465	44 m	Paddy Field/Private Land	
	SP-465	SP-466	47 m	Paddy Field/Private Land	Tree cutting may be required
	SP-466	FP-10	25 m	Paddy Field/Private Land	
	FP-10	GANTRY	9 m	Existing 33/11KV Substation at Sariajan	

Suman Ghosh
08/07/2017
Suman Ghosh
क्षेत्र अभियंता (विद्युत) / Field Engineer (Elect.)
एन.इ.आर.पि.एस.आइ.पि./NERPSIP
पावरग्रिड/Powergrid
सरुपथार/Sarupathar

D. D. Misra
05/07/17
दि.दि.मिश्र/D. D. Misra
सह. महा प्रबंधक/Asst. General Manager
एन.इ.आर.पि.एस.आइ.पि./NERPSIP
पावरग्रिड/Powergrid
सरुपथार/Sarupathar



Dipha
19/07/2017
Bokajan Electrical Sub-Division
APOCL (CAZ) ASEB Bokajan

M. K.
Assistant General Manager
Dipha Electrical Division
APDCL, CAR, Diphu

R. G.
19/07/2017
Junior Manager
Bokajan Electrical Sub Division
APDCL, CAR, Bokajan
Date

ANNEXURE III

Sample Case of Compensation Payment

COMPENSATION NOTICE



ASSAM POWER DISTRIBUTION CORPORATION LIMITED (APDCL)

SI No 006

Project : Construction of 33 KV line from 132 kv Teok s/s to 33 kv Jhaji s/s under NERPSIP
(A project funded by Govt. of India and the World Bank)

Implementing Agency : Power Grid Corporation of India Limited (A Govt. of India Enterprise)

To, ✓ Sri/Smt. DHAN KHAN Location/Span: FP-03

Dear Sir/Madam,
APDCL has undertaken the construction of a **33 KV** line from Teok s/s to 33 kv Jhaji s/s under the scope of **North Eastern Region Power System Improvement Project (NERPSIP)**, a project founded by Govt. of India and the World Bank, whereas, **Power Grid Corporation of India Limited (A Govt. of India Enterprise)** is the Implementing Agency of the project. In this regard, this is to inform you that the aforesaid 33 KV line will pass through your land noted as under. The standing trees/plantation on the said plot of land will be unavoidably damaged/cut during **foundation/erection/stringing (tick appropriate)** of the said line and you will be compensated by POWERGRID for the damages as per the assessment of District/Revenue Authority. The trees/plantations, so cut will be handed over to you at site after cutting.

Name of the Land Owner: DHAN KHAN Revenue Circle: TEOK
 Father's name: Late NURUDDIN KHAN District: JORHAT
 Village: Mauza : Jhaji Churamoni Muslim Gaon Dag No/Patta No: 728/166
Mauza - Simuluguri

Description of trees/plantation etc.

S N	Name of Trees/Plantation	Affected Area in sq. m	Size/Girth/Age	Quantity (Nos)	Remarks
1.	<u>Jathi Bamboo</u> <u>(medium)</u> <u>Big</u>	-	<u>MEDIUM</u> <u>Big</u>	30	-

Signature of Land owner
[Signature]
Witness:
1. Rajib Khan
2.

[Signature] For POWERGRID
चन्द्र शेखर भट्ट, अभियन्ता
CHANDRA SHEKHAR BHATT, ENGINEER
पावरग्रिड, एन. ई. आर. पी. एस. आई. पी, टियक
POWERGRID, NERPSIP, TEOK

FOR APDCL
[Signature]
Sub-Divisional Engineer
Gausagar Electrical Sub-Division
DCL, Gausagar

Verification by Revenue Authority

Certified that the land under Dag. No. 728 Patta No. 166 Village Jhaji Churamoni Muslim Gaon Mauza SIMULUGURI under TEOK Revenue Circle, belongs to Sri/Smt DHAN KHAN

The above mentioned trees/plantations will be damaged during construction of the said line. Necessary compensation towards the damages may be released to the affected land owner.

[Signature] 09-10-21
शम्भु नारायण दे, वरिष्ठ उप. महाप्रबंधक
S. N. DEY, SR. DY. GENERAL MANAGER
पावरग्रिड, एन. ई. आर. पी. एस. आई. पी, टियक
POWERGRID, NERPSIP, TEOK

[Signature]
Signature of the Circle Officer
OFFICER
REVENUE CIRC
JORHAT

Assam Schedule XXIV (Part-I) Form No. 15A.

বহীৰ নং

ক্রমিক নং 8626281

2020/2021

কোন চনৰ বাবে 2020/2021

তাৰিখ ৬/১০/২০২০

কাৰ পৰা পোৱা হ'ল ২ ৱং উইমছৰ আন } নিজা - লুকুটিয়া ১
 কাৰ বাবে পোৱা হ'ল ৪ ৱং প্ৰন আন }

গাওঁৰ নাম	পট্টাৰ নম্বৰ		খাজানা	স্থানীয় কৰ	আন প্ৰকাৰৰ দিবলগীয়া	মিৰাণ	দৈনিক আমদানীৰ ক্রমিক নম্বৰ
	একক	মাদী					
চুজামনি	—	০১	২৯৫.২০	৭৪.০৫			
৷	—	১৬২	২০১.৩০	০০.৬৫			
৷	—	২৬৬	১২০.৪০	৬১.৩৫			
৷	—	৩৭১	২০.০০	৫.০০			
			৬৪৬.৯০	১৬১.০৫			
			= ৫০৬.৯৫ টকা				

মুঠ আখৰেৰে

Assam Govt.Press-103/20-21

মোজাদাৰৰ চহী

২. বৰুৱা

স্বাক্ষৰ
 নিৰ্বাহকী
 আফিস

Generally used abbreviations

a/c = Account	dep = Deposit	Pr = Principal
adj = Adjustment	Dft = Draft	Proc = Processing Charge
Amt = Amount	dish/dsh = Dishonour	rd = Recurring Deposit
Ar = Arrear	DR = Debit	ret/rtn = Return
bal = Balance	DoB = Date of Birth	Rnd = Round of
Capn = Capitalization	eft = Electronic Fund Transfer	sb = Savings Bank
chg/ch = Charge	Inop = Inoperative	SC = Short Credit
Chq = Cheque	ins = Insurance	SI/So/SORD = Standing Instruction
Clos = Closure	int/in = Interest	S/D/W/H/o = Son/Daughter/Wife/Husband of
coll = Collection	lon/ln = Loan	tr/trf/xfer = Transfer
comm = Commission	min = Minimum	TT = Telegraphic Transfer
COR/CORR = Correction	os = Outstanding	txn = Transaction
CR = Credit	P & T = Postage & Telegram	Wdl = Withdrawal
csh = Cash	Pos = Point of sale	+MOD bal = total balance (SB+linked MOD a/c)



State Bank of India
Branch Manager

भारतीय स्टेट बैंक

SB TINY SPL-OD-GEN-PUB IND-ALL
CIF No : 89757601078
Account No : 36730464422
Customer Name: Mr. DHAN KHAN

S/D/W/H/o: NURUDDIN KHAN
Address: JHANJI

JHANJIMUSLIMGAOIN

Phone:
Email:
D.O.B. (If Minor):
MOP.: SINGLE
Nom. Reg. No.: 0000000195957588



State Bank of India

BAMUNPUKHURI
BAMUNPUKHURI

Phone: 2396303

Email:

Branch Code: 9193

Date of Issue: 25/05/2017

25/05/2017 1942395 9193

IFSC: SBIN0009193

MICR: 785002501

FIRST



HELP LINE *1800 11 2211*

ANNEXURE IV

Social Management Framework

Part A: Acquisition of Lands and Structures.

- The availability of land for substations is an potential social issue as fresh lands will be required for construction of substations. AEGCL/APDCL shall secure/acquire the required land either through direct purchase on willing buyer & willing seller basis on negotiated rate or by invoking provisions of RFCTLARRA, 2013. The present land availability status of substations involved in tranche-1 is provided in Table –1.

Table – 1: Land Availability Status for Substation

Sl. No.	Name of the substation	Scope of work	Land Status
A. Transmission Substations			
1	220/132 kV Amingaon (GIS)	New	Land for 5 new substations (i.e. <i>Behiating, Guwahati Medical College, Silapather, Paltanbazar, & Sarupather</i>) and all extension substations are available with AEGCL. For remaining 6 new substations, the required land shall be secured either through direct purchase on willing buyer & willing seller basis on negotiated rate or by invoking provisions of RFCTLARRA, 2013
2	220/132 kV Behiating (New Dibrugarh)	New	
3	132/33 kV Guwahati Medical College (GIS)	New	
4	132/33 kV Chapakhowa	New	
5	132/33 kV Silapather	New	
6	132/33 kV Hazo	New	
7	132/33 kV Paltanbazar (GIS)	New	
8	132/33 kV Tangla	New	
9	132/33 kV Sarupather	New	
10	132/33 kV Tezpur New	New	
11	132/33 kV Teok	New	
12	220/132 kV Rangia	Augmentation	
13	220/132 kV Tinsukia	Augmentation	
14	132/33 kV Dhemaji SS	Augmentation	
15	132/33 kV Sonabil	Augmentation	
16	132/33 kV Rupai	Augmentation	
17	132/33 kV Kahilipara	Augmentation	
18	132/33 kV Kamakhya (GIS)	Augmentation	
19	220/132 kV Samaguri	Augmentation	
20	132/33 kV Dhaligaon	Augmentation	
B. Distribution Substations			
1	33/11 kV substation (16 Nos.)	New	APDCL has identified land for these substations and the required lands shall be secured either through direct purchase on willing buyer & willing seller basis on negotiated rate or by invoking provisions of RFCTLARRA, 2013.

- As per the provisions of ESPP land for substations covered under tranche-1 can be secured through following three methods;

- i) Purchase of land on willing buyer & Willing Seller basis on negotiated rate;
 - ii) Voluntary Donation; and
 - iii) Involuntary Acquisition. .
3. In case of procurement of land through private purchase, AEGCL/APDCL shall ensure that compensation/rate for land is not less than the rate provided in the new land acquisition act, 2013. The finalization of land price/negotiation shall be through a committee. In order to comply with this provision AEGCL/APDCL may organize an awareness camp where provisions of new act in respect of basis/modalities of compensation calculation shall be explained to land owners with specific State provision if any.
 4. In case of voluntary donation of land the following shall be ensured:
 - The land user(s) will not be subjected to undue pressure for parting of land;
 - All out efforts shall be made to avoid any physical relocation/displacement due to loss of land;
 - The AEGCL/APDCL shall facilitate in extending ‘gratitude’ to the land donor(s) in lieu of the ‘contribution’ if so agreed. The same shall be documented in the shape of MoU between donor and utility and subsequently title of land transferred in the name of AEGCL/APDCL
 - All land donations (as well as purchases) will be subject to a review/ approval from a broad based committee comprising representatives of different sections including those from the IA and GoA.
 5. In case of land acquired through involuntary acquisition, provisions of RFCTLARRA, 2013 shall be adopted. RFCTLARRA, 2013 has replaced the old Land Acquisition Act, 1894 and has come into force from 1st January 2014. The new act i.e. RFCTLARRA, 2013 authorizes State Govt. (i.e. GoA) or its authorized Government agency to complete the whole process of acquisition of private land by following the laid down procedures in the act/rules which include detailed Social Impact Assessment (SIA) and preparation/disclosure of Social Impact Assessment Plan (SIMP). Responsibility for SIA and R&R rests with the government of Assam and AEGCL/APDCL’s responsibility is limited to identification and selection of suitable land based on technical requirement and ensuring budget allocation.
 6. The provisions of new RFCTLARR Act, 2013 has brought about synergies with the World Bank policy and practices. These imply provisions like Social Impact Assessment; R&R Provisions and Entitlements; Focus on those losing livelihoods; Census surveys and R&R Plan; Providing options and choices; Replacement cost of Land and Assets (Net of Taxes); Additional provisions for disadvantaged groups; Full payment of compensation and R&R prior to taking over of land and assets and Consultations & Disclosures, Post implementation

social audit and impact evaluation etc that are also key to the World Bank Involuntary Resettlement Policy.

Safeguards against land acquisition:

7. The act has many provisions which will safeguard against indiscriminate acquisition of farm land and associated impacts like project specific SIA to conclude whether the proposed acquisition serves the public purpose; estimation of affected families and families likely to be displaced; extent of lands, public and private, houses, settlements and other CPRs likely to be affected; whether the extent of land proposed is absolutely bare minimum requirement; whether other alternative sites were considered and found not feasible and whether the social benefits outweigh social costs. Act has special provisions for land inhabited by SCs, STs; provisions restricting acquisition of land in excess of requirement. It discourages acquisition of multi-crop and irrigated land, and makes consent of land owners mandatory for private & PPP projects.

Entitlements:

8. The entitlements with regard to compensation and assistances towards land acquisition or loss of any assets or livelihood for all categories of people being affected due to land acquisition is briefly outlined in Table – 2.

TABLE-2. MINIMUM COMPENSATION & R&R ENTITLEMENTS FOR LAND ACQUISITION

A. Comprehensive Compensation Package	
Eligibility for Entitlement	Provisions
<p>The affected families</p> <ul style="list-style-type: none"> • <u>Land Owners: includes any person-</u> <ol style="list-style-type: none"> i) whose name is recorded as (he owner of the land or building or part thereof, in the records of the authority concerned; or ii) any person who is granted forest rights under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 or under any other law for the time being in force; or iii) who is entitled to be granted Patta rights on the land under any law of the State including assigned lands: or iv) any person who has been declared as such by an order of the court or Authority; 	<p>Determination of Compensation :</p> <ol style="list-style-type: none"> 1. Market value of the land <ul style="list-style-type: none"> • as specified in the Indian Stamp Act, 1899 or • the average of the sale price for similar type of land situated in the village or vicinity, or • consented amount of compensation as agreed in case of acquisition of lands for private companies or for public private partnership project. <p>whichever is higher</p> <p>Market value x Multiplier* between 1 to 2 in rural areas only (No multiplier in urban areas).</p> <ol style="list-style-type: none"> 2. Value of the assets attached to land: <ul style="list-style-type: none"> Building/Trees/Wells/Crop etc. as valued by relevant govt. authority; <p>Land compensation = 1+2</p> <ol style="list-style-type: none"> 3. Solatium: 100% of total compensation <p style="background-color: yellow;">Total Compensation : 1+2+3</p>

(*) Precise scale shall be determined by the State Govt.

The indicative values of multiplier factor based on distance from urban areas as provided in the act.

Radial Distance from Urban area (Km)	Multiplier Factor
0-10	1.00
10-20	1.20
20-30	1.40
30-40	1.80
40-50	2.00

B. R&R Package

Elements of Rehabilitation and Resettlement Entitlements for all the affected families (both land owners and the families whose livelihood is primarily dependent on land acquired) in addition to compensation provided above

Sl. No.	Elements of R& R Entitlements	Provision
1.	Subsistence grant/allowance for displaced families	Rs. 3000 per month per family for 12 months
2.	The affected families shall be entitled to:	a. Where jobs are created through the project, mandatory employment for one member per affected family; or b. Rupees 5 lakhs per family; or c. Rupees 2000 per month per family as annuity for 20 years, with appropriate index for inflation; The option of availing (a) or (b) or (c) shall be that of the affected family
3.	Housing units for displacement: i) If a house is lost in rural areas: ii) If a house is lost in urban areas	i. A constructed house shall be provided as per the Indira Awas Yojana specifications. ii. A constructed house shall be provided, which will be not less than 50 sq. mts. in plinth area. In either case the equivalent cost of the house may also be provided in lieu of the house as per the preference of the project affected family. The stamp duty and other fees payable for registration of the house allotted to the affected families shall be borne by the Requiring Body.
4.	Transportation cost for displaced families	Rs 50,000/- per affected family
5.	Resettlement Allowance (for displaced families)	Onetime Rs 50,000/- per affected family
6.	Cattle shed/ petty shop cost	Onetime financial assistance as appropriate for construction as decided by St. Govt. subject to minimum of Rs.25,000/-
7.	Artisan/small traders/others (in case of displacement)	Onetime financial assistance as appropriate as decided by St. Govt. subject to minimum of Rs.25,000/-

Special Provisions for SCs/STs

In addition to the R&R package, SC/ST families will be entitled to the following additional benefits:

1. One time financial assistance of Rs. 50,000 per family;
2. Families settled outside the district shall be entitled to an additional 25% R&R benefits;
3. Payment of one third of the compensation amount at very outset;

4. Preference in relocation and resettlement in area in same compact block;
5. Free land for community and social gatherings;
6. In case of displacement, a *Development Plan is to be prepared*
7. *Continuation of reservation and other Schedule V and Schedule VI area benefits from displaced area to resettlement area.*

Social Impact Management Plan (SIMP):

Establishment of Institutions

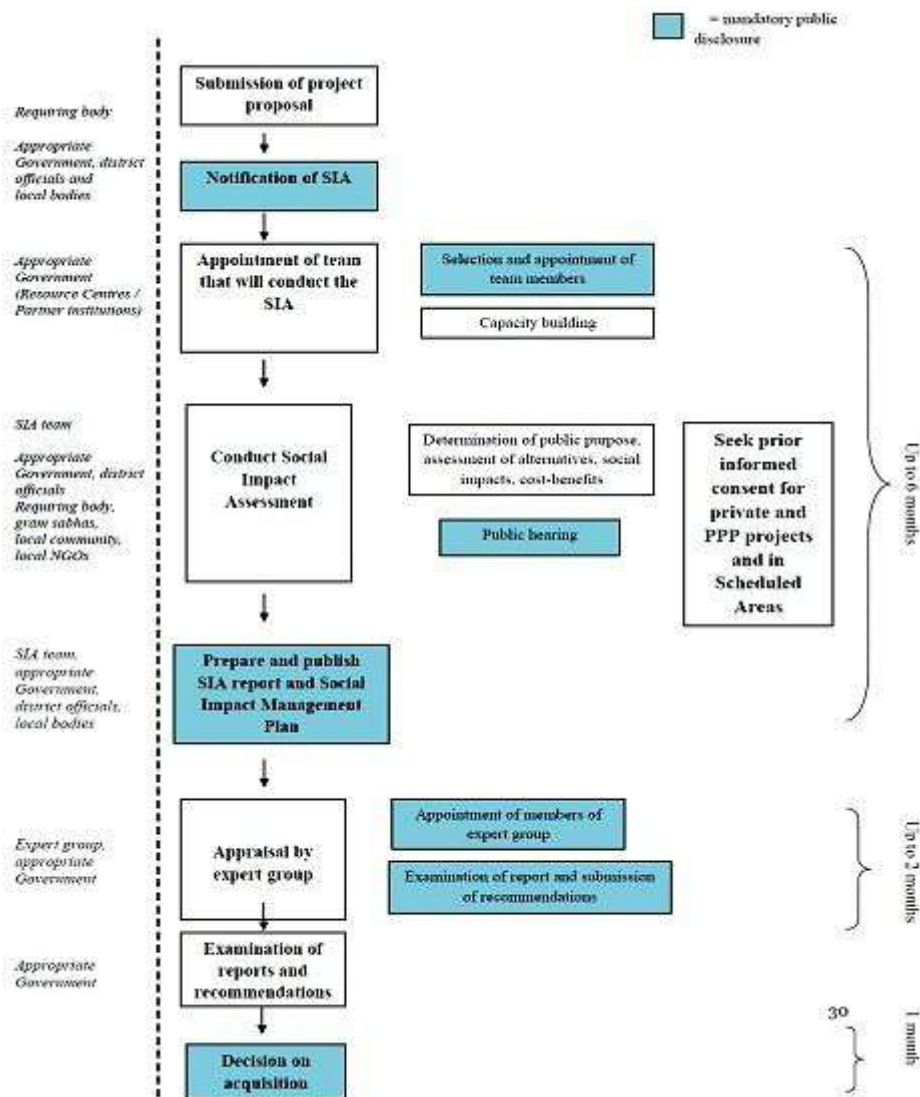
9. The following bodies are to be established permanently in the state (to cater to all projects proposed in future):
 - **The State Social Impact Assessment Unit;**
 - ✓ selecting the SIA team for each project from the individuals and institutions registered/empanelled in the State Database
 - ✓ To develop Project specific ToR
 - ✓ Ensuring no conflicts of interest involving the team members
 - **Land Acquisition Rehabilitation and Resettlement Authority**
 - ✓ Appointment of Presiding Officer
 - **The office of the Commissioner Rehabilitation & Resettlement**
 - ✓ Appointment of Commissioner Rehabilitation and Resettlement
 - ✓ Appointment of Project Specific Administrator for Rehabilitation and Resettlement
 - **The State Level Monitoring Committee**
 - **User-friendly website as a public platform to disclose entire work flow of each acquisition case.**
 - **Formulation of Expert group to study SIA report and recommendation**
 - ✓ Commissioner, R&R to appoint the members of the Expert Group
 - ✓ Names of group members to be publically disclosed
10. On confirmation of the scheme and finalization of land after exploring alternative site, the AEGCL/APDCL's would submit a proposal for acquisition of private selected land detailing the extent of land and its exact location. After due process of approval the government shall notify the affected area where selected land is situated for conducting detailed social assessment.

Social Impact Assessments

- A detailed Social Impact Assessment (SIA) studies shall be undertaken by an Independent Agency/Institution on a project specific TOR. The SIA agency shall first consult the concerned Panchayat, Municipality, District/Village Council at village level or ward level in the affected area to carry out SIA study. SIA shall assess the purpose of acquisition and estimate the affected families, gender, social group carry out analysis regarding impact on community properties, assets and infrastructure particularly roads, public transport, drainage, sanitation, sources of drinking water, sources of water for cattle, community ponds grazing land, plantations, public utilities electricity supply and health care facilities. The SIA agency shall also prepare a Social Impact Management Plan (SIMP) listing ameliorative measures required for addressing the likely impact vis-à-vis intended benefit of the project. The SIA report and SIMP shall be subject to public hearing in the affected area after giving adequate publicity for the venue, time etc to ascertain the views of affected families/communities which shall be included in the SIA.

The final SIA report shall be published including its translation in local language and shall also be made available to Panchyats, District/Village Councils & Deputy Collector/District Magistrate office for wider circulation. Explicit consent will be required in the case of lands in respect of tribal areas from ADC and the Village Councils. The process flowchart of SIA is presented in Fig-1.

Fig-1 Process Flow chart of Social Impact assessment (SIA)



Compensation and Rehabilitation and Resettlement (R&R):

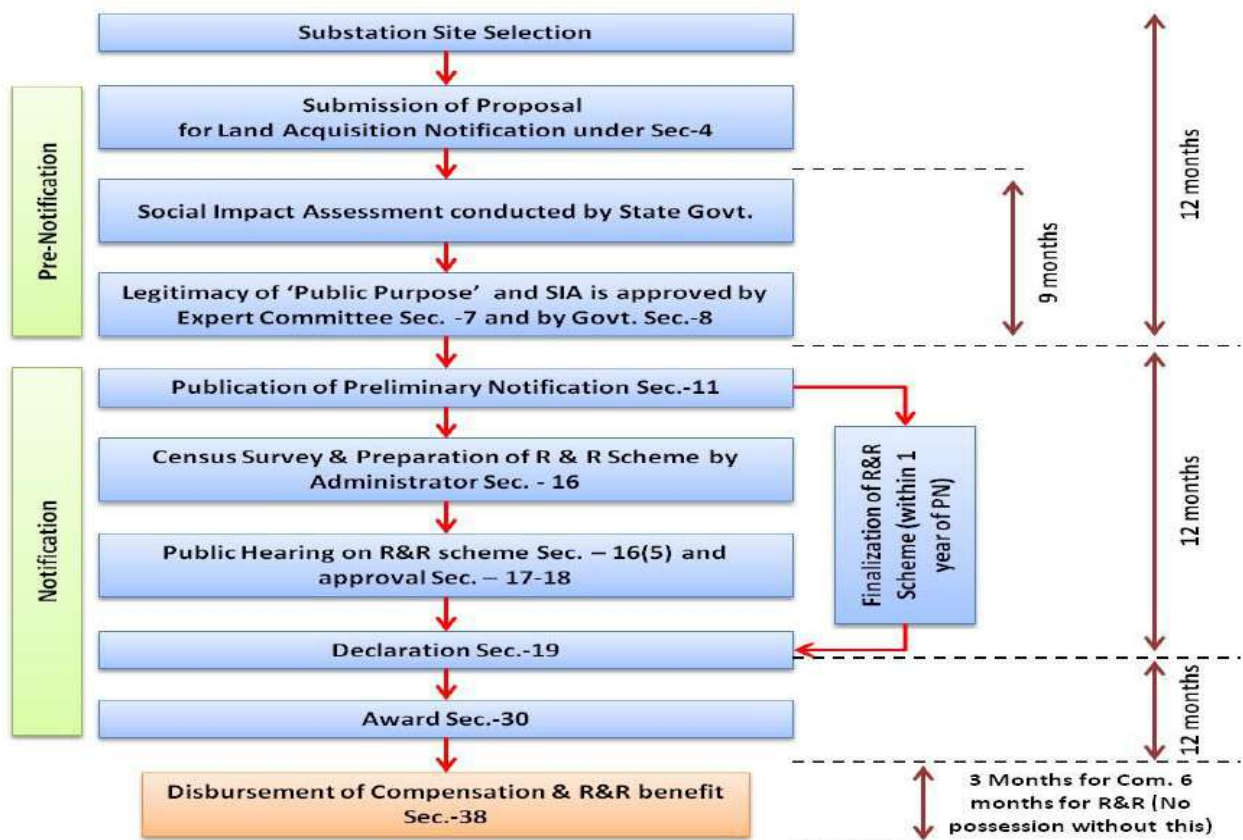
- Based on the SIMP, the Collector shall discuss the Package in a meeting with the Rehabilitation and Resettlement committee at project level, and submit the Package to Commissioner Rehabilitation and Resettlement along with his/ her remarks.
- The Commissioner Rehabilitation and Resettlement shall, after due vetting, accords approval to the scheme and make it available in public domain.
- After approval of R & R plan by Commissioner R & R , the Collector shall issue two awards one for land compensation based on procedures described in act & State’s rules

and second for R & R as per approved SIMP .

- The Collector shall take possession of land after ensuring that full payment of compensation as well as rehabilitation and resettlement entitlements are paid or tendered to the entitled persons within a period of three months for the compensation and a period of six months for the monetary part of rehabilitation and resettlement entitlements as approved and commencing from the date of the award.
- The Collector shall be responsible for ensuring that the rehabilitation and resettlement process is completed in all its aspects before displacing the affected families.
- The Collector shall, as far as possible, not displace any family which has already been displaced by the appropriate Government for the purpose of acquisition under the provisions of this Act, and if so displaced, shall pay an additional compensation equivalent to that of the compensation determined under this Act for the second or successive displacements.

The complete activity flow chart is described in Fig -2 . It may take about three years to complete the processes. It is also mandatory that no construction can start without the full payment of the compensations.

FIGURE 2: ACTIVITY CHART RFCTLARRA, 2013



PART B:

Compensation Plan for Temporary Damages (CPTD) towards Erection of Tower/ Poles for Transmission/ Distribution lines

1. Land requirements for erecting tower/ poles for transmission/ distribution lines are just minimal. All it requires is to place the foot, four of which warrants an area of 4-6 sq- ft. Lands in respect of the right of way are not acquired as agricultural activities can continue beneath the tower. Further, line alignments are done in such a way so as to avoid settlements and / or structures. Due to inherent flexibility in locating the poles, AEGCL/APDCL's avoids habituated area completely hence no relocation of population on account of TL/DL lines are envisaged. Thus, the actual impact is restricted to 4 legs of the tower. Agriculture can continue, as clearly depicted in the figure-3 . As per existing law, land for tower/pole and right of way is not acquired and agricultural activities are allowed to continue after construction activity. However, AEGCL/APDCL pays compensation to the affected persons/ community for all damages including cost of land below tower to its owner without acquiring it. Thus, compensations are made for following::

- (i) land cost of tower footings;
- (ii) standing crops;
- (iii) trees, if any;
- (iv) other assets like well and
- (v) any other damages/ effects.

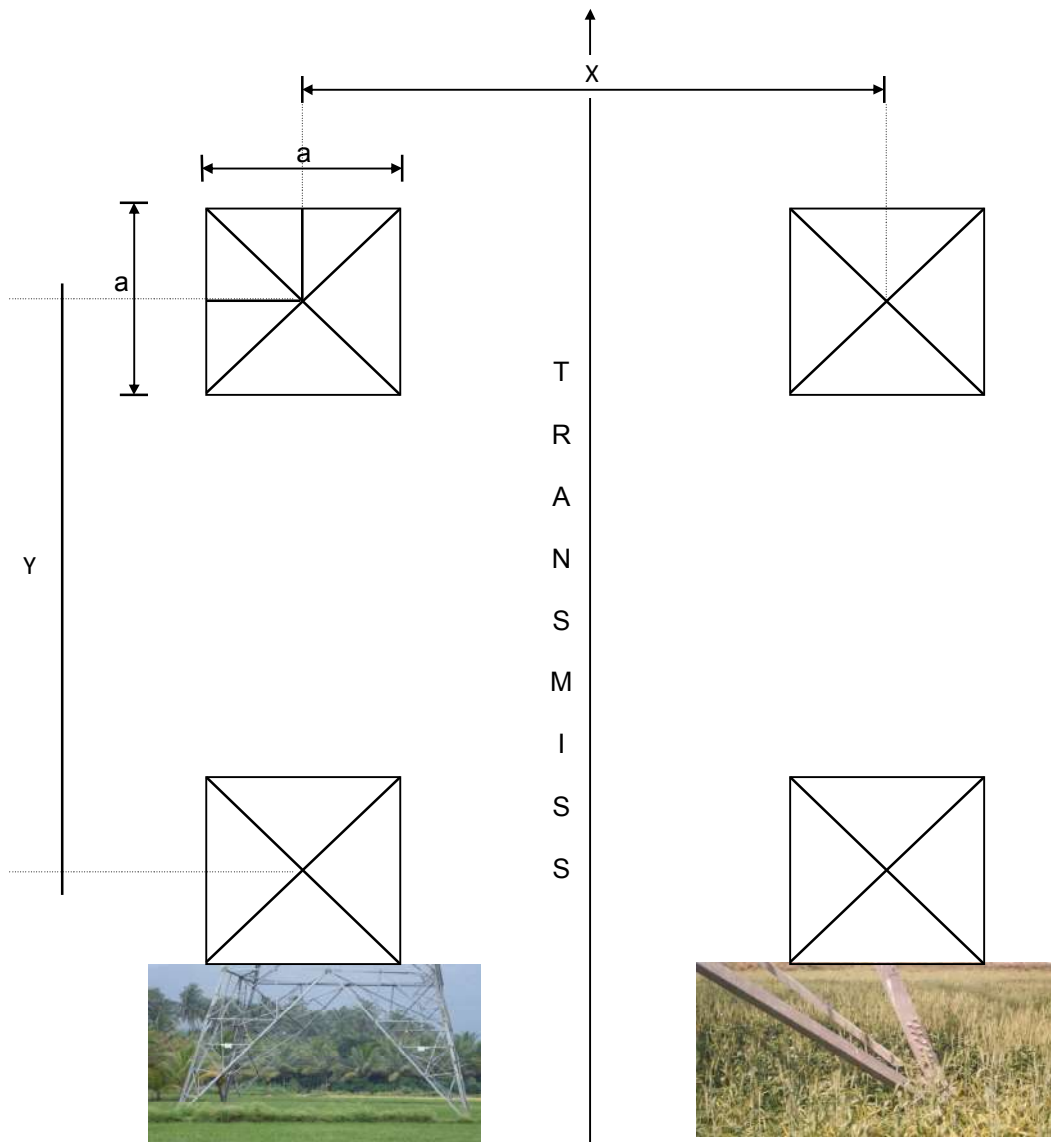
Capturing all these, the Implementing agency (IA) will prepare a Compensatory Plan for Temporary Damage (CPTD). The content/coverage of a typical CPTD is placed at the end.

2. **Process.** AEGCL/APDCL's through its "Bee" line survey (i.e. a desk review) on Survey of India (SOI) map (topo-sheets) preferably on 1:50,000 Scale, the Forest Atlas and or Google Earth map examine various route options at least 3 (Three) alternatives referring 'Bee' line as a guiding one between two or multiple origins of proposed transmission/distribution line avoiding/minimizing environmentally and socially sensitive areas based on base line data/information.

3. Taking reference to this desk review, a reconnaissance survey in-house or through other agency/ or walk-over survey is undertaken with hand-held GPS for on-site verifications to confirm findings of desk review survey or otherwise. During Recce or W/O survey it may also be possible to identify other better option of route following the criteria of avoidance & minimization, if so the same, after having collected/updated information/data may be considered as another alternative.

4. A Social (and Environmental) Assessment is conducted in respect of each of the chosen lines of alignment. The process involved extensive consultations with land owners/farmers and different stakeholders.

FIGURE-3 TYPICAL PLAN OF TRANSMISSION LINE TOWER FOOTINGS



ACTUAL POSITION ON GROUND

INDICATIVE MEASURES
X & Y = 10-15 METERS
a = 300- 450 mm

5. During the process public views and necessary inputs about surroundings/ villages/crops etc. are also necessary and noted for screening/scoping. After comparison and analysis of all E & S parameters so gathered for all alternatives and considering other significant economic benefit associated with the project/subproject, the most optimum route having minimum environment & social impact is selected for further investigation.

6. Site office will consults with state forest departments if the line is passing through forest areas. Revenue authorities will be consulted for their views on revenue/other lands. Experts' assistance will be taken, as appropriate, on valuing crops, trees and other assets.

7. Social Assessment concludes with: (i) selection of an optimum line; and (ii) a Social Management Plan viz., CPTD. All these are disclosed widely among the stakeholders as well as on the internet and evince a feedback. Due approval will be sought from District/ Village Councils. In case the scheme/project is implemented in predominantly tribal area a separate and comprehensive analysis in respect of likely impact both positive and negative shall be carried out and will be incorporated in the CPTD.

8. Responsibility for the conduction of SA, preparation of CPTD rests with the IA. The ultimate authority for vetting the affected persons and the nature and extent of compensations rests with the Collector. The entitlement matrix for planning compensation for possible impact is as follows:

Entitlement Matrix for CPTD

S. No	ISSUE/IMPACT	BENEFICIARY	ENTITLEMENT OPTIONS
1.	Land area below tower base.	Owner	100% land cost at market value as ascertained by revenue authorities or based on negotiated settlement without actual acquisition/title transfer.
2.	Loss/damage to crops and trees in line corridor	Owner/Tenant/ sharecropper/ leaseholder	Compensation to actual cultivator at market rate for crops and 8 years income for fruit bearing trees*. APs will be given advance notice to harvest their crops. All timber* will be allowed to retain by the owner.
3.	Other damages (if applicable)	All APs	Actual cost as assessed by the concerned authority.
4.	Loss of structure		
(i)	House	Titleholders	Cash compensation at replacement cost (without deduction for salvaged material) plus Rs. 25,000/- assistance (based on prevailing GOI norms for weaker section housing) for construction of house plus transition benefits as per category-5 below.
(ii)	Shop/ Institutions/ Cattle shed	Individual/ Titleholders	Cash compensation plus Rs. 10000/- for construction of working shed/shop plus transition benefits as per category-5 below

S. No	ISSUE/IMPACT	BENEFICIARY	ENTITLEMENT OPTIONS
5.	Losses during transition under (i) & (ii) above for Shifting / Transport	Family/unit	Provision of transport or equivalent cash for shifting of material/ cattle from existing place to alternate place
6	Tribal/ Vulnerable APs	Vulnerable APs ¹	One time additional lump sum assistance not exceeding 25% of total compensation on recommendation of State Authority/ADC/VC.

* Assistance/help of Forest department for timber yielding trees and Horticulture department for fruit bearing trees shall be taken for assessing the true value.

9. A notice under Indian Telegraph Act/Electricity Act, 2003 is served to the landowners informing that the proposed transmission line is being routed through the property of the individual concerned. The notice shall contain the particulars of the land, ownership details and the details of the trees/crops inevitably likely to be damaged during the course of the construction of the proposed transmission line and acknowledgement received from land owner. A copy of said notice is further issued to the Revenue Officer, who has been authorized by the Tripura Govt. for the purpose of assessment/valuation and disbursement of compensation to the affected parties.

10. The revenue officer shall further issue a notice of intimation to the concerned landowner and inspect the site to verify the documents related to the proof of ownership and a detailed Mouja list is prepared for the identified trees and crops inevitably damaged during the course of the construction. For assessing the true value of timber yielding trees help of forest officials is taken and for fruit bearing trees help of Horticulture department is taken.

11. The Mouja list shall contain the land owner details type of tree/crop, its present age, variety, yielding pattern etc. and the same is prepared at site in the presence of the land owner. These Mouja lists are further compiled and a random verification is conducted by the concerned District Collector or his authorized representative in order to ascertain the assessment carried out by the revenue office is genuine and correct. After this process the District collector issues a tree cutting permit to AEGCL/APDCL to enable removal / damage to the standing tree/crop identified in the line corridor.

12. Once the tree/crop is removed / damaged, AEGCL/APDCL shall issue a tree cutting/crop damaged notice to the land owner with a copy to the Revenue Officer to process the compensation payment. Based on the above the compensation payment is generated by means of a computerized programme developed by the National Informatics Center exclusively for this purpose. The detailed Valuation statement thus generated using this programme is verified at various levels and approval of payment of compensation is accorded by the concerned District Collectors.

13. On approval of compensation, the revenue officer shall further intimate the amount payable to the different landowners and AEGCL/APDCL arranges the payment by way of Demand Draft to the affected parties. The payment is further disbursed at the local village office after due verification of the documents in presence of other witnesses.

¹ Vulnerable APs include scheduled tribes residing in scheduled areas/ physically handicapped/ disabled families etc.

Content of Compensation Plan For Temporary Damages (CPTD)

Section - I: Project Description: Brief description of the background, benefits of the project, objective of compensation plan.

Section – II: Project Impacts : Minimization of impacts, description of alternative studies made for proposed route of transmission line including systematic analysis of different alternative studied with reference to particular environmental & social parameters like involvement of forest, protected areas, significant economic benefit associated with the project and without the project etc. and reason for selection of proposed route, analysis of impacts including numbers of affected persons/household, land use traversed etc.

Section – III: Socio-economic and Environmental Analysis for CPTD: Description of the physical, physiographical, socio-economic condition of the project area including other demographic features of the project area, Preliminary Social assessment, Impact due to project location and design and Critical social review criteria

Section -IV: Compensation Framework: Description of compensation plan, Procedure for tree/crops/land compensation.

Section – V: Stakeholders Participation & Compensation: Public Consultation during Preliminary Survey and peoples reaction/suggestion if any, Plan for further consultation during implementation

Section – VI: Institutional Arrangements for Implementation and Monitoring: Describing the implementation schedule, Grievances Redressal Mechanism, Disclosure, Evaluation and monitoring plan. Budget provision for compensation

Part C: Tribal People Development Framework

The preliminary assessments made during the project preparation have established that there are tribal people in the project area. It is also ascertained that they do have a collective attachment to the project area particularly in the scheduled area and that they may get affected by the project interventions. Accordingly, to ensure focused and exclusive attention towards such tribals it is envisaged to develop a “Tribal People Development Plan” (TPDP). Since proposed investment programs involve many sub-projects/schemes linear in nature running in different geographical area of state due to which precise information about the tribal people likely to be impacted is not yet firmed up. In order to overcome this limitation, a Tribal People Development Framework (TPDF) is developed which sets out approach and methodology for the preparation of a TPDP.

TPDF Objectives and Policies

1. The objectives of the TPDF are to ensure that if indigenous peoples²(referred to as tribal in India) tribal are affected by a project/scheme they:
 - i) are adequately and fully consulted;
 - ii) receive benefits and compensation equal to that of the mainstream population:
 - iii) are provided with special assistance as per laws and policies because of their vulnerabilities vis-à-vis the mainstream population; and
 - iv) receive adequate protection against project adverse impacts on their culture identities.

There are several policies which provide a legal framework for ensuring dedicate attention to the tribals. Article 366(25) of the Indian constitution refers to Scheduled Tribes (STs) as those communities who are scheduled in accordance with Article 342 of the Constitution. According to Article 342 of the Constitution, STs are the tribes or tribal communities or part of or groups within these tribes and tribal communities which have been declared as such by the President through a public notification. Identification of tribes is a State subject. Thus, classification of a tribe would depend on the status of that tribe in the respective State. Further the Fifth and Sixth Schedule of the constitution provides special provision for tribals in selected regions of the country.

² * **Indigenous People (IP)** referred as tribal in India are the distinct groups identified based on their social, cultural, economic, and political traditions and institutions, which are distinct from the mainstream or dominant society and culture. Tribal with similar cultural characteristics are known as 'Adivasi' in Hindi and are recognized as Schedule Tribes (STs) as per the Indian Constitution. As per OP-4.10 definition these are Members of a distinct indigenous cultural group, Collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories, Customary cultural, economic, social, or political institutions that are separate from those of the dominant society or culture, An indigenous language, often different from the official language of the country or region

2. The World Bank's Operational Policy on Indigenous Peoples (OP 4.10) aims at ensuring that the development process fosters full respect for the dignity, human rights and cultures of indigenous peoples, thereby contributing to the Bank's mission of poverty reduction and sustainable development. It also recognizes that the identities, cultures, lands and resources of indigenous peoples are uniquely intertwined and especially vulnerable to changes caused by development programs hence require special measures to ensure that they are included in and benefit from these programs as appropriate.

Identification of Indigenous Peoples

3. The term "Indigenous Peoples" is used in a generic sense to refer to a distinct, vulnerable, social and cultural group possessing the following characteristics in varying degrees:
 - (a) Self-identification as members of a distinct indigenous cultural group and recognition of this identity by others;
 - (b) Collective attachment to geographically distinct habitats or ancestral territories in the project area and to the natural resources in these habitats and territories;
 - (c) Customary cultural, economic, social, or political institutions that are separate from those of the dominant society and culture; and
 - (d) An indigenous language, often different from the official language of the country or region.
4. In Assam, certain areas have been declared as scheduled area as Specified by the Scheduled Areas under the Sixth Schedule of Indian Constitutions. Six schedule areas in Assam are Bodoland Territorial Council, Karbi Anglong Autonomous Council, Dima Hasao Autonomous District Council³.

Tribal People Development Framework (TPDF)

5. The TPDF seeks to ensure that tribal communities are informed, consulted, and mobilized to participate in the subproject preparation. The Framework is intended to guide selection and preparation of additional subprojects under the Project where impacts on tribal people are identified to ensure better distribution of the Project benefits and promote development of the indigenous peoples in the Project areas. The framework is prepared in accordance with both the Indian Constitution provisions, RFCTLARRA, 2013 and World Bank's OP-4.10 and serves the following purposes:
 - (a) Identification of the tribal people likely to be impacted by the project interventions;

³ Govt. of Assam has recently created 6 more Autonomous Councils viz. Rabha Hasong Autonomous Council (RHAC), Mishing Autonomous Council (MAC), Tiwa Autonomous Council (TAG), Deori Autonomous Council (DAC), Thengal Kachari Autonomous Council (TKAC) and Sonowal Kachari Autonomous Council (SKAC).

- (b) Assess the nature and extent of impacts likely to occur as a result of the project interventions;
- (c) Prepare a plan (TPDP) outlining measures towards avoiding/ minimizing the negative impacts as well as enhance positive impacts;
- (d) Outlines an approach for the conduction of social assessment for ensuring free, prior, and informed consultation with the affected tribal communities at each stage of project preparation and implementation;
- (e) Putting in place an implementation arrangements of the TPDP, its disclosure and mechanisms to address any grievances.

TPDF – Land Acquisition and Resettlement

6. Whenever after initial screening it is found that some land belonging to tribal community /communities is being needed to be involuntary acquired for setting up of a substation demonstrating/substantiating such acquisition is done only as a last resort by completing the technical investigation including assessment of alternatives and detailed surveys. The detailed report along with land requirement is submitted to the Government of Assam (GoA) for further processing as per provisions of RFCTLARRA, 2013. GOA then initiates a SIA through an Independent Agency with a project specific terms of reference. The SIA agency shall first consult the concerned Panchayat, Municipality, District/Village Council at village level or ward level in the affected area to carry out SIA study. SIA shall assess the purpose of acquisition and estimate the affected families, gender, social group carry out analysis regarding impact on community properties, assets and infrastructure particularly roads, public transport, drainage, sanitation, sources of drinking water, sources of water for cattle, community ponds grazing land, plantations, public utilities electricity supply and health care facilities. The SIA agency shall also prepare a Social Impact Management Plan (SIMP) listing ameliorative measures required for addressing the likely impact vis-à-vis intended benefit of the project. The SIA report and SIMP shall be subject to public hearing in the affected area after giving adequate publicity for the venue, time etc to ascertain the views of affected families/communities which shall be included in the SIA. The final SIA report shall be published including its translation in local language and shall also be made available to Panchyats, District/Village Councils & Deputy Collector/District Magistrate office for wider circulation. Detailing of the same is provided below:

- (i) the prior consent of the concerned Gram Sabha or the Panchayats or the autonomous District Councils at the appropriate level in Scheduled Areas under the Fifth Schedule to the Constitution, as the case may be, shall be obtained in all cases of land acquisition in such areas, before issue of a notification under this Act, or any other Central Act or a State Act for the time being in force.
- (ii) Provided that the consent of the Panchayats or the Autonomous Districts Councils shall be obtained in cases where the Gram Sabha does not exist or has not been constituted.
- (iii) In the case of a project involving land acquisition on behalf of a Requiring Body which

involves involuntary displacement of the Scheduled Castes or the Scheduled Tribes families, a Development Plan shall be prepared in such a form as may be prescribed. laying down the details of procedure for settling land rights due, but not settled and restoring titles of the Scheduled Tribes as well as the Scheduled Castes on the alienated land by undertaking a special drive together with land acquisition. This plan is targeted at both SCs and STs, but, for the current purpose, it is referred to as Tribal People Development Plan (TPDP) and contents of such a Development Plan are provided at the end.

- (iv) the TPDP also contain a program for development of alternate fuel, fodder and non-timber forest produce resources on non-forest lands within a period of five years sufficient to meet the requirements of tribal communities as well as the Scheduled Castes.
- (v) In the case of land being acquired from the members of the Scheduled Castes or the Scheduled Tribes, at least one-third of the compensation amount due shall be paid to the affected families initially as first instalment and the rest shall be paid after taking over of the possession of the land.
- (vi) The affected families of the Scheduled Tribes shall be resettled preferably in the same Scheduled Area in a compact block so that they can retain their ethnic, linguistic and cultural identity.
- (vii) The resettlement areas predominantly inhabited by the Scheduled Castes and the Scheduled Tribes shall get land, to such extent as may be decided by the appropriate Government free of cost for community and social gatherings.
- (viii) Any alienation of tribal lands or lands belonging to members of the Scheduled Castes in disregard of the laws and regulations for the time being in force shall be treated as Null and void. and in the case of acquisition of such lands, the rehabilitation and resettlement benefits shall be made available to the original tribal land owners or land owners belonging to the Scheduled Castes.
- (ix) The affected Scheduled Tribes, other traditional forest dwellers and the Scheduled Castes having fishing rights in a river or pond or dam in the affected area shall be given fishing rights in the reservoir area of the irrigation or hydel projects.
- (x) Where the affected families belonging to the Scheduled Castes and the Scheduled Tribes are relocated outside of the district, then they shall be paid an additional 25% rehabilitation and resettlement benefits to which they are entitled in monetary terms along with a one-time entitlement of Rs. 50,000/-.
- (xi) All benefits, including the reservation benefits available to the Scheduled Tribes and the Scheduled Castes in the affected areas shall continue in the resettlement area.
- (xii) Whenever the affected families belonging to the Scheduled Tribes who are residing in the Scheduled Areas referred to in the Fifth Schedule or the tribal areas referred to in the Sixth Schedule to the Constitution are relocated outside those areas, then, all the statutory safeguards, entitlements and benefits being enjoyed by them under this Act shall be extended to the area to which they are resettled regardless of whether the resettlement area is a scheduled Area referred to in the said Fifth Schedule or a tribal area referred to in the said Sixth Schedule, or not.
- (xiii) Where the community rights have been settled under the provisions of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006. The same shall be quantified in monetary amount and be paid to the individual who has been displaced.

Following entitlement matrix shall be the basis for providing compensation and compatible R&R measures for tribal peoples:

MINIMUM COMPENSATION & R&R ENTITLEMENTS FOR LAND ACQUISITION

A. Comprehensive Compensation Package		
Eligibility for Entitlement	Provisions	
<p>The affected families</p> <ul style="list-style-type: none"> • <u>Land Owners: includes any person-</u> v) whose name is recorded as (he owner of the land or building or part thereof, in the records of the authority concerned; or vi) any person who is granted forest rights under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006 or under any other law for the time being in force; or vii) who is entitled to be granted Patta rights on the land under any law of the State including assigned lands: or viii) any person who has been declared as such by an order of the court or Authority; 	<p>Determination of Compensation :</p> <p>4. Market value of the land</p> <ul style="list-style-type: none"> • as specified in the Indian Stamp Act, 1899 or • the average of the sale price for similar type of land situated in the village or vicinity, or • consented amount of compensation as agreed in case of acquisition of lands for private companies or for public private partnership project. <p>whichever is higher</p> <p>Market value x Multiplier* between 1 to 2 in rural areas only (No multiplier in urban areas).</p> <p>5. Value of the assets attached to land:</p> <p>Building/Trees/Wells/Crop etc. as valued by relevant govt. authority;</p> <p>Land compensation = 1+2</p> <p>6. Solatium: 100% of total compensation</p> <p>Total Compensation : 1+2+3</p>	
<p>(*) Precise scale shall be determined by the State Govt. The indicative values of multiplier factor based on distance from urban areas as provided in the act.</p>		
Radial Distance from Urban area (Km)	Multiplier Factor	
0-10	1.00	
10-20	1.20	
20-30	1.40	
30-40	1.80	
40-50	2.00	
B. R&R Package		
<p>Elements of Rehabilitation and Resettlement Entitlements for all the affected families (both land owners and the families whose livelihood is primarily dependent on land acquired) in addition to compensation provided above</p>		
Sl. No.	Elements of R& R Entitlements	Provision
1.	Subsistence grant/allowance for displaced families	Rs. 3000 per month per family for 12 months
2.	The affected families shall be entitled to:	<p>d. Where jobs are created through the project, mandatory employment for one member per affected family; or</p> <p>e. Rupees 5 lakhs per family; or</p>

		f. Rupees 2000 per month per family as annuity for 20 years, with appropriate index for inflation; The option of availing (a) or (b) or (c) shall be that of the affected family
3.	Housing units for displacement: iii) If a house is lost in rural areas: iv) If a house is lost in urban areas	iii. A constructed house shall be provided as per the Indira Awas Yojana specifications. iv. A constructed house shall be provided, which will be not less than 50 sq. mts. in plinth area. In either case the equivalent cost of the house may also be provided in lieu of the house as per the preference of the project affected family. The stamp duty and other fees payable for registration of the house allotted to the affected families shall be borne by the Requiring Body.
4.	Transportation cost for displaced families	Rs 50,000/- per affected family
5.	Resettlement Allowance (for displaced families)	Onetime Rs 50,000/- per affected family
6.	Cattle shed/ petty shop cost	Onetime financial assistance as appropriate for construction as decided by St. Govt. subject to minimum of Rs.25,000/-
7.	Artisan/small traders/others (in case of displacement)	Onetime financial assistance as appropriate as decided by St. Govt. subject to minimum of Rs.25,000/-
Special Provisions for SCs/STs		
In addition to the R&R package, <i>SC/ST families will be entitled to the following additional benefits:</i>		
8. One time financial assistance of Rs. 50,000 per family;		
9. Families settled outside the district shall be entitled to an additional 25% R&R benefits;		
10. Payment of one third of the compensation amount at very outset;		
11. Preference in relocation and resettlement in area in same compact block;		
12. Free land for community and social gatherings;		
13. In case of displacement, a <i>Development Plan is to be prepared</i>		
14. <i>Continuation of reservation and other Schedule V and Schedule VI area benefits from displaced area to resettlement area.</i>		

Consultations and Participation Framework

7. The World Bank OP 4.10 on Indigenous Peoples too emphasizes “a process of free, prior, and informed consultation with the affected tribal People’s communities at each stage of the project, and particularly during project preparation, to fully identify their views and ascertain their broad community support for the project. To ensure peoples participation in the planning phase and aiming at promotion of public understanding and fruitful solutions of developmental problems various sections of project affected persons and other stakeholders were and will be engaged in consultations throughout the project planning and implementation stages. In this project, however, it will go beyond consultations, as it is mandatory for the project to seek consent for all plans (SIMP and CPTD) from the Tribal Councils.

8. Public participation, consultation and information dissemination begins with initial phases of project preparation. Public consultation activities and information dissemination to PAPs and local authorities continues as the project preparation activities proceed in a project. Through respective local governments and civil society, PAPs are regularly provided with information on the project and the resettlement process prior to and during the project preparation and implementation stages. Information dissemination and consultations shall be a continuous process during preparation, implementation, Monitoring and Evaluation. The information dissemination and consultation with PAPs shall include but not be limited to the following:

- (i) project description and its likely impacts,
- (ii) objective of the surveys
- (iii) entitlement provisions for different impacts.
- (iv) Mechanisms and procedures for public participation and consultation
- (v) Resettlement options
- (vi) Grievance redress mechanisms and procedures
- (vii) Tentative implementation schedule
- (viii) Role and responsibilities of different actors
- (ix) Preferences for mode of compensating for affected fixed assets
- (x) Household consultations for skill improvement training, use of compensation amount and livelihood restoration

9. A detailed consultation and communication procedure placed at Annexure-23 shall be used for each sub-project as part of the TPDP. Some of the methods that can be used for the purpose of communication will include provisions of information boards, pamphlets distribution, wall paintings, drum beating, organizing meetings with key informants and village committees and opinion gathering through post cards, phones and Short Messaging services (SMSes). The GRM as detailed out in main document shall also be applicable without any discrimination for TPDF. The following information shall be included in the TPDP:

- Description followed by analysis of the social structure of the population.
- Inventory of the resources and analysis of the sources of income of the population
- Information about the systems of production practiced by tribals
- Relationship of tribal groups to the proposed project
- Examination of land tenure issues including lands under customary rule and assurance of continued use of these resources by the groups involved.
- Strategy for local participation including mechanisms defined with the assistance and in consultation with tribal peoples for their participation in decision making process throughout project planning, implementation and evaluation cycle.
- Summary of Public Consultation process.
- Identification of development interventions or mitigation activities including measures to enhance tribal participation in the activities proposed under the project
- An implementation schedule with benchmarks to assess progress
- Monitoring and evaluation, including specific indicators
- Detailed cost estimates/budget and financing plan and sources of funds for the TPDP covering planned activities.

- Organisation support/ institutional capacity like the government institutions responsible for tribal development
- Maps

Tribal Land Acquisition Process:

10. Land acquisition processes that need to be completed in a sequence has already been discussed in main ESPP report and Annexure-4. However, special provisions as applicable to the lands acquisition in Tribal /scheduled areas are enumerated below:

S. No.	Aspects	Actions	Special provisions for tribal /Scheduled Areas
1	Preliminary Investigation for determination of Social Impact and public purpose.	Notification for the commencement of Social Impact assessment study to be made available in local language to concerned Panchayat/Municipality and to offices of district collector/sub-divisional magistrate/tehsil (hereinafter referred to as local bodies)	As far as possible, no acquisition of land shall be made in the Scheduled Areas Where such acquisition does take place it shall be done only as a demonstrable last resort
		Consultation with the concerned Panchayat, Municipality or Municipal Corporation, as the case may be and carry out a social impact assessment (SIA) study	Land for traditional tribal institutions and burial and cremation grounds taken into consideration while conducting the SIA
		SIA study to be made public in manner specified in the Act	
		Preparation of Social Impact Management Plan (SIMP)	In case of a project involving land acquisition /involuntary displacement of the Scheduled Castes or the Scheduled Tribes families, a Development Plan shall be prepared laying down the details of procedure for settling land rights due but not settled and restoring titles of the scheduled Tribes as well as the Scheduled Castes on the alienated land by undertaking a special drive together with land acquisition The Development Plan shall also contain a programme for development of alternate fuel, fodder and non-timber forest produce resources on non-forest lands within a period of five years sufficient to meet the requirements of tribal communities as well as the Scheduled Castes.

		Public hearing for Social Impact Assessment (when prepared under section-4 of the act)	
2	Appraisal of SIA by expert group	SIA report is evaluated by an independent multi-disciplinary Expert Group, as may be constituted by appropriate Govt.	
		Recommendations of the expert group made available to the local bodies and in the affected areas in local language	
		The appropriate govt. would recommend the such area for acquisition after examining the expert group report (and report from the collector if any)	
3	Publication of preliminary notification	Notification (hereinafter referred to as preliminary notification) to that effect along with details of the land to be acquired in rural and urban areas shall be published (Notification to be issued within 12 months from DoA of SIA)	In case of acquisition or alienation of any land in the Scheduled Areas, the prior consent of the concerned Gram Sabha or the Panchayats or the autonomous District Councils, at the appropriate level in Scheduled Areas under the Fifth Schedule to the Constitution, as the case may be, shall be obtained. in all cases of land acquisition in such areas, including acquisition in case of urgency, before issue of a notification under this Act, or any other Central Act or a State Act for the time being in force.
		Immediately after issuance of the notification, the concerned Gram Sabhas at the village level, municipalities in case of municipal areas and the Autonomous Councils in case of the areas referred to in the Sixth Schedule to the Constitution, shall be informed of the contents of the notification issued under the said sub-section in all cases of land acquisition at a meeting called especially for this purpose.	
		After issuance of notice, the Collector shall, before the issue of a declaration under section 19, undertake and complete the exercise of updating of land records as prescribed within a period of two months.	

		Preliminary survey of land	
		Payment for damage (if any) during survey	
4	Preparation of Rehabilitation and Resettlement Scheme by the Administrator	Upon the publication of the preliminary notification by the Collector, the Administrator for Rehabilitation and Resettlement shall conduct a survey and undertake a census of the affected families	
		The Administrator shall, based on the survey and census prepare a draft Rehabilitation and Resettlement Scheme (including time limit)	<p>The affected families of the Scheduled Tribes shall be resettled preferably in the same Scheduled Area in a compact block so that they can retain their ethnic, linguistic and cultural identity.</p> <p>The resettlement areas predominantly inhabited by the Scheduled Castes and the Scheduled Tribes shall get land, to such extent as may be decided by the appropriate Government free of cost for community and social gatherings.</p> <p>The affected Scheduled Tribes, other traditional forest dwellers and the Scheduled Castes having fishing rights in a river or pond or dam in the affected area shall be given fishing rights in the reservoir area of the irrigation or hydel projects.</p>
		The draft Rehabilitation and Resettlement scheme referred to in sub-section (2) shall be made known locally by wide publicity in the affected area and discussed in the concerned Gram Sabhas or Municipalities	
		A public hearing shall be conducted in such manner as may be prescribed, after giving adequate publicity about the date, time and venue for the public hearing at the affected area:	Provided further that the consultation with the Gram Sabha in Scheduled Areas shall be in accordance with the provisions of the Provisions of the Panchayats (Extension to the Scheduled Areas) Act, 1996.
		The Administrator shall, on	

		completion of public hearing submit the draft Scheme for Rehabilitation and Resettlement along with a specific report on the claims and objections raised in the public hearing to the Collector.	
		The Collector shall review the draft Scheme submitted by the Administrator with the Rehabilitation and Resettlement Committee at the Rehabilitation project level constituted under section 45:	
		The Collector shall submit the draft Rehabilitation and Resettlement Scheme with his suggestions to the Commissioner Rehabilitation and Resettlement for approval of the Scheme.	
		Approved Rehabilitation and Resettlement Scheme to be made public	
		Publication of declaration and summary of Rehabilitation and Resettlement.	
5	Land to be marked out, measured and planned including marking of specific areas	The Collector shall thereupon cause the land to be marked out and measured, and a plan to be made of the same.	
6	Notice to persons interested and making of statements	The Collector to publish the public notice on his website and cause public notice to be given at convenient places, to stating that the Government intends to take possession of the land, and that claims to compensations and rehabilitation and resettlement for all interests in such land may be made to him	
		The collector may require a statement containing the name of every person possessing any interest in the land and nature of interest for three years preceding the date of statement	
7	Enquiry and land acquisition award by Collector	the Collector shall proceed to enquire into the objections (if any) which any person interested has stated	

		The Collector shall make an award within a period of twelve months from the date of publication of the declaration under section 19	
8	Determination of amount of compensation	Determination of market value of the land by the collector	In case of land being acquired from members of the Scheduled Castes or the Scheduled Tribes, at least one-third of the compensation amount due shall be paid to the affected families initially as first instalment and the rest shall be paid after taking over of the possession of the land.
		The market value is multiplied by a factor as described in the first schedule of the Act	
		Determination of value of things attached to land or building	
		Determination of value of things attached to land or building	
9	Rehabilitation and Resettlement Award for affected families	The Collector shall pass Rehabilitation and Resettlement Awards for each affected family in terms of the entitlements provided in the Second Schedule	Where the affected families belonging to the Scheduled Castes and the Scheduled Tribes are relocated outside of the district, then, they shall be paid an additional twenty-five per cent R&R benefits to which they are entitled in monetary terms along with a one-time entitlement of fifty thousand rupees. Where the community rights have been settled under the provisions of the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, the same shall be quantified in monetary amount and be paid to the individual concerned who has been displaced due to the acquisition of land in proportion with his share in such community rights.
		Provision of infrastructural amenities in resettlement area	All benefits, including the reservation benefits available to the Scheduled Tribes and the Scheduled Castes in the

			<p>affected areas shall continue in the resettlement area</p> <p>Whenever the affected families belonging to the Scheduled Tribes who are residing in the Scheduled Areas referred to in the Fifth Schedule or the tribal areas referred to in the Sixth Schedule to the Constitution are relocated outside those areas, then, all the statutory safeguards, Entitlements and benefits being enjoyed by them under this Act shall be extended to the area to which they are resettled regardless of whether the resettlement area is a Scheduled Area referred to in the said Fifth Schedule or a tribal area referred to in the said Sixth Schedule or not.</p>
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ANNEXURE V

**Signed Copy of Safety
Plan Submitted by
Contractor**

अंतर कार्यालय ज्ञापन
INTER OFFICE MEMO.



प्रेषक/From: उप प्रबंधक(सुरक्षा), शिलांग
Dy. Manager, Safety, Shillong

सेवा में/To: Asst. GM (NERPSIP)
(Guwahati)

प्रतिया /CC: महाप्रबंधक, (प्र. एवं अनु), उ.पु.क्षेत्र.

1. DGM (NERPSIP), Guwahati

संदर्भ संख्या /Ref. No: NESH/Safety/112/2016/ 393.

दिनांक./Date: 28.11.2016

विषय/Sub: Approval of Safety plan submitted by M/s Neccon Power & Infra Ltd-Reg.

In reference to IOM No. NERPSIP/Safety/2016-17/1034/19/125 dated 05.11.16 regarding caption subject. The safety plan submitted by M/s Neccon Power & Infra Ltd has been examined and found in order except point no. 12 (iii) of the safety check list. The party has to submit documents against registration under BOCW (Building and other construction work) Act'1996 obtained from concerned central labour commissioner.

यह आपके आवश्यक कार्रवाई हेतु प्रेषित है।
Regards,


(पुलकेश रय)

NECCON POWER & INFRA LIMITED

(Formerly : North Eastern Cables & Conductors (P) Ltd.)



REGISTERED OFFICE : SEUNI ALI, A.T. ROAD, JORHAT-785 001 (ASSAM) PHONE : (0376) 2351433, 2350894, FAX : 2351318, GRAM : NECCON
E-mail : neccon@necconpower.com, info@necconpower.com, Websit : http://www.khetan-group.com + (CIN) : U27109AS1984PLC002275
Ref: NECCON/PGCIL/ASM-SS-02/S077

Nov 16, 2016

To
The Deputy General Manager (NERPSIP),
Power Grid Corporation of India Ltd.,
Royal Centre No. 102, Ulubari,
Guwahati - 781007, Assam.

Sub: Submission of Safety Plan against "Substation Packages ASM-SS-02 under Comprehensive Scheme for Strengthening of Transmission & Distribution System in Assam".

Ref: 1. NOA No: CC-CS/94-NER/SS-2671/1/G3/NOA-I/6901; dated: 12/08/2016 (Supply)
2. NOA No: CC-CS/94-NER/SS-2671/1/G3/NOA-II/6902; dated: 12/08/2016 (Service)

Dear Sir,

With reference to the above, we are submitting herewith the Safety Plan for above said project for your kind information & record please.

Thanking you.

Yours Faithfully,
For, Neccon Power & Infra Ltd.

(T.R. Sharma)
Director (Tech)

Best Productivity Performance National Award Winner (SSI Sector) 1995-96 & 2007

IS : 398



PART-I,II,IVV

Unit(s)	1	: Industrial Estate, Cinnamara, Jorhat-785 008 (Assam), Phone : 2360503, 2360354
	2	: F44, Industrial Area, Sikar-332001 (Rajasthan), Phone : 01572-258929, 252741
	3	: Bapi Industrial Estate, Bapi, Dausa (Rajasthan)
Branch Office	1	: NECCON House, 37, Tulsibala Road, Ulubari, Guwahati-781 007, Phone : 0361-2523626, Fax : 2522789, E-mail : neccon@necconpower.com
	2.	: 416, (4 th Floor), City Plaza, Space Cinema Complex, Jaipur-302016 (Rajasthan), Tele Fax : (0141) 2281540, E-mail : necconjpr@necconpower.com

Productivity, Quality, Innovation and Management are the Pillars of our Success

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Rs. 20

TWENTY
RUPEES

INDIA

INDIA NON JUDICIAL

অসম ASSAM

FORM -18

19AA 385125

SAFETY PLAN

THIS SAFETY PLAN is made this 12th day of Aug. 2016. by M/S NECCON POWER & INFRA LIMITED, India a Company incorporated under the laws of India and having its Registered Office at - Seuni Ali, A.T.Road, Jorhat-785001 (Assam) (hereinafter called as Contractor which shall include its successors and permitted assigns) for approval of M/S Power Grid Corporation of India Limited a company incorporated under the Company Act,1956 having its Registered Office at B-9, Quatab Institutional Area, Katwaria Sarai, New Delhi-110016 and its Corporate Office at Saudamini plot No.-2, Sector -29, Gurgaon-122001 and its Supply cum Installation Contract for Substation Package- ASM -SS-02, NOA No.: CC-CS/94-NER/SS-2671/1/G3/NOA-I/6901 dated: 12/08/2016 (Supply). NOA No: CC-CS/94-NER/SS-2671/1/G3/NOA-II/6902 dated: 12/08/2016 (Service). (220/132 KV Behiating (New S/S), (220 KV Tinsukia (S/S Extn.),(132/33 KV Chapkhowa (New S/S),(132/33 KV Sarupathar(New S/S),(132/33 KV Teok(New S/S),(132/33 KV Puria S/S (Extn.)

WHEREAS M/S Power Grid Corporation of India Limited has awarded to the Contractor the aforesaid Contract vide its Notification of Award No. CC-CS/94-NER/SS-2671/1/G3/NOA-I/6901 dated: 12th Aug 2016(Supply) and NOA No.: CC-CS/94-NER/SS-2671/1/G3/NOA-II/6902 dated : 12/08/2016 (Service). In terms of which the Contractor is required to submit 'Safety Plan' along with certain documents to the Engineer In-Charge/Project Manager of the Employer within Sixty (60) days of Notification of Award for its approval.

NOW THEREFORE, the Contractor undertakes to execute the Contract as per the safety plan as follows:

1. THAT the Contractor shall execute the works as per provisions of Bidding Documents including those in regard to Safety Precautions / provisions as per statutory requirements.

Page 1



2. THAT the Contractor shall execute the works in a well planned manner from the commencement of Contract as per agreed mile stones of work completion schedule so that planning and execution of construction works goes smoothly and consistently through out the contract duration without handling pressure in last quarter of the financial year/last months of the Contract and the shall be finalized in association with POWERGRID Engineer In-charge/Project Manager from time to time as required.
3. THAT the Contractor has prepared the safe work procedure for each activity i.e. foundation works including civil works, erection, stringing (as applicable), testing & commissioning, disposal of materials at site / store etc. to be executed at site, which is enclosed at **Annexure - 1A (SP)** for acceptance and approval of Engineer In-charge/Project Manager. The Contractor shall ensure that on approval of the same from Engineer In-charge/Project Manager , the approved copies will be circulated to Employer's personnel at site [Supervisor(s)/Executive(s)] and Contractor's personnel at site [Gang leader, supervisor(s) etc.] in their local language / language understood by gang.

THAT the Contractor has prepared minimum manpower deployment plan, activity wise as stated above, which is enclosed at **Annexure - 1B (SP)** for approval of Engineer In-charge/Project Manager.

4. THAT the Contractor shall ensure while executing works that they will deploy minimum 25% of their own experienced work force who are on the permanent roll of the company and balance 75% can be a suitable mixed with the hired gangs / local workers / casual workers if required. The above balance 75% work force should be provided with at least 10 days training by the construction agencies at sites and shall be issued with a certificate. No worker shall be engaged without a valid certificate. Hired gang workers shall also follow safe working procedures and safety norms as is being followed by company's workmen. It should also be ensured by the contractor that certified fitters who are climbing towers / doing stringing operations can be easily identifiable with a system like issue of Badge / Identification cards (ID cards) etc. Colour identification batches should be worn by the workers. Contractor has to ensure that inexperience workers / unskilled workers should not be deployed for skilled job.
5. THAT the Contractor's Gang leader / Supervisor / Senior most member available at every construction site shall brief to each worker daily before start of work about safety requirement and warn about imminent dangers and precautions to be taken against the imminent dangers (Daily Safety Drill). This is to be ensured without fail by Contractor and maintain record of each gang about daily safety instructions issued to workers and put up to POWERGRID site In-charge for his review and record.
6. THAT the Contractor shall ensure that working Gangs at site should not be left at the discretion of their Gang Leaders who are generally hired and having little knowledge about safety. Gang leader should be experienced and well versed with the safe working procedures



applicable for transmission line/ Sub Station works. In case gang is having Gang leader not on permanent roll of the company then additional Supervisor from company's own roll having thorough knowledge about the works would be deployed so as to percolate safety instructions upto the grass root level in healthy spirits. Contractor has to ensure close supervision while executing critical locations of transmission lines / sub stations and ensures that all safety instructions are in place and are being followed.

7. THAT the Contractor shall maintain in healthy and working condition all kind of Equipments / Machineries / Lifting tools / Lifting tackles / Lifting gears / All kind of Ropes including wire ropes / Polypropylene ropes etc. used for Lifting purpose during execution of the project and get them periodically examined and load tested for safe working load in accordance with relevant provisions and requirement of Building & other construction workers Regulation of Employment and Conditions of Services Act and Central Rule 1998, Factories Act 1948, Indian Electricity Act 2003 before start of the project. A register of such examinations and tests shall be properly maintained by the contractor and will be promptly produced as and when desired by the Engineer In-charge/Project Manager or by the person authorised by him. The Contractor has to ensure to give special attention on the formation / condition of eye splices of wire rope slings as per requirement of IS 2762 Specification for wire rope slings and sling legs.

THAT the Contractor has prepared a list of all Lifting machines, lifting Tools / Lifting Tackles / Lifting Gears etc. / All types of ropes and Slings which are subject to safe working load is enclosed at Annexure - 2 (SP) for review and approval of Engineer In-charge/Project Manager.

8. THAT the Contractor has to procure sufficient quantity of Personal Protective Equipment (PPE) conforming to Indian / International standards and provide these equipment to every workman at site as per need and to the satisfaction of Engineer-in-charge/Project Manager of POWERGRID. The Contractor's Site Supervisor/ Project Manager has to ensure that all workmen must use Personal Protective Equipment at site. The Contractor shall also ensure that Industrial Safety helmets are being used by all workmen at site irrespective of their working (at height or on ground). The Contractor shall further ensure use of safety shoes by all ground level workers and canvas shoes for all workers working at height, Rubber Gum Boots for workers working in rainy season and concreting job, Use of Twin Lanyard Full body Safety Harness with attachment of light weight such as aluminium alloy etc. and having features of automatic locking arrangement of snap hook, by all workers working at height for more than three meters and also for horizontal movement on tower shall be ensured by contractor. The Contractor shall not use ordinary half body safety harness at site. The Contractor has to ensure use of Retractable type fall arrestors by workers for ascending / descending on suspension insulator string and other similar works etc., Use of Mobile fall arrestor for ascending / descending from tower by all workers. The contractor has to provide cotton / leather hand gloves as per requirement, Electrical Resistance Hand gloves for operating electrical installations / switches, Face shield for protecting eyes while doing welding works and Dust masks to workers as per requirement. The Contractor will have to take action against the workers not using Personal Protective Equipment at site and those workers shall be asked to rest for that day and also their Salary be deducted for that day.



POWERGRID may issue warning letter to Project Manager of contractor in violation of above norms.

THAT the Contractor shall prepare a detailed list of PPEs, activity wise, to commensurate with manpower deployed, which is enclosed at **Annexure - 3 (SP)** for review and approval of Engineer In-charge/Project Manager. It shall also be ensured that the sample of these equipment shall be got approved from POWERGRID supervisory staff before being distributed to workers. The contractor shall submit relevant test certificates as per IS / International Standard as applicable to PPEs used during execution of work. All the PPE's to be distributed to the workers shall be checked by POWERGRID supervisory staff before its usage.

The Contractor also agrees for addition / modification to the list of PPE, if any, as advised by Engineer In-Charge/Project Manager.

9. THAT the Contractor shall procure, if required sufficient quantity of Earthing Equipment / Earthing Devices complying with requirements of relevant IEC standards (Generally IECs standards for Earthing Equipments / Earthing Devices are - 855, 1230, 1235 etc.) and to the satisfaction of Engineer In-Charge/ Project Manager and contractor to ensures to maintained them in healthy condition.

THAT the Contractor has prepared / worked out minimum number of healthy Earthing Equipments with Earthing lead confirming to relevant IS / European standards per gang wise during stringing activity/as per requirement, which is enclosed herewith at **Annexure - 4 (SP)** for review and acceptance of Engineer In-Charge/ Project Manager prior to execution of work.

10. THAT the Contractor shall provide communication facilities i.e. Walky - Talkie / Mobile Phone, Display of Flags / whistles for easy communication among workers during Tower erection / stringing activity, as per requirement.
11. THAT the Contractor undertakes to deploy qualified safety personnel responsible for safety as per requirements of Employer/Statutory Authorities.

THAT the Contractor employing more than 250 workmen whether temporary, casual, probationer, regular or permanent or on contract, shall employ at least one full time officer exclusively as qualified safety officer having diploma in safety to supervise safety aspects of the equipment and workmen who will coordinate with Engineer In-charge /Project Manager/Safety Co-ordinator of the Employer. In case of work being carried out through sub contractors the sub - contractor's workmen / employees will also be considered as the contractor's employees / workmen for the above purpose. If the number of workers are less than 250 then one qualified safety officer is to be deployed for each contract. He will report directly to his head of organization and not the Project Manager of contractor He shall also not be assigned any other work except assigning the work of safety. The curriculum vitae of such person shall be got cleared from POWERGRID Project Manager / Construction staff.



The name and address of such safety officers of contractor will be promptly informed in writing to Engineer In-charge with a copy to safety officer - In-charge before start of work or immediately after any change of the incumbent is made during the currency of the contract. The list is enclosed at **Annexure - 5A (SP)**.

THAT the Contractor has also prepared a list including details of Explosive Operator (if required), Safety officer / Safety supervisor / nominated person for safety for each erection / stringing gang, list of personnel trained in First Aid Techniques as well as copy of organisation structure of the Contractor in regard to safety. The list is enclosed at **Annexure - 5B (SP)**.

12. The Project Manager shall have the right at his sole discretion to stop the work, if in his opinion the work is being carried out in such a way that it may cause accidents and endanger the safety of the persons and/or property, and/or equipment. In such cases, the Contractor shall be informed in writing about the nature of hazards and possible injury/accident and he shall comply to remove shortcomings promptly. The Contractor after stopping the specific work can, if felt necessary, appeal against the order of stoppage of work to the Project Manager within 3 days of such stoppage of work and decision of the Project Manager in this respect shall be conclusive and binding on the Contractor.
13. THAT, if, any Employer's Engineer/ supervisor at site observes that the Contractor is failing to provide safe working environment at site as per agreed Safety Plan / POWERGRID Safety Rule/ Safety Instructions / Statutory safety requirement and creates hazardous conditions at site and there is possibility of an accident to workmen or workmen of the other contractor or public or the work is being carried out in an un safe manner or he continues to work even after being instructed to stop the work by Engineer / Supervisor at site / RHQ / Corp. Centre, the Contractor shall be bound to pay a penalty of Rs. 10,000/ - per incident per day till the instructions are complied and as certified by Engineer / Supervisor of Employer at site. The work will remain suspended and no activity will take place without compliance and obtaining clearance / certification of the Site Engineer / Supervisor of the Employer to start the work.
14. THAT, if the investigation committee of Employer observes any accident or the Engineer In-charge/Project Manager of the Employer based on the report of the Engineer/Supervisor of the Employer at site observes any failure on the Contractor's part to comply with safety requirement / safety rules/ safety standards/ safety instruction as prescribed by the Employer or as prescribed under the applicable law for the safety of the equipment, plant and personnel and the Contractor does not take adequate steps to prevent hazardous conditions which may cause injury to its own Contractor's employees or employee of any other Contractors or Employer or any other person at site or adjacent thereto, or public involvement because of the Contractor's negligence of safety norms, the Contractor shall be liable to pay a compensation of Rs. 10,00,000/- (Rupees Ten Lakh only) per person affected causing death and Rs. 1,00,000/- (Rupees One Lakh only) per person for serious injuries / 25% or more permanent disability to the Employer for further disbursement to the deceased family/ Injured persons. The permanent disability has the same meaning as indicated in



Workmen's Compensation Act 1923. The above stipulations is in addition to all other compensation payable to sufferer as per workmen compensation Act / Rules

THAT as per the Employer's instructions, the Contractor agrees that this amount shall be deducted from their running bill(s) immediately after the accident, That the Contractor understands that this amount shall be over and above the compensation amount liable to be paid as per the Workmen's Compensation Act /other statutory requirement/ provisions of the Bidding Documents.

15. THAT the Contractor shall submit Near-Miss-Accident report alongwith action plan for avoidance such incidence /accidents to Engineer - In-charge/ Project Manager. Contractor shall also submit Monthly Safety Activities report to Engineer - In-charge/ Project Manager and copy of the Monthly Safety Activities report also to be sent to Safety In-charge at RHQ of the Employer for his review record and instructions.
16. THAT the Contractor is submitting a copy of Safety Policy/ Safety Documents of its Company which is enclosed at **Annexure - 6 (SP)** and ensure that the safety Policy and safety documents are implemented in healthy spirit.
17. THAT the Contractor shall make available of First Aid Box [Contents of which shall be as per Building & other construction workers (Regulation of Employment and Conditions of Services Act and Central Rule 1998 / POWERGRID Guidelines)] to the satisfaction of Engineer In-Charge/ Project Manager with each gang at site and not at camp and ensures that trained persons in First Aid Techniques with each gang before execution of work.
18. THAT the Contractor shall submit an 'Emergency Preparedness Plan' for different incidences i.e. Fall from height, Electrocution, Sun Stroke, Collapse of pit, Collapse of Tower, Snake bite, Fire in camp / Store, Flood, Storm, Earthquake, Militancy etc. while carrying out different activities under execution i.e. foundation works including civil works, erection, stringing (as applicable), testing & commissioning, disposal of materials at site / store etc. which is enclosed at **Annexure - 7 (SP)** for approval of the Engineer In-Charge/ Project Manager before start of work.
19. THAT the Contractor shall organize Safety Training Programs on Safety, Health and Environment and for safe execution of different activities of works i.e. foundation works including civil works, erection, stringing (as applicable), testing & commissioning, disposal of materials at site / store etc. for their own employees including sub contractor workers on regular basis.

The Contractor, therefore, submits copy of the module of training program, enclosed at **Annexure - 9 (SP)**, to Engineer In-charge/Project Manager for its acceptance and approval and records maintained.
20. THAT the Contractor shall conduct safety audit, as per Safety Audit Check Lists enclosed at **Annexure - 8 (SP)**, by his Safety Officer(s) every month during construction of Transmission Lines / Sub Stations / any other work and copy of the safety audit report will be forwarded



to the Employer's Engineer In-charge / Site In-charge/Project Manager for his comments and feedback. During safety audit, healthiness of all Personal Protective Equipments (PPEs) shall be checked individually by safety officer of contractor and issue a certificate of its healthiness or rejection of faulty PPEs and contractor has to ensure that all faulty PPEs and all faulty lifting tools and tackles should be destroyed in the presence of POWERGRID construction staff. Contractor has to ensure that each gang be safety audited at least once in two months. During safety audit by the contractor, Safety officer's feedback from POWERGRID concerned shall be taken and recorded. The Employer's site officials shall also conduct safety audit at their own from time to time when construction activities are under progress. Apart from above, the Employer may also conduct surveillance safety audits. The Employer may take action against the person / persons as deemed fit under various statutory acts/provisions under the Contract for any violation of safety norms / safety standards.

21. THAT the Contractor shall develop and display Safety Posters of construction activity at site and also at camp where workers are generally residing.
22. THAT the Contractor shall ensure to provide potable and safe drinking water for workers at site / at camp.
23. THAT the Contractor shall do health check up of all workers from competent agencies and reports will be submitted to Engineer In-Charge within fifteen (15) days of health check up of workers as per statutory requirement.
24. THAT the Contractor shall submit information alongwith documentary evidences in regard to compliance to various statutory requirements as applicable which are enclosed at **Annexure - 10A (SP)**.

The Contractor shall also submit details of Insurance Policies taken by the Contractor for insurance coverage against accident for all employees are enclosed at **Annexure - 10B (SP)**.

25. THAT a check-list in respect of aforesaid enclosures alongwith the Contractor's remarks, wherever required, is attached as **Annexure - Check List** herewith.

THE CONTRACTOR shall incorporate modifications/changes in this 'Safety Plan' necessitated on the basis of review/comments of the Engineer In-Charge/Project Manager within fourteen (14) days of receipt of review/comments and on final approval of the Engineer In-Charge/Project Manager of this 'Safety Plan', the Contractor shall execute the works under the Contract as per approved 'Safety Plan'. Further, the Contractor has also noted that the first progressive payment towards Services Contract shall be made on submission of 'Safety Plan' alongwith all requisite documents and approval of the same by the Engineer In-Charge/Project Manager.

IN WITNESS WHEREOF, the Contractor has hereunto set its hand through its authorised representative under the common seal of the Company, the day, month and year first above mentioned.

For and on behalf of



M/s.....

WITNESS

1. Signature.....

Name..... PRAMOD SHARMA
Address..... NECCON HOUSE-37
Ulubari, Tulsibala Road
Guwahati, Assam

Signature.....

Name..... A.C. Sharma
Address..... NECCON HOUSE-37
Ulubari, Tulsibala Road
Guwahati, Assam

2. Signature.....

Authorised representative

Name.....

(Common Seal)

Address.....

(In case of Company)

Note:

All the annexure referred to in this "Safety Plan" are required to be enclosed by the contractor as per the attached " Check List "

1. Safety Plan is to be executed by the authorised person and (i) in case of contracting Company under common seal of the Company or (ii) having the power of attorney issued under common seal of the company with authority to execute such contract documents etc., (iii) In case of (ii), the original Power of Attorney if it is specifically for this Contract or a Photostat copy of the Power of Attorney if it is General Power of Attorney and such documents should be attached to this Safety Plan.
2. For all safety monitoring/ documentation, Engineer In-charge / Regional In-charge of safety at RHQ will be the nodal Officers for communication.



ANNEXURE VI

Safety/Penalty Provisions in Contract Conditions

PC 21.3.4 Replace the word 'may' in line no. 10 with 'is'.

Addition of New Clauses (PC21.3.5, PC21.3.6) after GC 21.3.4

PC 21.3.5 Packing

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

PC 21.3.6 The packing, marking and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract and, subject to any subsequent instruction ordered by the Employer consistent with the requirements of the Contract.

PC 21.4 Replace the word 'materials' in line no. 2 with 'Plant and Equipment'.

Add the word 'including liabilities for port charges if any' after the word 'clearance' in line no. 3.

Addition of Sub-Clauses (PC22.2.3.1, PC22.2.3.2, PC22.2.3.3, PC 22.2.3.4) of GC 22.2.3

PC 22.2.3.1 Compliance with Labour Regulations

During continuance of the contract, the Contractor and his sub-contractors shall abide at all times by all applicable existing labour enactments and rules made thereunder, regulations notifications and byelaws of the State or Central Government or local authority and any other labour law (including rules), regulations bye laws that may be passed or notification that may be issued under any labour law in future either by the State or the Central Government or the local authority. The employees of the Contractor and the Sub-contractor in no case shall be treated as the



employees of the Employer at any point of time.

- PC 22.2.3.2 The Contractor shall keep the Employer indemnified in case any action is taken against the Employer by the competent authority on account of contravention of any of the provisions of any Act or rules made thereunder, regulations or notifications including amendments.
- PC 22.2.3.3 If the Employer is caused to pay under any law as principal employer such amounts as may be necessary to cause or observe, or for non observance of the provisions stipulated in the notifications/ byelaws/Acts/ Rules/regulations including amendments, if any, on the part of the Contractor, the Employer shall have the right to deduct any money due to the Contractor under this contract or any other contract with the employer including his amount of performance security for adjusting the aforesaid payment. The Employer shall also have right to recover from the Contractor any sum required or estimated to be required for making good the loss or damage suffered by the Employer.
- PC 22.2.3.4 Salient features of some major laws applicable to establishments engaged in building and other construction works are indicated at **Appendix-I** to PC.

Addition of New Sub-Clauses (PC22.4.1 to 22.4.3 including its sub-clauses) of GC 22.4

PC 22.4.1 Protection of Environment

The Contractor shall take all reasonable steps to protect the environment on and off the Site and to avoid damage or nuisance to persons or to property of the public or others resulting from pollution, noise or other causes arising as consequence of his methods of operation.

During continuance of the Contract, the Contractor and his Sub-contractors shall abide at all times by all existing enactments on environmental protection and rules made there under, regulations, notifications and bye-laws of the State or Central Government, or local authorities and any other law, bye-law, regulations that may be passed or notification that may be issued in this respect in future by the State or Central Government or the local authority.

Salient features of some of the major laws that are applicable are given below:



0281

The Water (Prevention and Control of Pollution) Act, 1974. This provides for the prevention and control of water pollution and the maintaining and restoring of wholesomeness of water. 'Pollution' means such contamination of water or such alteration of the physical, chemical or biological properties of water or such discharge of any sewage or trade effluent or of any other liquid, gaseous or solid substance into water (whether directly or indirectly) as may, or is likely to, create a nuisance or render such water harmful or injurious to public health or safety, or to domestic, commercial, industrial, agricultural or other legitimate uses, or to the life and health of animals or plants or of aquatic organisms.

The Air (Prevention and Control of Pollution) Act, 1981. This provides for prevention, control and abatement of air pollution. 'Air Pollution' means the presence in the atmosphere of any 'air pollutant', which means any solid, liquid or gaseous substance (including noise) present in the atmosphere in such concentration as may be or tend to be injurious to human beings or other living creatures or plants or property or environment.

The Environment (Protection) Act, 1986. This provides for the protection and improvement of environment and for matters connected therewith, and the prevention of hazards to human beings, other living creatures, plants and property. 'Environment' includes water, air and land and the inter-relationship which exists among and between water, air and land, and human beings, other living creatures, plants, micro-organism and property.

The Public Liability Insurance Act, 1991. This provides for public liability insurance for the purpose of providing immediate relief to the persons affected by accident occurring while handling hazardous substances and for matters connected herewith or incidental thereto. Hazardous substance means any substance or preparation which is defined as hazardous substance under Environment (Protection) Act, 1986, and exceeding such quantity as may be specified by notification by the Central Government.

- PC 22.4.2 (i) The Contractor shall (a) establish an operational system of managing environmental impacts, (b) carry out all the monitoring and mitigation measures set forth in the environment management plan attached to the Particular Conditions as **Appendix-II**, and (c) allocate the budget required to ensure that such measures are carried out. The



Contractor shall submit to the Employer (quarterly) semi-annual) reports on the carrying out of such measures.

- (ii) The Contractor shall adequately record the conditions of roads, agricultural land and other infrastructure prior to transport of material and construction commencement, and shall fully reinstate road / pathways, other local infrastructure and agricultural land to atleast their pre-project condition upon construction completion.
- (iii) The Contractor shall undertake detailed survey of the affected persons during transmission line alignment finalization under the Project, where applicable. and
- (iv) The Contractor shall conduct health and safety programme for workers employed under the Contract and shall include information on the risk of sexually transmitted diseases, including HIV/AIDS in such programs.

PC 22.4.3 Safety Precautions

PC 22.4.3.1 The Contractor shall observe all applicable regulations regarding safety on the Site.

Unless otherwise agreed, the Contractor shall, from the commencement of work on Site until taking over, provide:

- a) fencing, lighting, guarding and watching of the Works wherever required, and
- b) temporary roadways, footways, guards and fences which may be necessary for the accommodation and protection of Employer / his representatives and occupiers of adjacent property, the public and others.

PC 22.4.3.2 The Contractor shall ensure proper safety of all the workmen, materials, plant and equipment belonging to him or to THE EMPLOYER or to others, working at the Site. The Contractor shall also be responsible for provision of all safety notices and safety equipment required both by the relevant legislations and the Engineer, as he may deem necessary.



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PC 22.4.3.3 The Contractor will notify well-in advance to the Engineer of his intention to bring to the Site any container filled with liquid or gaseous fuel or explosive or petroleum substance or such chemicals which may involve hazards. The Engineer shall have the right to prescribe the conditions, under which such container is to be stored, handled and used during the performance of the works and the Contractor shall strictly adhere to and comply with such instructions. The Engineer shall have the right at his sole discretion to inspect any such container or such construction plant/equipment for which material in the container is required to be used and if in his opinion, its use is not safe, he may forbid its use. No claim due to such prohibition shall be entertained by the Owner and the Owner shall not entertain any claim of the Contractor towards additional safety provisions/conditions to be provided for/constructed as per the Engineer's instructions.

Further, any such decision of the Engineer shall not, in any way, absolve the Contractor of his responsibilities and in case, use of such a container or entry thereof into the Site area is forbidden by the Engineer, the Contractor shall use alternative methods with the approval of the Engineer without any cost implication to THE EMPLOYER or extension of work schedule.

PC 22.4.3.4 Where it is necessary to provide and/or store petroleum products or petroleum mixtures and explosives, the Contractor shall be responsible for carrying-out such provision and/or storage in accordance with the rules and regulations laid down in Petroleum Act 1934, Explosives Act, 1948 and Petroleum and Carbide of Calcium Manual published by the Chief Inspector of Explosives of India. All such storage shall have prior approval of the Engineer. In case, any approvals are necessary from the Chief Inspector (Explosives) or any statutory authorities, the Contractor shall be responsible for obtaining the same.

PC 22.4.3.5 All equipment used in construction and erection by Contractor shall meet Indian/International Standards and where such standards do not exist, the Contractor shall



ensure these to be absolutely safe. All equipment shall be strictly operated and maintained by the Contractor in accordance with manufacturer's Operation Manual and safety instructions and as per Guidelines/rules of THE EMPLOYER in this regard.

PC 22.4.3.6 Periodical examinations and all tests for all lifting/hoisting equipment & tackles shall be carried-out in accordance with the relevant provisions of Factories Act 1948, Indian Electricity Act 1910 and associated Laws/Rules in force from time to time. A register of such examinations and tests shall be properly maintained by the Contractor and will be promptly produced as and when desired by the Engineer or by the person authorised by him.

PC 22.4.3.7 The Contractor shall be fully responsible for the safe storage of his and his Sub-Contractor's radioactive sources in accordance with BARC/DAE Rules and other applicable provisions. All precautionary measures stipulated by BARC/DAE in connection with use, storage and handling of such material will be taken by the Contractor.

PC 22.4.3.8 The Contractor shall provide suitable safety equipment of prescribed standard to all employees and workmen according to the need, as may be directed by the Engineer who will also have right to examine these safety equipment to determine their suitability, reliability, acceptability and adaptability.

PC 22.4.3.9 Where explosives are to be used, the same shall be used under the direct control and supervision of an expert, experienced, qualified and competent person strictly in accordance with the Code of Practice/Rules framed under Indian Explosives Act pertaining to handling, storage and use of explosives.

PC 22.4.3.10 The Contractor shall provide safe working conditions to all workmen and employees at the Site including safe means of access, railings, stairs, ladders, scaffoldings etc. The scaffoldings shall be erected under the control and supervision of an experienced and competent person. For erection, good and standard quality of material only shall



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be used by the Contractor.

PC 22.4.3.11 The Contractor shall not interfere or disturb electric fuses, wiring and other electrical equipment belonging to the Owner or other Contractors under any circumstances, whatsoever, unless expressly permitted in writing by THE EMPLOYER to handle such fuses, wiring or electrical equipment

PC 22.4.3.12 Before the Contractor connects any electrical appliances to any plug or socket belonging to the other Contractor or Owner, he shall:

- a. Satisfy the Engineer that the appliance is in good working condition;
- b. Inform the Engineer of the maximum current rating, voltage and phases of the appliances;
- c. Obtain permission of the Engineer detailing the sockets to which the appliances may be connected.

PC 22.4.3.13 The Engineer will not grant permission to connect until he is satisfied that;

- a. The appliance is in good condition and is fitted with suitable plug;
- b. The appliance is fitted with a suitable cable having two earth conductors, one of which shall be an earthed metal sheath surrounding the cores.

PC 22.4.3.14 No electric cable in use by the Contractor/Owner will be disturbed without prior permission. No weight of any description will be imposed on any cable and no ladder or similar equipment will rest against or attached to it.

PC 22.4.3.15 No repair work shall be carried out on any live equipment. The equipment must be declared safe by the Engineer and a permit to work shall be issued by the Engineer before any repair work is carried out by the Contractor. While working on electric lines/equipment, whether live or dead, suitable type and sufficient quantity of tools will have to be provided by the Contractor to

electricians/workmen/officers.

PC 22.4.3.16 The Contractors shall employ necessary number of qualified, full time electricians/electrical supervisors to maintain his temporary electrical installation.

PC 22.4.3.17 The Contractor employing more than 250 workmen whether temporary, casual, probationer, regular or permanent or on contract, shall employ at least one full time officer exclusively as safety officer to supervise safety aspects of the equipment and workmen, who will coordinate with the Project Safety Officer. In case of work being carried out through Sub-Contractors, the Sub-Contractor's workmen/employees will also be considered as the Contractor's employees/workmen for the above purpose.

The name and address of such Safety Officers of the Contractor will be promptly informed in writing to Engineer with a copy to Safety Officer-In charge before he starts work or immediately after any change of the incumbent is made during currency of the Contract.

PC 22.4.3.18 In case any accident occurs during the construction/erection or other associated activities undertaken by the Contractor thereby causing any minor or major or fatal injury to his employees due to any reason, whatsoever, it shall be the responsibility of the Contractor to promptly inform the same to the Engineer in prescribed form and also to all the authorities envisaged under the applicable laws.

PC 22.4.3.19 The Engineer shall have the right at his sole discretion to stop the work, if in his opinion the work is being carried out in such a way that it may cause accidents and endanger the safety of the persons and/or property, and/or equipment. In such cases, the Contractor shall be informed in writing about the nature of hazards and possible injury/accident and he shall comply to remove shortcomings promptly. The Contractor after stopping the specific work can, if felt necessary, appeal against the order of stoppage of work to the Engineer within 3 days



of such stoppage of work and decision of the Engineer in this respect shall be conclusive and binding on the Contractor.

PC 22.4.3.20 The Contractor shall not be entitled for any damages/compensation for stoppage of work due to safety reasons as provided in para GCC 22.4.3.19 above and the period of such stoppage of work will not be taken as an extension of time for completion of work and will not be the ground for waiver of levy of liquidated damages.

PC 22.4.3.21 It is mandatory for the Contractor to observe during the execution of the works, requirements of Safety Rules which would generally include but not limited to following:

Safety Rules

- a) Each employee shall be provided with initial indoctrination regarding safety by the Contractor, so as to enable him to conduct his work in a safe manner.
- b) No employee shall be given a new assignment of work unfamiliar to him without proper introduction as to the hazards incident thereto, both to himself and his fellow employees.
- c) Under no circumstances shall an employee hurry or take unnecessary chance when working under hazardous conditions.
- d) Employees must not leave naked fires unattended. Smoking shall not be permitted around fire prone areas and adequate fire fighting equipment shall be provided at crucial location.
- e) Employees under the influence of any intoxicating beverage, even to the slightest degree shall not be permitted to remain at work.



- f) There shall be a suitable arrangement at every work site for rendering prompt and sufficient first aid to the injured.
- g) The staircases and passageways shall be adequately lighted.
- h) The employees when working around moving machinery, must not be permitted to wear loose garments. Safety shoes are recommended when working in shops or places where materials or tools are likely to fall. Only experienced workers shall be permitted to go behind guard rails or to clean around energized or moving equipment.
- i) The employees must use the standard protection equipment intended for each job. Each piece of equipment shall be inspected before and after it is used.
- j) Requirements of ventilation in underwater working to Licenced and experienced divers, use of gum boots for working in slushy or in inundated conditions are essential requirements to be fulfilled.
- k) In case of rock excavation, blasting shall invariably be done through Licenced blasters and other precautions during blasting and storage/transport of charge material shall be observed strictly.

PC 22.4.3.22 The Contractor shall follow and comply with all THE EMPLOYER Safety Rules, relevant provisions of applicable laws pertaining to the safety of workmen, employees, plant and equipment as may be prescribed from time to time without any demur, protest or contest or reservations. In case of any discrepancy between statutory requirement and THE EMPLOYER Safety Rules referred above, the latter shall be binding on the Contractor unless the statutory provisions are more stringent.

PC22.4.3.23 If the Contractor fails in providing safe working



environment as per THE EMPLOYER Safety Rules or continues the work even after being instructed to stop work by the Engineer as provided in para GCC 22.4.3.19 above, the Contractor shall promptly pay to THE EMPLOYER, on demand by the Owner, compensation at the rate of Rs.5, 000/- per day of part thereof till the instructions are complied with and so certified by the Engineer. However, in case of accident taking place causing injury to any individual, the provisions contained in para GCC 22.4.3.24 shall also apply in addition to compensation mentioned in this para.

PC 22.4.3.24 If the Contractor does not take adequate safety precautions and/or fails to comply with the Safety Rules as prescribed by THE EMPLOYER or under the applicable law for the safety of the equipment and plant or for the safety of personnel or the Contractor does not prevent hazardous conditions which cause injury to his own employees or employees of other Contractors or THE EMPLOYER employees or any other person who are at Site or adjacent thereto, then the Contractor shall be responsible for payment of a sum as indicated below to be deposited with THE EMPLOYER, which will be passed on by THE EMPLOYER to such person or next to kith and kin of the deceased:

a.	Fatal injury or accident causing death	Rs. 1,000,000/- per person
b.	Major injuries or accident causing 25% or more permanent disablement	Rs. 100,000/- per person

Permanent disablement shall have same meaning as indicated in Workmen's Compensation Act. The amount to be deposited with THE EMPLOYER and passed on to the person mentioned above shall be in addition to the compensation payable under the relevant provisions of the Workmen's Compensation Act and rules framed there under or any other applicable laws as applicable from time to time. In case the Contractor does not deposit the above mentioned amount with THE EMPLOYER, such



amount shall be recovered by THE EMPLOYER from any monies due or becoming due to the Contractor under the contract or any other on-going contract.

PC22.4.3.25 If the Contractor observes all the Safety Rules and Codes, Statutory Laws and Rules during the currency of Contract awarded by the Owner and no accident occurs then THE EMPLOYER may consider the performance of the Contractor and award suitable 'ACCIDENT FREE SAFETY MERITORIOUS AWARD' as per scheme as may be announced separately from time to time.

PC22.4.3.26 The Contractor shall also submit 'Safety Plan' as per proforma specified in Section IX: Contract Forms, Part-3 of Bidding Documents alongwith all the requisite documents mentioned therein and as per check-list contained therein to the Engineer In-Charge for its approval within 60 days of award of Contract.

Further, one of the conditions for release of first progressive payment / subsequent payment towards Services Contract shall be submission of 'Safety Plan' alongwith all requisite documents and approval of the same by the Engineer In-Charge.

PC 22.6 Emergency Work (GC Clause 22.6)

Replace the words "Otherwise" with "In case such work is not in the scope of the Contractor", in the second last line of second paragraph of GC clause 22.6.

PC 23.3 Supplementing sub-clause GC 23.3

For notification of testing, four weeks shall be deemed as reasonable advance notice.

PC 23.7 Test and Inspection (GC Clause 23.7)

Replace the words "GC Sub-Clause 6.1" with "GC Sub-Clause 46.1", in the last line of GC clause 23.7.



ANNEXURE VII

Approved Labour License & Insurance Policy by Contractor



GOVERNMENT OF INDIA
Ministry of Labour & Employment
Office of the Regional Labour Commissioner (Central)
Chowkidhingee, Dibrugarh
Tele-Fax : 0372 - 232 5205
Email : rlc.dib-as@gov.in

No. L/CLA/234/2016-D/R

Dated: 22.10.2021

To,

M/S. Niccon Power & Infra Ltd.,
PGCIL Contractor,
Seuni Ali, A.T. Road,
Jorhat-785001 (Assam).

Mobile No. 7086039145/9864605081
E-mail : necon@neconpower.com

Subject: Contract Labour (Regulation & Abolition) Act, 1970 – Application Renewal of Licence No. **L/CLA/234/2016-D/R Dated 05.10.2016.**

Dear Sir,

Please refer to your application Ref. No. **NECCON/RLC(C)/DBR/CLL/RNL-V/SS-02/MIS-2/21-22/A31 dated 30.09.2021** on the subject cited above.

In this connection, please find enclosed herewith the Original Licence+ duly **RENEWED UP TO 04.10.2022.**

You are advised to ensure Payment of Wages to your workers through their respective Bank Account as payment to be made by 1st Week of following month.

Please acknowledge receipt of the same.

Yours faithfully,

(CHIRANJEEV SAIKIA)
Regional Labour Commissioner (Central)
DIBRUGARH

Enclo : As above.

Copy to :

1. The Labour Enforcement Officer (Central), Chowkidhingee, Dibrugarh.
2. The Chief Manager, PGCIL, NERSIP, Teok, Jorhat. He is also advised to ensure Payment of Wages to contract workers through bank account.

Regional Labour Commissioner (Central)
DIBRUGARH

FORM-VI
 [See Rule 25(1)]
 GOVERNMENT OF INDIA
 MINISTRY OF LABOUR & EMPLOYMENT
 OFFICE OF THE LICENSING OFFICER & REGIONAL LABOUR COMMISSIONER (CENTRAL)
 CHOWKIDHINGHEE, DIBRUGARH

Licence No. L/CLA/234/2016-D/R

Dated: 05.10.2016

Fees paid Rs 150.00

LICENCE

1. Licence is hereby granted to M/S Neccon Power & Infra Ltd, PGCIL Contractor, Rep. through Shri J.P. Khetan, Director, Seuni Ali, A.T. Road, Jorhat-785001 under Section 12 (1) of the Contract Labour (Regulation & Abolition) Act, 1970 to the conditions specified in Annexure (overleaf).

2. The Licence is for doing the contract work of Services Contract for Substation Package ASM-SS02 for Assam associated with NER Power System Improvement Projects, Civil and Electrical Erection Works required for establishment of 220/132/33 KV Sub-stations at Behiating GSS, Tinsukia GSS, Chapakhowa GSS, Sarupathar GSS, Teok GSS and Rupai GSS vide Refer No. CC-CS/94-NER/SS-2671/1/G3/NOA-II/6902 Dated 12.08.2016 in the establishment of the Asstt. General Manager, Power Grid Corporation of India Ltd, Milan Nagar, Lane-D, P.O. C.R. building, Dibrugarh-786003 and Chief Manager, Power Grid Corporation of India Ltd, NERPSIP, Teok.

3. The Licence shall remain in force till 04.10.2017

G.C. Majumdar
05/10/2016



(G.C. Majumdar)
 "Licencing Officer" under the
 Contract Labour (R&A) Act, 1970 &
 Regional Labour Commissioner (Central)
 Government of India
 Regional Labour Commissioner (C)
 & Registering Officer
 under the C. L. (R & A) Act. 1970

Dated: - 05.10.2016

RENEWAL
 (See Rule 29)

Date of Renewal	Fees paid for Renewal	Date of Expiry	Signature/Stamp
19.09.2017	₹ 200.00	04.10.2018	<i>G.C. Majumdar</i> 19/09/2017
01.09.2018	₹ 200.00	04.10.2019	R.L.C. (C) DIBRUGARH
20.09.2019	₹ 200.00	04.10.2020	R.L.C. (C) DIBRUGARH
30.09.2020	Rs. 200/- with late fee	04.10.2021	R.L.C. (C) DIBRUGARH <i>Dan</i> 30/09/2020

A N N E X U R E

The licence is subject to the following conditions:-

1. The Licence shall be non-transferable.
2. The number of workmen employed as Contract Labour in the establishment shall not on any day, Exceed 130 (One hundred & thirty only) Nos. of Contract Labours
3. Except as provided in the rules the fees paid for the grant, or in the case may be for renewal of the license shall Non-refundable.
4. The rates of wages payable to the workmen by the contract shall not be less than the rates prescribed for the Schedule of employment under the Minimum Wages Act, 1948, where applicable and where the rates have been fixed by agreement settlement or award, not less than the rates fixed.
5. In cases where the workmen employed by the contractor perform the same or similar kind of work as the workmen directly employed by the principal employer of the establishment, the wages rates, holidays, hours of the work and other conditions of service of the workmen of the contractor shall be the same as applicable to the workmen directly employed by the Principal Employer of the establishment on the same or similar kind of work provided that in case of any disagreement with regard to the type of work the same shall be decided by the Chief Labour Commissioner (Central), whose decision shall be final.
6. In other cases, the wage rates, holidays, hours of work and conditions of service of the workmen of the contractor shall be such as may be specified in this behalf by the Deputy Chief Labour Commissioner (Central).
7. In every establishment where twenty or more female workmen are ordinarily employed as contract labour there shall be provided two rooms of reasonable dimensions for the use of their children under the age of six years. One of such rooms would be used as a play room for the children and the other as bedroom for the children. For this purpose the contractor shall supply adequate number of toys and games in the play room and sufficient number of cots and beddings in the sleeping room. The standard of construction and maintenance of the crèches may be specified in this behalf by the Deputy Chief Labour Commissioner (Central).
8. The licensee shall notify any change in the number of workmen or the conditions of work to the Licensing Officer.
9. A copy of the license shall be displayed prominently at the premises where the contract work is being carried on.
10. The licensee shall intimate within 15 days the date of commencement/ completion of each contract work submit a "Inspector" appointed under Section-28 of the Act intimating the actual date of the commencement or, as the case may be, completion of such contract work Form VI-A under Rule 81(3);

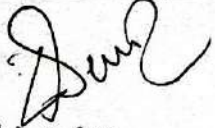
G.M.
65/10/2016
(G.C. Majumdar)

"Licencing Officer" under the
Contract Labour(R&A) Act, 1970 &
Regional Labour Commissioner (Central)
Government of India
& Registering / Licencing Officer
under the C. L. (R & A) Act. 1970

Annexure-I

Licence No. : L/CLA/234/2016-D/R Dated : 05.10.2016

RENEWAL
(See Rule 29)

Date of Renewal	Fee paid for renewal	Renewal up to	Signature and seal of Licensing & Registering Officer
22.10.2021	Rs. 300.00	04.10.2022	 R.L.C.(C) DIBRUGARH



POLICY SCHEDULE FOR EMPLOYEES COMPENSATION INSURANCE

Insured's Name	: NECCON POWER & INFRA LIMITED		
Insured's Details		Issuing Office Details	
Customer ID	: PO53672462	Office Code	: DISPUR BRANCH (530702)
Address	: SEUNI ALI, A.T. ROAD, JORHAT, ASSAM JORHAT, ASSAM, 785001	Address	: NILGIRI MANSION, OPPOSITE TO NEMCARE HOSPITAL, BHANGAGARH, G. S. ROAD, 781005
Phone No	:	Phone No	: 03612529463
E-mail/Fax	: neccon@necconpower.com, /	E-mail/Fax	: nia.530702@newindia.co.in /
PAN No	: AABCN1603J	S.Tax Regn. No	: AAACN4165CST178
GSTIN/UIN	: 18AABCN1603J4ZM / NA	GSTIN	: 18AAACN4165C2ZP
		SAC	: 997139 (Other non-life insurance services exd RI)

Policy Details			
Policy Number	: 53070236210100000029	Business Source Code	
Period of Insurance	: From: 07/11/2021 08:01:10 PM To: 06/11/2022 11:59:59 PM	Dev.Off level./Broker/Corp. Agent/Web Aggregator	: Mr. PRADIP MEDHI - (DE7795252)
Date of Proposal	: 07-Nov-21	Agent/Bancassurance/S pacified Person	: Mrs. DOLLY SINGH (NIAAG00116342) DOLLY SINGH (SI00199200)
Prev. Policy no.	: 53070236200100000017	Phone No	: NA / 9864032185
Client Type	: Corporate	E-mail/Fax	: 2019dollygthy@gmail.com pradip.medhi@newindia.co.in, / /

Premium(₹)	GST(₹)	Total (₹)	Total (₹ in words)	Receipt No. & Date
67277	12110	79387	RUPEES SEVENTY-NINE THOUSAND THREE HUNDRED EIGHTY-SEVEN ONLY	5307028121000000250 4 - 07/11/21

Details of Employees with monthly wages upto ₹ 15000:

Categories	Sub Categories	No of Employee	Cash Total Wages
------------	----------------	----------------	------------------

Details of Employees with monthly wages above ₹ 15000:

Categories	Sub Categories	No of Employee	Cash Total Wages
Electricity-Light and/or Power Supply	SKILLED	50	8400000
Electricity-Light and/or Power Supply	UNSKILLED	80	10560000

Trade Description	Particular of Works	Location Details	Included All Sub-Contractors
CONSTRUCTION	CONSTRUCTION WORK OF CIVIL & SUB-STATION/SUB-STATION EXTENTIONS OF 220/132Kv, 220Kv, 132/33Kv AS PER WORK ORDER.	AT BEHIATING, TINSUKIA, CHA PAKHOWA, SARUPATHAR, TEOK & RUPAI IN ASSAM UNDER SCHEME ASM-SS-02	

Contractor/Sub-Contractor Details:

Serial No	Name of Contractor	Description	Categorie	No. of Workers			Amount Wages
				Skilled	Unskilled	Others	

Extensions under the Policy Cover

Signature File Verified
Digitally signed by S RINI VASAK VAIDESH ARAH Date: 2021.11.07 20:23:41 +05'30'

Policy No. : 53070236210100000029 Document generated by 31930 at 07/11/2021 20:23:29 +05:30
Regd. & Head Office: New India Assurance Bldg., 87 M.G. Road, Fort, Mumbai - 400 001

THE NEW INDIA ASSURANCE CO. LTD
Dispur Branch Office-530702
Nilgiri Mansion Opp. - Nemcare Hospital, Bhangagarh, G.S. Road Guwahati-781005
TOLL FREE No. 1800201465
Phone 0361-2529463



Name of the Extension	Sub Limit of the Extension	Deductibles of the Extension
Medical Extension	₹50000	NA
Special Conditions	NA	
Special Exclusions	NA	
Special Excess/Deductible	NA	
The Policy shall be subject to EMPLOYEES COMPENSATION INSURANCE Policy clauses attached herewith.		
Clauses	Description	

Premium and GST Details

	Rate of Tax	Amount In INR
Premium		₹ 67277.00
SGST	9	6055
CGST	9	6055
IGST	0	0

In witness whereof the undersigned being duly authorised by the Insurers and on behalf of the Insurers has (have) hereunder set his (their) hand(s) on this 07th day of November, 2021.

For and on behalf of

The New India Assurance Company Limited

Date of Issue: 07/11/2021

Duly Constituted Attorney(s)

Stamp Duty under the Policy is ₹1

Mudrank _____ Dt. _____ consolidated Stamp Fees Paid by Pay Order Number _____ vide receipt

number _____ dt. _____

Tax Invoice No : 53070221E0003586

IRDA Registration Number: 190

दि न्यू इण्डिया एश्युरेन्स कम्पनी लिमिटेड
THE NEW INDIA ASSURANCE CO. LTD
Disper Branch Office-530702
Nilgiri Mansion, Opp.- Namcare
Hospital, Bhangagarh, G.S Road
Gawahati-761005
Phone 0361-2529463

ANNEXURE VIII

Filled Safety Checklist as Sample



Annexure-E

**SAFETY CHECK LIST DURING CONSTRUCTION OF SUB - STATION/ BAY EXTENSION/
AUGMENTATION**

Date of Safety Audit/ Inspection: 22/10/2021

Region: NER (NERPSIP) Name of Sub-Stn/ Switching Stn.: 132/33 KV Teok S/S.

Name of Contractor: M/s. NECCON Power & Infra Ltd.

Contractor License / Registration No.: 3153 Validity: 16.08.2022

Name of Agency Site I-C / Safety Officer: P. Datta

A. SUB STATION CIVIL WORKS :

Sl.	Description of Activity	Feedback	Remarks
1	Check a well-planned and documented procedures for the entire Construction works of SS shall be prepared (Safety Plan) by contractor and got approved from POWERGRID for distribution to Contractors' field staff and POWERGRID for follow up.	Yes/ No.	
2	Ensure Supervisor / Gang Leader always issues instruction to the Workmen including contractor labour before start of work. Tool Box Meeting must be conducted prior to commencement of work.	Yes/ No.	
I: SAFETY DURING EXCAVATION:			
3	Check Sub-station area has been protected by constructing Boundary Wall all around the sub-station and Concertina Coils are installed.	Yes / No.	Boundary wall work under progress.
4	De-watering arrangement is available (if necessary)	Yes / No.	
5	Check proper/ adequate arrangement is made for extension of electric supply. Extension Board with MCB to be provided near work point.	Yes / No.	
6	Check arrangement of illumination at construction site is available in safe manner.	Yes / No.	
7	Check dumping of Excavated soil (Minimum 1.5 Mts. or half the depth of the pit which ever is more from the edge of the pit.)	Yes / No.	
8	Check Shoring & Shuttering to protect the loose rock / soil against fall. (if required).	Yes / No.	

[Signature]
22/10/2021

[Signature]

P. Datta
22.10.2021



9	Check lone worker is not allowed to work in the excavated area.	Yes / No.	
10	Ensure that before undertaking excavation, the soil has been tested and in case of availability of any explosive / dangerous gas, necessary arrangement must be made to remove / dilute such gases.	Yes / No. NA	
11	The positions of underground installations such as sewers, water pipes and electrical cables has been verified and in case of their existence, they must be isolated before further excavation works to ensure Human Safety.	Yes / No.	
12	Check the provision of sufficient strong ladder of suitable length is available near the working place during excavation.	Yes / No.	
13	Check if any permission is required from local statutory body before excavation.	Yes / No. NA	
14	Check that undercutting / toe cutting is not done while excavating the pits.	Yes / No. NA	
15	Back filling to be done immediately on completion/ curing of foundation at the earliest.	Yes / No.	
16	Check for any possibility of seepage of water from nearby pond / river has been estimated and taken care of.	Yes / No.	
17	Check to avoid slide / collapse of side walls of excavated pit, the excavation is to be done in trapezoidal cross - section.	Yes / No. NA	
II :SAFETY PRECAUTION DURING STORAGE, HANDLING AND USE OF BLASTING MATERIAL			
18	Check that the adequate arrangement is made for the storage of blasting material at safe place. (Temporary Magazine is to be installed observing all norms) as per Indian Explosive Act.	Yes / No.	}
19	Check that the blasting materials is handled by licensed blaster with due care at site. (if applicable)	Yes / No.	
20	Check smoking is prohibited in the vehicle carrying explosives.	Yes / No.	
21	Check that the Blaster is holding proper license issued by the appropriate authority. As per Indian Explosive Act.	Yes / No.	

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P. Dutta
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22	Check that the length of the fuse wire used during blasting operation is adequate.	Yes / No.	NA
23	Check while transportation, no unauthorized person is allowed in vehicle carrying explosives.	Yes / No.	
24	Check that the loading and unloading of explosives is being done carefully.	Yes / No.	
25	Check explosives and detonators or blasting caps is not being transported in the same vehicle.	Yes / No.	
26	Check while transportation the detonators and explosives are not carried loose or mixed with other materials.	Yes / No.	
27	Check surplus explosives shall not be stacked near working area during loading / unloading.	Yes / No.	
28	Check explosives shall not be held in hands when lightening the fuse.	Yes / No.	
29	Check that blasting in the open has been carried out during the fixed hours every day or on fixed days in the week so that the public at large should know about this.	Yes / No.	
30	Check that arrangement has been made to display sufficient warnings / sign board to enable the people to get out of the blasting area to get off the danger zone.	Yes / No.	
31	Check that the danger zone has been suitably cordoned off.	Yes / No.	
32	Check during blasting operations begin / after the firing of explosives shall follow the loud siren.	Yes / No.	
33	Check that during blasting operation, Labour / Workmen / Passerby are at safe places and arrangement is made to inform public by caution markings (Red Flag) / Public Notices etc.	Yes / No.	
34	Check that required PPEs are used by blaster and their gang members during blasting and also the persons supervising the blasting operations.	Yes / No.	
35	For covered blasting ensure placement of cover plates of proper thickness and sufficient numbers of sand filled bags.	Yes / No.	
35	Ensure that permission for blasting has been obtained from the appropriate authority.	Yes / No.	
III : SAFETY DURING CASTING OF FOUNDATION / CONCRETING:			
36	Check construction materials are stacked at safe place and also does not cause any danger. (Away from pit) i.e. 1.5 Mtrs. or half the depth of the pit which ever is more.)	Yes / No.	

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M. Shrivastava

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37	Check proper arrangement of illumination at Construction Site of S/S is available.	Yes / No.	
38	Check that the Concreting Mixer/ Vibrator machines etc are placed at a safe place (Not very near to any pit at least 1.5 Mtr. from the edge of the pit) to avoid transfer of vibrations and should be operated by skilled persons. Machine shall be properly anchored & earthed.	Yes / No.	
39	All bracing, struts and shuttering in excavations shall be adequately secured so as to prevent their accidental displacement.	Yes / No.	
40	Check for proper placing of Hydraulic jacks with stability and constant watch of these instruments (which are continuously loaded) to avoid any danger of displacement causing accident.	Yes / No. NA	

B. : SAFETY DURING STRUCTURE, EQUIPMENT ERECTION & CABLE LAYING ETC.:

41	Check Back filling done prior to erection activity.	Yes / No.	Erection work completed
42	Check the ropes being used re structure erection / Equipment Erection has been checked for adequate strength/ physical condition (free from break of strands and knots etc.(Test Certificates to be verified)	Yes / No.	
43	Check that the lifting Tools and Tackles (e.g Pulleys, D-Shackles, Steel slings) including Derrick are in healthy condition and has been tested periodically. (Test Certificates to be verified).	Yes / No.	
44	Ensure that Man-lift/ Crane is utilized for Equipment Erection in safe and secure manner.	Yes / No.	
45	Check that all Nuts and Bolts are fitted in the structure before undertaking the job of other section of the structure and are tightened.	Yes / No.	
46	Check working area has been cordoned off with Caution tape/ hard barricading/ Safety Cone.	Yes / No.	
47	Check demarcation of feeder is done for Double Circuit Line.	Yes / No. NA	
48	Check proper guying arrangement has been made while lifting structure / Equipment, if necessary.	Yes / No.	Erection work completed
49	Check the structure has been permanently earthed.	Yes / No.	

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50	Check that all the PPEs like Safety Helmets, Full body Double Harness Safety belts, Hand Gloves, Safety Shoes/ Canvass shoes etc. are used by the workers during erection work; Availability of Test Certificate is to be ensured and verified.	Yes / No.	Erection work completed.
51	Ensure that R-Clips/ Split Pins are fixed properly.	Yes / No.	
52	Check that Earthing of Surge Counter is done with minimum bends.	Yes / No.	
53	Cable drums after visual inspection should be stored preferably in the covered area. Cable ends should be clamped.	Yes / No.	
54	Check that Earthing of Panel is done by the erection contractor for connecting it with switchyard earth mat. (As per Scheme)	Yes / No.	
55	Check those who have sufficient knowledge of steel structural job has been employed in steel structural works only.	Yes / No.	} work completed
56	Check necessary instruction has been communicated by supervisor before start of the days works to workmen under his control.	Yes / No.	
57	Storing of equipments are to be made properly to avoid any accident during handling and shall be placed carefully to avoid tilting.	Yes / No.	
58	Check all Nuts and Bolts are properly raised or lowered preferably using closed loop pulleys and gully bags / hand bags tied at the end for carrying nuts and bolts.	Yes / No.	

C. CONDUCTOR LAYOUT DURING CONSTRUCTION STAGE:

59	Ensure that all members are fitted in structure before undertaking conductor laying work.	Yes / No.	Work completed
60	Ensure that standard Discharge Rod/ Earthing Device is utilized, meeting the specifications.	NA Yes / No.	
61	Ensure that insulated Rubber mats are kept in front & back of C&R Panels/ ACDB/ DCDB Panels/ inside FFPH/ DG set room.	Yes / No.	
62	Ensure whether the structure is properly earthed.	Yes / No.	
63	Only Nylon or PP Ropes should be used during conductor laying in the vicinity of charged area.	Yes / No.	work completed

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64	Ensure that PTW has been taken from the concerned authority when extension of existing SS is under execution. Shift I-C shall ensure the same under approval by SS I-C.	Yes / No. NA	
65	Ensure that Winch machine being used are properly earthed.	Yes / No. NA	
66	Check the provision and proper positioning for the guying and back staying (Where necessary).	NA Yes / No.	

D: SWITCHYARD EARTHING DURING CONSTRUCTION STAGE :

67	Check all steel structures/ Equipments/ light poles, junction boxes on the poles, cable and cable boxes / glands, etc. are connected to nearby earthing grid conductor by two Earthing leads.	✓ Yes / No.	
68	Check that the Railway tracks within switchyard area has been earthed at a spacing of 30 Mts. / specified distance and also at both ends.	Yes / No.	Work under progress.
69	Check cable trays has been connected to earthing flat of 50 x 6 mm / specified sized earthing flat at intervals specified in approved drawing.	✓ Yes / No.	
70	Check flexible earthing connectors should be provided for the moving parts.	✓ Yes / No.	
71	Check sheath and Armor of Single core Power cable is earthed at switchgear end and equipment side.	✓ Yes / No.	
72	Check that Earthing conductor is generally buried 2.0 Mtrs outside the Switch yard fence. All the Entry Gates of S/Yard area and every alternate post of the fence is to be connected to earthing grid as per Drawing.	Yes / No.	Work under progress.

E. GENERAL POINTS COMMON FOR ALL ACTIVITIES DURING EXCAVATION, CASTING OF FOUNDATION, ERECTION OF STRUCTURES, LAYING OF CONDUCTOR, STORAGE AND TRANSPORTATION OF MATERIAL :

73	(a) Whether Induction Training has been imparted to working personnel and record is available. (b) Check Supervisors/ Workmen have been provided with required healthy PPEs. Like	Yes/ No. ✓ Yes / No.	Record to be updated.
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	(Safety helmet/ Safety Belts/ Safety Shoes /Gum Boots/ Hand Gloves etc.as applicable) (c) Check that the PPEs. required by the workmen are being utilized by them always.	Yes/ No.	
74	(a) First aid box with listed items as per BOCW Act, 1996 available. (b) Number of First Aid Trained persons and their names. (c) Whether First Aid Register is available at site. (d) Nearby medical facilities for use during exigencies identified (Location / Phone No.)	Yes/ No. Yes/ No. Yes/ No. - First Aid Register to be updated Yes/ No.	Minimum item available in First Aid Box, but not as per BOCW
75	(a) Check condition of Labour Camp and status of availability of Toilet/ potable Drinking water. (b) Ensure that Health check-up of Workers have been conducted and record maintained by the Agency	Yes/ No. Yes/ No.	Health check-up of workers to be conducted.
76	Check Site Instruction register is available at site.	Yes/ No.	
77	Ensure supervisory staff from POWERGRID is available at site during construction.	Yes/ No.	
78	Check all driver and plant operators are holding valid driving license.	Yes/ No.	
79	Check the vehicle for rescue is available at site.	Yes/ No.	
80	Ensure engaged labour are aware of the job and Induction Training imparted and record maintained.	Yes/ No.	Record to be updated.
81	While transporting heavy consignment of conductor / EW drums from central store to site by the use of Cranes, Truck, Tractor. The safety aspect for construction and failure of brake system of moving machinery is to be checked.	Yes/ No.	
82	At least one Dry Powder type portable Fire Extinguisher shall be provided especially where explosive or blasting agents are used for excavation.(If applicable)	Yes / No. NA	
83	Check the competence (Qualification / experience) of supervisor / gang leader of contractor.	Yes/ No.	12th Pass
84	Proper loading/ unloading arrangements are in place at site;	Yes/ No.	

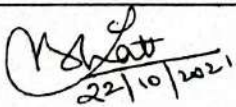
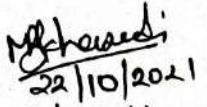
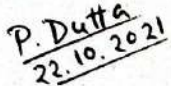
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P. Datta
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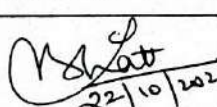
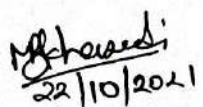
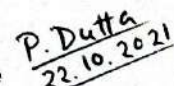
85	While transporting the heavy laden Equipment like transformer / Reactor by road from Railway Stn. to Sub station, check whether all Safety precautions are taken. Like safe lifting capacity of crane, safe load on culvert / Bridge/ Nala / Drain etc. and working plan is available at site with specific reference to safety e.g. local earthing, skilled & experience manpower, proper T&P, strength and LT wires / HT wires interrupting the height of equipment and the required clearance maintained etc. Permission to be obtained from concerned authority if required. "Impact recorder on the equipment like Reactor / Transformer must be installed during transportation"	Yes / No. NA	
86	Check that the adequate and safe means of access and egress has been provided for all work places as far as reasonably practicable and is being used by the workers.	✓ Yes / No.	
87	Check all projected nails has been removed or bent over to prevent injury.	✓ Yes / No.	
88	Check Scrap/ waste materials have not been allowed to accumulate at the site and that the scrap materials has been stored at the earmarked isolated place.	✓ Yes / No.	
89	Ensure that the worker while working at height, any material and tool are not being thrown by them to cause injury (accident) to worker standing adjacent to Gantry/ Tower.	✓ Yes / No.	
90	Check the worker are under constant surveillance by the other person while working at height.	✓ Yes / No.	
91	Check that lifting appliances and machines and vehicles used on the construction site is of sound material and good quality and is free from patent defects and is strong enough to with safely the load and stresses to which they will be subjected.	Yes / No.	Execution work Completed.
92	Check structures and equipment is being used only for the purpose for which they were intended.	✓ Yes / No.	
93	Check equipment has been operated by the competent person.	✓ Yes / No.	



94	Check unskilled labour are not utilized for skilled jobs and only experience persons are deployed for erection.	Yes/No. <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No.	
95	(a) Check no metallic measuring tapes are being used during expansion of charged bays. (b) Check metal ladders are not being used in the vicinity of exposed live electrical equipment.	Yes / No. NA Yes/No. <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No.	
96	Check that the adjacent charged area of a yard should be properly fenced off.	Yes / No.	s/y fencing work under progress.
97	Check ladders/ lengthy articles / lengthy equipment etc. should always be carried in horizontal position.	Yes/No. <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No.	
98	(a) Record of Monthly Safety Activity/Audit Report conducted by Contractor's Safety Officer as per provision of Safety Plan. (b) Status of compliance of audit observations.	Yes/No. <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No.	
99	Check all statutory requirements/ Insurance policies are taken by contractor, all Project specific & POWERGRID as co-assured, including Workman compensation policy to provide adequate coverage for any accident etc. (i) Registration Certificate under BOCW — valid (ii) Labor License — valid (iii) Employee Compensation Policy — valid (iv) All applicable Insurance Policies as per provision kept in the Contract. — OK.	valid	
100	Remark, if any : 1). Health checkup of workers to be conducted. 2). First Aid Register to be updated. 3). Induction training Record to be updated.		
Signature  22/10/2021		Signature  22/10/2021	
Name : C.S. Shatt Designation: Engineer (POWERGRID Site Rep.)		Name : Memish B Khawedi Designation: Engineer Safety steward ASM-PM-1 (POWERGRID RHQ Rep.)	
		Signature  22.10.2021	
		Name : Pranab Dutta Designation : Safety Officer Rep. from Contractor : NECCON POWER & INFRA LTD	

Copy to: Regional I-C /Projects I-C (Region)/ Site I-C., POWERGRID/ Project Site I/c, Agency.



94	Check unskilled labour are not utilized for skilled jobs and only experience persons are deployed for erection.	Yes/ No.	
95	(a) Check no metallic measuring tapes are being used during expansion of charged bays. (b) Check metal ladders are not being used in the vicinity of exposed live electrical equipment.	Yes / No. NA Yes/ No.	
96	Check that the adjacent charged area of a yard should be properly fenced off.	Yes / No.	s/y fencing work under progress.
97	Check ladders/ lengthy articles / lengthy equipment etc. should always be carried in horizontal position.	Yes/ No.	
98	(a) Record of Monthly Safety Activity/Audit Report conducted by Contractor's Safety Officer as per provision of Safety Plan. (b) Status of compliance of audit observations.	Yes/ No. Yes/ No.	
99	Check all statutory requirements/ Insurance policies are taken by contractor, all Project specific & POWERGRID as co-assured, including Workman compensation policy to provide adequate coverage for any accident etc. (i) Registration Certificate under BOCW — valid (ii) Labor License — valid (iii) Employee Compensation Policy — valid (iv) All applicable Insurance Policies as per provision kept in the Contract. — OK.		
100	Remark, if any : 1). Health checkup of workers to be conducted. 2). First Aid Register to be updated. 3). Induction training Record to be updated.		
Signature  Name : C.S. Bhatt Designation: Engineer (POWERGRID Site Rep.)		Signature  Name : Manish B Khareedi Designation: Engineer Safety steward ASM-PM-1 (POWERGRID-RHQ Rep.)	
		Signature  Name : Pranab Dutta Designation : Safety Officer Rep. from Contractor : NECCON POWER & INFRA LTD	

Copy to: Regional I-C /Projects I-C (Region)/ Site I-C., POWERGRID/ Project Site I/c, Agency.

ANNEXURE IX

Notification of Grievance Redressal Committee



पावर ग्रिड कारपोरेशन ऑफ इंडिया लिमिटेड
एन.आर.पी.एस.आई.पी, Guwahati



अंतर कार्यालय झापन

प्रेषक / From : D G M
(NERPSIP & ESMD) ,Guwahati

सेवा में/To : **All Site In-charge,**
Silapathar, Teok, Amingaon,
Guwahati, Tezpur, Mangaldoi,
Dibrugarh, Chapakhowa,
Sarupathar, Misa.

Copy to: GM, NERPSIP

संदर्भ संख्या / Ref: NERPSIP/GHY/ Grievance/AEGCL/239 dated 12.01.2017

दिनांक / Date : 13.02.2017

विषय/Sub :- Site / Project Level Grievance Redressal Committee (GRC)

Dear Sir,

With reference to the above, this is to inform you that as envisaged in the World Bank's Project Appraisal Document (PAD) on NERPSIP, **Site/project level GRCs** have been constituted for each project site under NERPSIP, Assam comprising of nominated representatives from both POWERGRID and AEGCL.

In this regard, henceforth, you are requested to handle all kinds of grievances received at site through the site level GRC and resolve it in a time bound manner.

You are also requested to co-ordinate with AEGCL for nomination of members for GRC also from local administration/village panchayats/reputed persons from society after obtaining consent from them.

This is for your kind information and necessary actions at your end.

Enclosed: Letter from AEGCL (File No: AEGCL/MD/WB/NERPSIP/TECH-I/2016/56)
Dated 09.02.2017

(J. Bardhan)



ASSAM ELECTRICITY GRID CORPORATION LIMITED

Regd. Office: 1st Floor, Bijulee Bhawan, Paltan Bazar, Guwahati – 781 001

CIN: U40101AS2003SGC007238

Phone: 0361-2739520/Fax: 0361-2739513, Web: aegcl.co.in, E-mail: managing.director@aegcl.co.in

File No. AEGCL/MD/WB/NERPSIP/TECH-I/2016/56

Date: 09.02.2017

To,

All AGMs as per attached list.

Subject: Constitution of Site Level Redressal Committee (GRC) for World Bank Funded North Eastern Region Power System Improvement Project (NERPSIP).

With reference to the above, this is to inform you that as per agreed World Bank's Project Appraisal Document (PAD) on NERPSIP (Copy Enclosed), it is imperative for the state utility to set up a "Grievance Redressal Mechanism" as mentioned in the state specific ESPPF for effective handling of all stake holder complaints arising out of the project implementation.

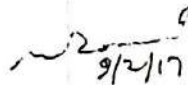
You are hereby designated as a member of the Grievance Redressal Committee (GRC). You will keep records of all grievances received during the execution of the project including contact details of complainant, date that the complaint was received, nature of grievance, agreed corrective actions and final outcome. The GRC should resolve the concerns of project affected persons in a time bound manner without impacting the project implementation.

You are also informed that the Implementing Agency (IA) POWERGRID has also nominated members for the GRC.

The detailed list GRC members is enclosed herewith as Annexure-I: For Sub-station Packages, Annexure-II: For Transmission Line Packages and Annexure-III: For Pile Foundation Packages.

This is for information and necessary action.

Encl: As stated above.


9/2/17

(U. N. Borah)

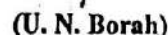
Chief General Manager [T&T]

Memo No.: AEGCL/MD/WB/NERPSIP/TECH-I/2016/56(a)

Date: 09.02.2017

Copy to:

1. The Director (PMU), APDCL, Bijulee Bhawan, Guwahati-01 for information.
2. The DGM, LA T&T Circle/UA T&T Circle/Tezpur T&T Circle/Bongaigaon T&T Circle, AEGCL for information and n/a.


/

(U. N. Borah)
Chief General Manager [T&T]

ANNEXURE-1

WORLD BANK FUNDED NER POWER SYSTEM IMPROVEMENT PROJECT (NERPSIP)

NERPSIP_EHV GRID SUB-STATION			
Package-Name	Package Description	Members from AEGCL for Site Level GRC	Members from PGCIL for Site Level GRC
ASM-SS-01	Substation Package (ASM-SS-01) Excluding Transformers for		
	(i) 132/33KV Silapathar (New) S/S	Assistant General Manager, T&T Division, North Lakhimpur, AEGCL	P A Kumar, DM, Silapathar
	(ii) 132/33 KV Tezpur (New) S/S	Assistant General Manager, 132/33 KV Depota Grid sub station, AEGCL, Depota	S. K. Dutta, Ch. Manager, Tezpur
	(iii) Extn. of 132/33 KV Dhenaji S/S	Assistant General Manager, T&T, Division, North Lakhimpur, AEGCL	P A Kumar, DM, Silapathar
	(iv) Extn. of 132/33 KV Sonabali S/S	Assistant General Manager, 132/33 KV Depota Grid sub station, AEGCL, Depota	
	(v) Augmentation of 220/132KV Samaguri S/S.	Assistant General Manager, 220/132/33 KV Samaguri Grid Sub Station, AEGCL, Samaguri	S. K. Datta, Ch. Manager, Tezpur
ASM-SS-02	Substation Package (ASM-SS-02) Excluding Transformers for		
	(i) 220/132KV Behising(New) S/S	Assistant General Manager, 132/33 KV Dibrugarh Grid Sub Station, AEGCL, Dibrugarh	
	(ii) Extn of 220 KV Tinsukia S/S	Assistant General Manager, 220/132/33 Tinsukia KV Grid Sub Station, AEGCL, Tinsukia	S. F. Shah, Asst. GM, Dibrugarh
	(iii) 132/33 KV Chapakhowa (New) S/S	Assistant General Manager, 220/132/33 Tinsukia KV Grid Sub Station, AEGCL, Tinsukia	
	(iv) 132/33 KV Sarupathar (New) S/S	Assistant General Manager, Jorhat T&T Division, AEGCL, Garmur	D. D. Misra, Asst. GM, Sarupathar
	(v) 132/33KV Teok (New) S/S	Assistant General Manager, Jorhat T&T Division, AEGCL, Garmur	S. N. Dey, Ch. Manager, Teok
(vi) Extn of 132/33KV Rupai S/S.	Assistant General Manager, 220/132/33 Tinsukia KV Grid Sub Station, AEGCL, Tinsukia	S. F. Shah, Asst. GM, Dibrugarh	

ANNEXURE-II

WORLD BANK FUNDED NER POWER SYSTEM IMPROVEMENT PROJECT (NERPSIP)

NERPSIP TL Package

Package-Name	Package Description	Members from AEGCL for Site Level GRC	Members from PGCIL for Site Level GRC
	Turnkey Tower Package (TW01) including conductor, insulators, earthwire/OPGW, hardware fitting and accessories for conductor & earth wire for		
TW01	(i) 220 kV D/C Rangia-Amingaon	Assistant General Manager, 132/33 KV Rangia Grid sub station, AEGCL, Chirakhundi	K. C. Barman, Asst. GM, Guwahati
TW02	(ii) 220 kV D/C Tinsukia-Behiating	Assistant General Manager, 132/33 KV Dibrugarh EHV SS, AEGCL, Dibrugarh	S. F. Shah, Asst. GM, Dibrugarh
	Turnkey Tower Package (TW02) including conductor, insulators, earthwire/OPGW, hardware fitting and accessories for conductor & earth wire for		
	(i) 132 kV D/C Kahilipara-Guwahati Medical College TL	Asst. General Manager, 132/33 KV Kahilipara Grid S/S, ASEB Campus, Guwahati - 781 019	K. C. Barman, Asst. GM, Guwahati
	(ii) 132 kV D/C Amingaon-Hazo TL	Asst. General Manager [T & T], ASEB CAMPUS, NARENGI, GUWHATI - 781 026	
	(iii) LILO of 132 kV S/C Rangia-Rowla TL	Assistant General Manager, 132/33 KV Depota Grid sub station, AEGCL, Depota	S. K. Rava, DM, Mangaldoi
TW03	(iv) LILO of 132 kV S/C Kamalpur-Sishugram at Amingaon	Asst. General Manager, 132/33 KV Kahilipara Grid S/S, ASEB Campus, Guwahati - 781 019	
	(v) LILO of 132 kV S/C Kamalpur-Khamakhya at Amingaon	Asst. General Manager, 132/33 KV Kahilipara Grid S/S, ASEB Campus, Guwahati - 781 019	K. C. Barman, Asst. GM, Guwahati

ANNEXURE-III

WORLD BANK FUNDED NER POWER SYSTEM IMPROVEMENT PROJECT (NERPSIP)

NERPSIP Pile Foundation Packages

Package-Name	Package Description	Members from AEGCL for Site Level GRC	Members from PGCIL for Site Level GRC
P-01	Pile Foundation Package for River Crossing locations corresponding for Tower package 220 KV D/C Rangia-Amingaon TL	Assistant General Manager, 132/33 KV Rangia Grid sub station, AEGCL, Chirakhundi	K. C. Barman, Asst. GM, Guwahati
	Pile Foundation Package for River Crossing locations corresponding for Tower package 132 KV S/C (on D/C Tower) Rupai-Chapakhowa TL	Assistant General Manager, 220/132/33 Tinsukia KV Grid Sub Station, AEGCL, Tinsukia	S. F. Shah, Asst. GM, Dibrugarh

Signature
9/2/17

Chief General Manager (T&T)

O/o The MD, AEGCL, Bijulee Bhawan, Ghy-01